

Technical
Sessions
Schedule
2022



View full Road School technical program at https://purdue.pub/rs2022-program

# TUESDAY, MARCH 15

### Visit With the Exhibitors

North & South Ballrooms, Purdue Memorial Union 8:00 AM-5:00 PM

### **Opening Session**

Loeb Theater, Stewart Center 9:30–10:30 AM

#### **Student Poster Session**

Purdue Memorial Union 11:00 AM-1:50 PM

	Bridges	Bridges Design/Construction			Elected Officials	Electric & Connected Vehicles	Local Agency	Maintenance & Operations	Multimodal Transportation	Pavements	Project Management Planning	/ Safety	Stormwater & Wetlands	Traffic Operations
	STEW 206	LOEB Theater	STEW 302	STEW 306	STEW 311	STEW 279	STEW 218 CD	STEW 218 AB	STEW 313	STEW 214 AB	Fowler Hall	STEW 214 CD	STEW 278	STEW 310
11:00-11:50 AM	1. INDOT Bridge Scour Policy Update and Hydraulics Request Application	<b>7.</b> Technology in Ready Mix Concrete: Admixtures to Hardware				25. AVs for Travelers With Disabilities: A Demonstration of the EASI RIDER Prototype	<b>30.</b> How to Conduct a Sidewalk Condition Survey					<b>51.</b> Making Streets Complete and Inclusive		
12:00-12:50 PM	2. Design and Construction of an Innovative Non- Fracture Critical Steel Straddle Bent			16. Get In, Get Out, and Stay Out! Maintenance of Traffic for Long- Life PCCP Projects									<b>56.</b> New IDM Chapter 204: "Post-Construction Stormwater BMPs"	
1:00–1:50 PM	3. Bridge Deck Repair and Preservation	8. Lessons Learned: US-150 Over Kanie Creek Bridge Replacement	12. Innovative Engineering for Roundabouts and Intersections	17. Clear Path 465 Project Update	21. The Carrot or the Stick? Employee Engagement	<b>26.</b> Challenges and Opportunities for Electric Vehicles in Indiana	31. 96th and Keystone Interchange Construction: An LPA Project	<b>35.</b> Aerial Lidar Makes the Grade	<b>39.</b> Overcoming R/W Challenges in the Bus Lane	43. Rehabilitation of I-70 Composite Pavement Using Peel and Stick Strip Membrane and Geosynthetic Interlayer Paving Fabric	<b>47.</b> Rebuilding Our Streets: A 10-Year Improvement Plan		<b>57.</b> Post Installation Inspection for All Storm Drain Pipes	<b>61.</b> INDOT ITS: Past, Present, and Future
2:00-2:50 PM	4. Built-Up Press-Brake- Formed Tub Girders: Design and Analysis	9. Construction Practices and Bridge Deck Cracking	13. River Bank Stabilization and Interchange Signing	18. INDOT Subgrade Treatment (Section 207)	22. Good Roads Require Good Drainage	<b>27.</b> Electric Vehicle Analytics: EV and Charging Station Usage in Indiana, Ohio, and Pennsylvania	32. Utility Coordination for Municipalities	<b>36.</b> LiDAR Mapping of Terrain and Stockpiles	40. Kentucky Statewide Corridor Plan: Linking Kentucky	44. Void Reducing Asphalt Membrane Benefits at Centerline Joints	48. Utility Coordination: Rules and Regulations	<b>53.</b> Indiana Operation Lifesaver: How You Can Help Stop Railroad Trespassing Fatalities	<b>58.</b> INDOT Construction Stormwater Training	<b>62.</b> I-465 and FlexRoad TSMO Projects
3:00-3:50 PM	5. Fundamentals and Strategies for Moving Steel Trusses	10. Sewer Interceptor Transformed Into a Transportation Rehabilitation Project	14. Every Interchange Has a Story	19. INDOT QC/QA for Soil Fill Sections (218-R-576)	23. Public Bidding and Public Purchasing Basics	28. ODOT and INDOT I-70 Truck Automation Corridor Project	33. Traffic and Accident Data in Context	37. Concrete Restoration and Maintenance	41. RAIL: Yesterday, Today, and Tomorrow in Indiana	45. Enhanced Approach for Full-Depth Asphalt Pavement Structural Evaluation	49. What Contractors Wish We Knew About Utilities	<b>54.</b> Improvements in Highway Lighting	<b>59.</b> Is Your Street Department Compliant With MS4?	<b>63.</b> Pavement Marking Updates
4:00-4:50 PM	<b>6.</b> The Eel River Bridge: A Historic Bridge Gets Relocated	11. MSE Wall Performance Issues and Remedies	15. Implementing Digital Twins for Design Review	20. Contract Special Provisions	24. Local Transportation Funding: Infrastructure Bill, Federal Funding, and Community Crossings Program Updates	29. LiDAR for Evaluating Lane Marking Reflectivity	34. Qualifications- Based Selection for Better Projects and Better Value	38. Floating Car Data as Input Source for Road Maintenance	<b>42.</b> Converting a Busy Street Into a Pedestrian Zone		<b>50.</b> Managing Risk in Projects Large and Small	<b>55.</b> Pedestrian Safety Management in Indiana	<b>60.</b> Drainage Considerations and Stormwater Structure Rehabilitation	<b>64.</b> INDOT Greenfield District Creates a Traffic Project

