### ICSI 2021 Theme: Leveraging Sustainable Infrastructure for Resilient Communities
**December 6 - 10, 2021**

<table>
<thead>
<tr>
<th>DAY</th>
<th>TIMES</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td><strong>MONDAY</strong></td>
<td>Dec 6</td>
<td><strong>Coalition Summit Videos</strong></td>
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<tr>
<td></td>
<td>24 hr</td>
<td>Technical Tours: ASCE Parking Lot Project, Ion Center, Katy Prairie Conservancy, Bridgeland Development in Cypress, Port of Houston Ship Channel</td>
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<td>24 hr</td>
<td>Abstracts for all presentations</td>
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<td>Posters</td>
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<td>Attendee Networking</td>
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<td>24 hr</td>
<td>Sustainable Development Infrastructure (U.S.) (SDI) Supporter information</td>
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### DAY 1: Global Perspectives

**Opening Welcome Addresses**
Dennis Truax, ASCE 2022 President; Carol Haddock, ICSI 2021 Chair; Barbara Luke, ICSI 2021 Technical Program Committee Chair

**Plenary: Addressing Equity of Climate Impacts in Water-stressed Communities**
Moderator: K.N. Gunalan
Speaker: Shamila Nair-bedouelle, Assistant Director-General for Natural Sciences at the United Nations Environment Programme (UNEP), UNESCO (invited)

**Plenary: Introduction**
Luic Fauchon (invited); Prince Albert of Monaco (invited)

### HOT TOPIC 1
**Doing the Right Projects on the United States-Mexico Border**, Anthony Kane*, Institute For Sustainable Infrastructure ; Oscar Cortes, Federacion Mexicana de Colegio de Ingenieros Civiles ; David Baxter, World Association of Public Private Partnerships ; Calesto Mateo-Hanel, North American Development Bank (invited)

### HOT TOPIC 2
**Come Hell and High Water: Building Resilience for a Sustainable Houston**, Laura Patino, City of Houston ; Sharon Climo, Houston Public Works ; Stephen Costello, City of Houston ; Adam Eaton*, Houston Public Works

**Hurricane Dorian’s Impact on The Bahamas: Making the Case for a Risk Management Based Approach to Infrastructure in a Small Island Developing State**, R. Nicholas Dean* and De-Sha Dean, Integrated Building Services, Ltd.

**From Results-Oriented to Process-Oriented: Leveraging Disruptive Practices to Face Complex and Uncertain Futures**, Quin MacKenzie* and Bronwyn Worrick*, success consulting inc.

### BREAK

### Track 1: Coastal resiliency
**A Resilient Texas Coastline - Aligning Our Natural and Built Infrastructure for the Future**, Chris Latziv*, James Gibeaut, and Taylor Nordstrom, ACCOM ; Joshua Oyer, Texas General Land Office ; Tony Williams, Texas General Land ; Kelly de Schau, Galveston Island Park Board of Trustees

**Coastal Resilience and Sustainable Infrastructure Management System**, Daniel Campbell*, Caribbean Engineering and Design Consultants Ltd (CEDCO)

**Galveston Bay Park Plan SSPEED Center**
Severe Storm Prediction, Education, & Evacuation from Disasters, Charles Poland*, Walter P Moore and Associate, Inc.

**"Design of Interconnected Infrastructure Systems for Resilient and Sustainable Communities, Teresa Vangelis*, WSP USA ; Laura Michel, Catholic University of America ; Mehrshad Kheifizadeh, Southern California Gas Company ; Scott Campbell, National Ready Mixed Concrete Association ; Brian McSweeney, Amit Joshi, and Chris Horuchi**

### Track 2: Green infrastructure

**Use of Green Stormwater Infrastructure to Sustainably Address Changing Storms**, Matthew Jones* and Alysondia Eason, Hazen and Sawyer


**Green-Gray Infrastructure for Coastal Climate Resilience**, Emily Corwin*, Conservation International; Will Peterson, ACCOM

**Comprehensive Stakeholder Engagement in an Emergency Management and Debris Project**, Julia Evans*, Maria Coodo, and Giovanna Durand, RINA Consulting

**Incorporating Sustainability in an Undergraduate Environmental Engineering Curriculum**, Ramantharan Sambandha*, Central State University

### Track 3: Vulnerable communities
**Humanitarian Crisis Engineering at a Refugee Camp**, Erin Hughes*, Solidarity Engineering

**Defining a Sustainability Path to Meet Short and Long-Term Goals**, Jennifer Ninete* and Ned Bagnawski*, ADR

**Inspection Planning for Transmission Line Systems Exposed to Hurricanes using Reinforcement Learning**, Ashkan Jeddi*, Nirmam Osdhghani, and Abdollah Shafizadeh, The Ohio State University


### Track 4: Sustainable Infrastructure: The Big Picture
**From Results-Oriented to Process-Oriented: Leveraging Disruptive Practices to Face Complex and Uncertain Futures**, Quin MacKenzie* and Bronwyn Worrick*, success consulting inc.


