

2026 Michigan Infrastructure Conference

Breakout Session Schedule & Proposals

The 2026 Michigan Infrastructure Conference has received sixteen breakout session proposals covering a wide range of engineering disciplines, from wastewater modernization and road safety technology to megaproject management and emerging contaminant response.

Sessions are scheduled across four rooms — **Heritage Room, Red Cedar AB, Lincoln Room, and Room 106** — over four-time blocks. Together, they paint a picture of an industry grappling with aging systems, funding pressures, environmental responsibility, and the promise of new technology.

Below is the schedule, followed by a full narrative summary of each proposed session.

Schedule at a Glance

Time	Heritage Room	Red Cedar AB	Lincoln Room	Room 106
9:40 – 10:30 AM	Gordie Howe International Bridge — Collaboration Beyond Borders	Building New Resiliency into GLWA's Aging Wastewater Conveyance Infrastructure	RUC and Michigan – Case Studies from Across the Country	Guidelines on Subgrade Stabilization for Pavement Construction
10:55 – 11:45 AM	Leveraging Technology and GIS for Safer Streets in Oakland County	The Future is Filtered — Michigan's First Belt Primary Treatment System	MI-FAST: Advancing 12 Massive MDOT Projects	Multi-Modal Digital Twin Framework for Enhanced Bridge Inspection and Health Monitoring
1:15 – 2:05 PM	Modernizing Mobility: Rail and Aviation Projects Reshaping Michigan	City of Mount Clemens Connection to GLWA	Revitalizing the M-22/M-72 Grandview Parkway	MDOT Drainage Manual Updates

2:40 – 3:30 PM	Rapid Response on the U-M Helipad Sinkhole Project	Leveraging Partnerships to Solve Major Infrastructure Challenges (PFAS)	From Smart Intersections to Measurable Safety – Lessons from Detroit SMART MODES	Saving Your Project with SUE
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Session Descriptions

9:40 – 10:30 AM Breakout Sessions

1. The Gordie Howe International Bridge — Collaboration Beyond Borders: The Owner's Engineer Role

Heritage Room · 9:40–10:30 AM

Claire Heumann & Mustapha Hamood, Parsons

Parsons Corp. provides a deep dive into their role as Owner's Engineer on one of North America's most ambitious binational infrastructure projects — the Gordie Howe International Bridge connecting Windsor, Ontario and Detroit, Michigan. The session will cover comprehensive engineering and project management services including design review, construction oversight, quality assurance, and risk management. Presenters will highlight how the team navigated complex geotechnical conditions, stringent environmental requirements, and the coordination of multiple international stakeholders through innovative and collaborative approaches.

2. Building New Resiliency into GLWA's Aging Wastewater Conveyance Infrastructure

Red Cedar AB · 9:40–10:30 AM

Todd King, P.E., Chief Resiliency Officer, Great Lakes Water Authority

Fritz Klingler, President, FK Engineering Associates

The Great Lakes Water Authority operates one of the oldest and largest wastewater collection systems in the United States — infrastructure largely built in the late 19th and early 20th centuries, long before “resiliency” was a design consideration. This session examines how GLWA has shifted its capital improvement philosophy over the past decade from simple repair to building new flow control infrastructure. The goal: better system operation, reduced sewage overflows, and improved ability to handle extreme weather events without disrupting the public. The presenters argue their experience offers a transferable model for any mid-to-large system facing similar challenges.

3. RUC and Michigan — Case Studies from Across the Country

Lincoln Room · 9:40–10:30 AM

Niles Annelin, Senior Project Manager, & **Ara Swanson** CDM Smith

As fuel tax revenues decline alongside the rise of electric vehicles, Road Usage Charging (RUC) is gaining traction as a long-term transportation funding solution. CDM Smith proposes a session drawing on pilot programs in Hawaii, Washington, Oregon, and multistate coalitions to share what actually works — and what doesn't. A central argument of the session is that public communication is just as critical as technical program design. Specific topics will include privacy concerns, transparency, mileage reporting, and how to craft messaging that resonates with rural, urban, and legislative audiences alike. With Michigan preparing to launch its own RUC pilot, the session is positioned as a timely and directly actionable resource for attendees.

4. Guidelines on Subgrade Stabilization for Pavement Construction

Room 106 · 9:40–10:30 AM

Dr. Nishantha Bandara, Ph.D., P.E.

Associate Professor & Director, Lawrence Tech Transportation Institute

Lawrence Technological University

Ashok Punjabi, P.E.

Supervising Engineer

Michigan Department of Transportation

This presentation outlines a strategic framework for chemical subgrade stabilization, transforming marginal soils into high-performance pavement foundations. It begins with a rigorous soil classification phase, emphasizing Plasticity Index (PI) and sulfate content as primary drivers for stabilization material selection. The session explains the distinct mechanisms of hydrated lime stabilization for heavy clay soils and Portland cement stabilization for granular materials, based on newly developed guidance prepared for MDOT.