# WEDNESDAY, MARCH 16

### Visit With the Exhibitors

North & South Ballrooms, Purdue Memorial Union 8:00 AM-5:00 PM

## 95B. Indiana Statutes and Rules for Professional Engineering Licensure

Loeb Theater, Stewart Center 8:00-8:50 AM

### **B** Ethics Case Histories: A Comparison of Code Provisions

Loeb Theater, Stewart Center 9:00-9:50 AM

	Aviation	Bridges	Design/Construction			Finance/ Administration	Human Capital/ Leadership	Local Agency	Multimodal Transportation	Pavements	Project Manag	ement/Planning	Public Relations/ Communications	Public Safety	Safety	Stormwater & Wetlands	Traffic Operations	Winter Weather Operations
	STEW 202	STEW 206	Loeb Theater	STEW 302	STEW 306	STEW 311	STEW 218 AB	STEW 218 CD	STEW 313	STEW 214 AB	Fowler Hall	STEW 306	STEW 279	STEW 279	STEW 214 CD	STEW 278	STEW 310	STEW 278
8:00-8:50 AM	<b>65.</b> The Evolution of the Smart Runway	<b>72.</b> Hydrotex Articulating Block: Perfect for Bridge Scour Protection		<b>84.</b> Managing Risks When Letting With Exceptions	<b>92.</b> Automated Pile Driving Data Acquisition Devices	<b>97.</b> Federal Project Management: How to Prevent Ineligibility	103. Using EBM to Help Women Persist in Engineering	109. Establishment of Road Right-of-Way	117. Monon Greenway Carmel, IN: Before and Afte	123. Real-Time Concrete Strength Sensors for Infrastructure Monitoring	130. Electrifying Freight		141. Changing Interchanges: Educating Hoosiers on Alternative Designs		<b>150.</b> Do You Have a Safe System?	158. Learning the Ropes of Stormwater Management	162. Accommodating Rapid Development in Design Level Forecast	
9:00-9:50 AM	66. Updates on Huntingburg and Paoli Airport Projects	73. SME-PS Concrete Infrastructure Preservation Program		85. Lessons Learned From the New INDOT Aesthetic Permitting Process	93. Digital Design Data for Asset Collection	98. Evolutions in Innovative Transportation Funding	104. Working Our Way to Job Satisfaction	110. Panel Discussion or Right-of-Way Management		124. Increasing Roadway Performance With Geogrids	131. 80/94 FlexRoad: INDOT's First PEL Study		142. Big Data Applications: Innovative Tools for Public Involvement		<b>151.</b> INDOT Work Zone Safety Update	159. Missed That! Roadway Drainage Lessons	163. Flashing Yellow Arrows	
10:00-10:50 AM		74. An Introduction to Accelerated Bridge Construction With Precast Concrete		<b>86.</b> North Split Project Update	94. INDOT Protection of Karst Features During Project Development and Construction	99. Contractor Prequalification: Major Developments (2020–2022)	105. Women of the I-69 Corridor	111. Emotional Intelligence and Conflict Resolution	119. Conducting a Pedestrian Safety and Walkability Program	125. INDOT PCCP Specification Improvements: Better Performance and Durability	132. Cadaver Dogs and Unmarked Burials on Transportation Projects		143. Community Engagement During COVID-19		152. How About RoadHAT 4? Best Practices and Updates From RoadHAT 3	160. A Decade Later: Wetland and Stream Mitigation Results	164. Lessons Learned: Indianapolis Two-Way Conversion Study	
11:00–11:50 AM		<b>75.</b> Brent Spence Bridge Emergency Fire Repair		<b>87.</b> Racing to the I-69 Finish Line				112. Recouping Costs From Bridge Damage				_	144. Transparency in Transportation: Mitigating Social and Political Risk		<b>153.</b> Recent Safety Program Changes for Everyone	161. Indiana DNR's Stream and Wetland Mitigation Program		_