**Incorporating Sustainability in an Undergraduate Environmental Engineering Curriculum**, Ramantharan Sambandha*, Central State University

**"Design of Interconnected Infrastructure Systems for Resilient and Sustainable Communities, Teresa Vangelis*, WSP USA ; Laura Michel, Catholic University of America ; Mehrshad Kheifizadeh, Southern California Gas Company ; Scott Campbell, National Ready Mixed Concrete Association ; Brian McSweeney, Amit Joshi, and Chris Horuchi**

### Track 5: Energy Resilience & Reliability

**Comprehensive Stakeholder Engagement in an Emergency Management and Debris Project**, Julia Evans*, Maria Coodo, and Giovanna Durand, RINA Consulting

**Incorporating Sustainability in an Undergraduate Environmental Engineering Curriculum**, Ramantharan Sambandha*, Central State University

**"Grid-Interactive Efficient Buildings: Leveraging the Federal Building Stock to Support the Future Grid – A Case Study from Central Islip, New York, Clayton Porcsa*, John Swanton, Brad McCoy, and F. Todd Davidson*, United States Military Academy**
Balancing Trade-Offs Between Efficiency and Resilience in Pursuit of Sustainable and Adaptable Infrastructure Systems, Sam Markle, University of California, Merced

Monitoring the Stability of a Moraine Dam by Differential Interferometry (DInSAR) to Prevent GLOFs Disasters from Arhuaco Lake, Juan Carlos Torres and Harrison Jara, National Institute for Research in Glaciers and Mountain Ecosystems (INAGEM); Christian Rivero*, National Agrarian University La Molina (UNALM)

Why Standardize Carbon Neutrality in Delivery of Complex Projects? Colin Ourifield; Felix Hu, Judy Tao* and Obalu Ejehwamu, The University of Manchester

Are Resilience, Climate Change Adaptation, and Sustainability Planning Approaches Compatible? Results of a Comprehensive Assessment Across Community-Focused Guidance Literature, Emily Wajloko and Christopher Clavin*, NST

Sustainability Approach with Resilience Planning in Transmission Line Engineering, Ajay Mallik* and Sangita Mallik, SANPEC Inc

Live Discussion

Live Discussion

Live Discussion

Live Discussion

Live Discussion

2:05 PM - 2:15 PM ET

2:15 PM - 3:45 PM ET

3:45 PM - 5:15 PM ET

10:00 AM - 10:30 AM ET

10:10 AM - 11:40 AM ET

11:40 AM - 11:45 AM ET

2:50 PM - 3:40 PM ET

7:30 AM - 8:30 AM ET

8:30 AM - 9:30 AM ET

9:45 AM - 10:15 AM ET

10:30 AM - 11:30 AM ET

11:45 AM - 12:35 PM ET

11:45 AM - 12:55 PM ET

11:45 AM - 12:15 PM ET

Track 1: Sustainable Procurement
Theresa Harrison and Nancy Kralik

Track 2: Resilience (Part 1)
Laura Patino

Track 3: People: Social, Society, Stakeholders (Part 1)
Tara Haramoto

Track 4: Planning, Procurement, and Finance
Eric Bill

Track 5: Sustainability in Transportation Projects
Veronica O. Davis

HOT TOPIC 6
Gordie Howe International Bridge: Connecting Communities Beyond Four Wheels, Moderator: Catherine Shearan, Parsons Corporation; Speakers: Bruce Campbell, Parsons Corporation; Nicole Flippance, Bridging North America; Heather Grandin* and Karen Thatcher, Windsor Detroit Bridge Authority; Lori Newton, Bike Windsor Essex

HOT TOPIC 7
Kowis Street Improvements: The First Houston / Harris County Area Project to Pursue Envision Verification, Moderator: Niki Foster, KDD, Speakers: Michael Bloom**, R.G. Miller Engineers, Inc.; Milton Rahman, Harris County Precinct Invited; Amanda Marshall, Harris County Engineering Department; Evan Sholl, Cobb Ferry & Associates; Connor Stokes, Holland Environmental & Communications

HOT TOPIC 8
Justice, Equity, Diversity, and Inclusion (JEDI): Improving Our Profession, Improving Our World, Moderator: Yvette Pearson, University of Texas at Dallas; Speakers: Quincy Alexander, Army Engineer Research & Development Center; Carol Martsoff, Urban Engineers; Frederick Paige, Virginia Tech - Department of Civil & Environmental Engineering

 día 3: Triple Bottom Line of Sustainability – Social, Environmental, Economic and Civil Engineers’ Role

Opening Welcome Address

Plenary: Community Equity Agreements (CEAs): Engaging with Frontline-Communities to Identify and Incorporate Enforceable Commitments During the Design and Review of Major Infrastructure Projects

1998 Texas Section of the American Society of Civil Engineers

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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>12:35 PM - 2:05 PM ET</td>
<td>Sustainable Procurement for Infrastructure, Nancy Krallik, Fluor Enterprises, Inc.; Theresa Harrison, City of South Bend, IN, DPK; Engineering Division (Retired) ; Cris Liban, Margaret Sadowick, Bernard Denike, Nancy Krallik, Fluor Enterprises, Inc.; Theresa Harrison, City of South Bend, IN, DPK; Engineering Division (Retired) ; Cris Liban, Margaret Sadowick, Bernard Denike,</td>
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<td>Strategies for Improving the Resilience and Sustainability of Critical Infrastructure – Lessons Learned from the United States Army, Stephen McCarthy, Ke'Shaun Walls, Phoebe Lee, F. Todd Davidson, R. Neil Blackwell, Aubrey Evans, Christine Panaioglou, Duncan Russell, and Brad McCoy*, United States Military Academy</td>
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<td>Improving Walkability by Focusing on Residents' Needs and Neighborhood's Built Environment, Abolfazl Seyfar and Pooria Chobbiarian*, University of Illinois at Chicago; Ak Mohammadali, Sharif University of Technology</td>
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<td>Public-Private Partnerships for Environmental, Social, and Governance Projects: How Private Funding for Infrastructure Can Produce Mutual Benefits for Companies and the Public, Joel Farrier** and Amanda Chai**, Burns &amp; McDonnell</td>
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<td>Design ideals for Extreme Heat Resiliency: Applications in Public Transit Systems, Matthew Daligas and Sydney Hope, Burns &amp; McDonnell</td>
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<td>2:05 PM - 2:10 PM ET</td>
<td>Live Discussion</td>
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<td>2:10 PM - 3:10 PM ET</td>
<td>Plenary: World-Class Sustainability Leadership through a Diverse Workforce</td>
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<td>Speakers: Christine Harada, Executive Director of the Federal Permitting Improvement Steering Council and Former US Federal Chief Sustainability Officer; Catherine Flowers, Center for Rural Enterprise and Environmental Justice and Vice Chair of the White House Environmental Justice Advisory Council; Gretchen C. Daily, Co-founder and Faculty Director of the Stanford Natural Capital Project 1; Director of the Center for Conservation Biology and Bing Professor of Environmental Science, Stanford University; Senior Fellow, Woods Institute</td>
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<td>3:10 PM - 4:00 PM ET</td>
<td>Technical Tour: Brazoria County Solar Farm</td>
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<td>4:00 PM - 5:00 PM ET</td>
<td>Virtual Piano Party Happy Hour</td>
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<td>10:00 AM - 10:10 AM ET</td>
<td>Opening Welcome Address</td>
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<td>10:10 AM - 11:40 AM ET</td>
<td>Plenary: A Conversation on IMPACT: Infrastructure Mobilizing People And Community Transformation (Carol Haddock/Don Anderson)</td>
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<td>11:45 AM - 12:15 PM ET</td>
<td>HOT TOPIC 9</td>
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<td>A New Day for Green and Multi-Benefit Infrastructure/Programs in LA County: the Safe Clean Water Program, TJ Moon and Matt Frary*, Los Angeles County Department of Public Works</td>
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<td>HOT TOPIC 10</td>
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<td>The Resiliency Cycle, William Deane, Paul Tschirky* and Andrew Wynn-Kendall, APTM; Chip Kline, Louisiana Coastal Protection and Restoration Authority</td>
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<td>12:15 PM - 1:25 PM ET</td>
<td>BREAK</td>
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<td>1:25 PM - 2:35 PM ET</td>
<td>Track 1: Transportation Systems</td>
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<td>Theresa Harrison</td>
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<td>Enhanced Investigation of Material Flood Damage to Support Multi-Scale Flood Loss Prediction, Anna Katya Opel** and Elizabeth Matthew, Louisiana Tech University</td>
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<td>2:35 PM - 3:45 PM ET</td>
<td>Track 2: Sustainability of Buildings and other Structural Systems</td>
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<td>Krishina Reddy</td>
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<td>The Promise of Shared Electric Autonomous Mobility (SEAM) to Close Mobility Gaps for Vulnerable Populations, William Lytton*, Fort Hill Companies LLC</td>
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<td>3:45 PM - 4:45 PM ET</td>
<td>Track 3: People: Social, Society, Stakeholders (Part 2)</td>
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<td>Anthony Kane</td>
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<td>Impacts of Material Properties on the Resilience of the Built Environment, Aron Newman*, NIST</td>
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<td>4:45 PM - 5:45 PM ET</td>
<td>Track 4: Materials and Construction Components (Part 1)</td>
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<td>Michishuye Akinaye</td>
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<td>The Roadmap to Resilience for Small to Medium Size Communities, Cherylney Kelby*, Missouri Department of Natural Resources; Dana Al-Qadi, AECOM</td>
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<td>5:45 PM - 6:55 PM ET</td>
<td>Track 5: Local Lessons: Learning from One Another</td>
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<td>Griselda Gonzales</td>
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<td>Baking Resilience into Transportation Planning, Keith Bucklew*, HDR Inc.</td>
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<td>&quot;Mapping Standards and Rating Measures of Structural Green Roofs for Socio-Environmental Life Cycle Assessments, Fariborz Tehrani*, California State University, Fresno; Mohammad Ali Dastan Diznab, Arab University</td>
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<td>&quot;Sustainability Rating of Internally Cured Concrete in Marine Environments Using Service Life Prediction Models, Mohammad Ali Dastan Diznab and Fatemeh Davoodi, Arab University; Fariborz Tehrani*, California State University, Fresno</td>
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<td>6:55 PM - 7:05 PM ET</td>
<td>&quot;Sustainability Rating of Internally Cured Concrete in Marine Environments Using Service Life Prediction Models, Mohammad Ali Dastan Diznab and Fatemeh Davoodi, Arab University; Fariborz Tehrani*, California State University, Fresno</td>
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<td>7:05 PM - 8:15 PM ET</td>
<td>Mercedes Avenue Greenway Project: A Model for Future Greener Urban Streets, Chris Jansen*, Tetra Tech</td>
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<td>8:15 PM - 9:25 PM ET</td>
<td>City Tour of Pensacola</td>
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<td>9:25 PM - 10:25 PM ET</td>
<td>A Conversation with Mayor of Pensacola</td>
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<td>10:25 PM - 11:35 PM ET</td>
<td>Entertainment</td>
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Driving the Future of Transportation Planning Through Emerging Trends, Andrew Reid*, Burns & McDonnell