12:00-12:50 PM			_		_				_				145. Incident Response After Action Reviews Using Unmanned Aerial Systems (UAS)				_	<b>167.</b> Future of Mobile Observation Data Technologies
1:00-1:50 PM		<b>76.</b> Complex Bridge Load Rating of I-65 Over SR 46		88. SR 37 Hamilton County: Vision to Construction		100. In-Depth Road Funding (Highway Funding and Asset Management)	106. Generational Differences in the Workplace: Connecting Teams	113. White County Highway Facility	<b>120.</b> Road Buffets: Proving Road Diets Are for Everyone	126. Improving Your Chip and Sealing Procedures	133. Project Delivery Methods	137. It Takes a Village: Contract Administration Letting Preparation		146. 2022 Developments in Emergency Vehicle Traffic Signal Preemption	<b>154.</b> TScan: A Tool for Rapid Safety Evaluation		165. Unforeseen Covid Impacts on Indianapolis Traffic	168. Using Liquids in Winter Maintenance
2:00-2:50 PM	<b>69.</b> Airport Pavements	<b>77.</b> Bridge Load Rating for Overloaded Permit Vehicle	<b>81.</b> Benefits of Online, Collaborative Plan Review	89. Does That Utility Really Need to Move?			107. Public Speaking for Engineers and Local Officials	114. How Locals Take Control of Their Federal Aid Projects	<b>121.</b> Building a Network: Increasing Bicycle Infrastructure, Utilization, and Safety	<b>127.</b> Paving to the Finish Line: I-69 Section 6	134. Proactively Upgrading Aging Infrastructure for Multi- modal Corridor Renewal	138. Evolving INDOT's 20-Year Plans		<b>147.</b> Importance of Proactive Safety Analysis for Corridor Planning	<b>155.</b> Analyzing Pedestrian Crash Data Trends and Implementing Countermeasures		<b>166.</b> Perspectives on Past and Present MUTCDs	<b>169.</b> Maturing Your Winter Operations
3:00-3:50 PM	<b>70.</b> Aviation Research	<b>78.</b> Emergency Repair of the I-40 Hernado de Soto	82. Performance Engineered Mix Designs	90. Record-Breaking Trenchless Tunneling Success Demonstrates Value on SR-37		<b>101.</b> The Future of Transportation Funding	108. Reducing Workforce Attrition	115. Temporary Traffic Control for Local Roads: Work Zones 101	122. Complete Streets at Varying Scales: Challenges and Opportunities	128. Virtual Reality for Pavement Preservation Treatment Training	135. Streamlining Project Development Through Planning and Environmental Linkages	139. Integrating Design, ROW, and Utility Coordination for Improved Reliability		148. Trends and Solutions for Bicycle and Pedestrian Safety	<b>156.</b> Safety for the Most Vulnerable			170. NWS—Winter Weather Science
4:00–4:50 PM	<b>71.</b> Integrating Advanced Air Mobility Into Airports	Bridge Retrofits for	83. Adverse Effect? Dealing With Forgotten MOA Commitments	<b>91.</b> I-270 North Design-Build: Safety and Mobility Improvements		102. Utilizing IC 5-23 (Build Operate Transfer) for Local Infrastructure Projects		116. Temporary Traffic Control for Local Roads: Managing the Jobsite		129. Comparing Decision-Making Methods for Pavement Preservation Programming	136. Improving Document Retention Through Data Management Dashboards	140. Ready Mix Concrete 101		149. Fire Station Siting Study	157. Was That Crash Modification Factor Accurate?			<b>171.</b> Using RWIS Data for Winter Maintenance Decision Support