A Holistic Approach to Evaluating the Sustainability and Resiliency of Buried Drainage Structures Relative to Climate Change, Michael Pluimer*, University of Minnesota - Duluth

Dr. Abhishek Hill, ET

Addressing Embodied Carbon as a Sustainability Issue and Implementing New Technology to an Industry that Resists Change, Sydney Hope*, Burns & McDonnell

Improvements in Building Energy Savings through Two‐Layer Phase Change Materials (PCM) Systems Tailored for Different Indian Climate Zones, Ghanashyam Pal* and Shilpbarasan Chitravel, Shiv Nadar University


Bridgeland, A Master Planned Sustainable Community, Mark Gelbringer*, Howard Hughes Corporation

Small Changes, Large Effects: Interconnected Infrastructure Networks in Food Supply Chain Disruptions and Multi‐Modal Transportation Solutions, Rae Zimmerman*, New York University

A Holistic Approach to Evaluating the Sustainability and Resiliency of Buried Drainage Structures Relative to Climate Change, Michael Pluimer*, University of Minnesota - Duluth

All the Easy Roads Have Been Built – Building Social Capital for More Resilient Communities, Cheley Smith*, Burns & McDonnell; Melissa Meyer and Christine Politico, Texas Department of Transportation

FUTURE: Materials and Construction Components (Part 2) Sabrina Moore

Incorporating Spatial Scale into Resilience Ratings for Sustainable Post‐Disaster Material Management Systems, James Hansan, Derek Manheim*, and Nasti Vessella, California Polytechnic State University

Geotechnical Engineering Contribution For Sustainable Dredging, Myorko Felici, Evelina Fratalocchi, and Federica Pascualini*, Università Politecnica delle Marche

Thermodynamics: A Cost‐Efficient and Environmentally‐Sound Remediation Technology for Widespread Applications, Matthew Dolinage and Sydney Hope*, Burns & McDonnell

**Weekend Summary**

Track 1: Summary of ICSC Summit Sessions

CIFT Davidson and Mikhail Chester

*What Will It Work? Examining Alignment of Four Infrastructure Solutions with the Draft ASC 73: Standard Requirements for Sustainable Infrastructure, James Bieler, Duncan Russell, Andrew Zoller, Claudia E. Barron, and Brad McCoy*, United States Military Academy

What does Sustainable Infrastructure mean… and what should it mean? Josh Jacob*, WAP

Estimating the Effectiveness, Benefits, and Costs of Reflective Asphalt Coatings for Mitigating Extreme Heat in a Desert Urban Environment, Ashley Bradbent and Matt Fraser, Arizona State University; y; Sam Markolf*, University of California, Merced; Chris Hoehne, National Renewable Energy Laboratory

Track 2: Imagining Future Cities

Krishna Reddy

Track 3: Standards, Technology, and Modeling

Kris Hartley, The Education University of Hong Kong; Nadine Brahimi, University of Waterloo; Shoshanna Saxe, University of Toronto; Yoram Shifman and Alona Nitzan Shifman, Technion

Using Design Automation to Make Smarter Infrastructure Decisions: An Engineer Learns to Code, Tyler Ortigo*, Forterra Inc.; Nicholas Bradd, Natra

Thermodynamics: A Cost‐Efficient and Environmentally‐Sound Remediation Technology for Widespread Applications, Matthew Dolinage and Sydney Hope*, Burns & McDonnell

Track 4: Materials and Construction Components (Part 2)

Sabrina Moore
### Assessing Climate Change Uncertainty for Infrastructure Planning with Physical-Parameter Based State-Space Models and Bayesian Inference

Yuchuan Lai*, Peter Adams, and Matteo Pozzi, Carnegie Mellon University

### Objective Comparison of Sustainable Asphalt Concrete Solutions for Airport Pavements

Domi Van Den Hauwe*, Centre for Pavement Engineering Education; Greg White, University of the Sunshine Coast

### Sustainability Aspects of Coir-Fiber Geosynthetic Rolled Erosion Control Products

Jennifer Smith; Shobha Bhatia*, Centre for Pavement Engineering; Greg White, Inference; Yuchuan Lai*, Peter Adams, and Matteo Pozzi, Syracuse University

### The Significant Sustainable Benefits Afforded by Geosynthetics in Key Infrastructure Applications: A Review

Ian Fraser*, TCS Geotechnics; David Sharciff, ABG Ltd.

### Life Cycle Assessment of Sediment Control Devices

Susan Burns and Hejintao Huang*, Georgia Institute of Technology; Cameron Tremain, Whitman, Requardt and Associates, LLP

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### Posters

**A Resilient Traffic Signal Control System Using Artificial Intelligence**, Wangyu Ma*, The Transitec Group

**BIM/GIS Integration for Regional Railways Asset Management**, Manuel Garrenena*, Politecnico Di Milano; Marco Scasino, Politecnico di Milano; Elia Tomelli, Politecnico di Milano

**Building a Framework for Resilient Stakeholder Engagement to Support Equitable Infrastructure Project Outcomes**, Ianlle Smith-Colo*, Southern Methodist University; Collin Yarbrough, Southern Methodist University

**Eat Prosperity Campaign**, Bryan Toton*, Eat for Prosperity, Inc.

**Evaluating Wildfire Mitigation Strategies for Utility Distribution Poles**, Shuna Ni*, Utah State University

**Hurricane Damage Classification and Performance-Based Fragility Analysis of Overhead Transmission Towers**, Shuna Ni*, Ohio State University; Abdollah Shafieezadeh, The Ohio State University

**Springboard to Success Factors for Precast Segmental Superstructure Construction for Metro Project Systems in India**, Devanshu Pandit, CEP University; Aastha Shah*, Purdue University

**Use of Regional Air Temperature Observations and Forecasts to Assess Effect of Water Temperature Change in Drinking Water Distribution Systems**, David Dzombak, Carnegie Mellon University; Yuchuan Lai*, Carnegie Mellon University

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### Posters (continued)

**The Critical Success Factors for Precast Segmental Superstructure Construction for Metro Project Systems in India**, Devanshu Pandit, CEP University; Aastha Shah*, Purdue University

**Springboard to Success Factors for Precast Segmental Superstructure Construction for Metro Project Systems in India**, Devanshu Pandit, CEP University; Aastha Shah*, Purdue University

**Use of Regional Air Temperature Observations and Forecasts to Assess Effect of Water Temperature Change in Drinking Water Distribution Systems**, David Dzombak, Carnegie Mellon University; Yuchuan Lai*, Carnegie Mellon University

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### Live Discussion Live Discussion Live Discussion

ICSI 2021 Wrap-Up

1:45 PM – 2:00 PM ET