Attendees will walk through the full project workflow — from project selection and mix design through construction procedures such as precision spreading, rotary mixing, and critical mellowing periods — and conclude with quality control benchmarks including density targets, strength criteria, and moisture resistance requirements. Although subgrade stabilization has been used since the 1970s, its use in Michigan has been limited. This session provides engineers with practical guidance on when and how to implement it in roadway design and reconstruction projects.

10:55 – 11:45 AM Breakout Sessions

5. Leveraging Technology and GIS for Safer Streets in Oakland County

Heritage Room • 10:55–11:45 AM

R. Michael Cousins, GISP, GIS Practice Leader & **Taryn Juidici**, Senior Technical Leader, OHM Advisors

The Road Commission for Oakland County partnered with OHM Advisors on a Safe Streets and Roads for All (SS4A) initiative with a bold goal: zero traffic fatalities and serious injuries by 2050. The session showcases a GIS-driven crash analysis platform that mapped more than 47,000 crashes from 2021–2023 to identify high-risk intersections and segments across urban, suburban, and rural roads. The team integrated Crash Modification Factors, Benefit-Cost ratios, and 20-year horizon modeling to evaluate countermeasures like roundabout conversions and signal optimization. Presenters emphasize that the

methodology is replicable and designed to minimize bias — ensuring equitable safety improvements across the county's diverse road network.

6. The Future is Filtered — Lessons Learned from Michigan's First Belt Primary Treatment System

Red Cedar AB · 10:55–11:45 AM

Brandon Mieras, Principal, & **Nathan Breese**, Project Engineer, Williams & Works

The City of Greenville made history as the first municipality in Michigan to deploy belt filters for primary wastewater treatment — and Williams & Works was there for every phase. This session walks through the full project lifecycle: planning, equipment selection, permitting, design, and construction engineering, as well as the operational challenges that followed. The presenters will explain the technical nuances of different belt filter mesh opening sizes, sludge removal methods, and the unusual characteristics of primary sludge produced by this system. Given that the technology is novel to Michigan but gaining momentum nationally, the session is framed as a forward-looking look at what's coming for the state's water sector.

7. MI-FAST: The Benefits of Advancing 12 Massive MDOT Projects

Lincoln Room · 10:55–11:45 AM

Ron Davis, Associate Vice President, HNTB

Adam Wayne, Project Manager, **Trevor Block**, Davison TSC Manager, & **Steve Minton**, MDOT

The Michigan Innovative Finance Asset Scan for Transportation (MI-FAST) study identified twelve high-priority infrastructure projects that have long been recognized as critical Michigan needs. This session previews those projects — including the I-94 Modernization near downtown Detroit, the I-69/I-75 Interchange near Flint, and US-131 near downtown Grand Rapids — and builds on previous MI-FAST presentations with updated information. Attendees will learn how new revenue strategies, project acceleration opportunities, and economic impact analysis are being applied to make the case for advancing these corridor

investments. More information is available at michigan.gov/mdot/projects-studies/mi-fast.

8. Multi-Modal Digital Twin Framework for Enhanced Bridge Inspection and Health Monitoring

Room 106 • 10:55–11:45 AM

Dr. Surya Sarat Chandra Congress, Assistant Professor, & **Dr. Nizar Lajnef**, Professor, Michigan State University

As bridge infrastructure ages and traffic demands increase, traditional manual inspection methods are often insufficient for detecting subtle, early-stage structural degradation. This session presents an integrated Structural Health Monitoring (SHM) framework combining UAV-based 360-degree inspections, high-fidelity 3D Finite Element Modeling (FEM), and a distributed sensor network.

Using a bridge case study from Alaska, the presenters demonstrate how drone-captured visual and geometric data inform sophisticated finite element models. The framework applies MIDAS, a mechanics-informed unsupervised machine learning algorithm, to detect and localize potential damage using error heatmaps derived from deviations in sensor data relative to a baseline structural state. By integrating drone data, physics-based modeling, and machine learning, this digital twin approach enables high-sensitivity damage detection without requiring costly pre-labeled datasets, supporting proactive infrastructure management and extending the service life of critical transportation assets.

1:15 – 2:05 PM Breakout Sessions

9. Modernizing Mobility: Rail and Aviation Projects Reshaping Michigan

Heritage Room • 1:15–2:05 PM

Ryan Hoensheid, Project Manager – Rail, **Kelly Ferencz**, Project Manager – Aviation, & **Noah Droste**, Project Manager, WSP

WSP offers a dual-lens look at transformative transportation infrastructure in Michigan — examining both rail and aviation simultaneously. On the rail side, this session covers

MDOT's federally designated high-speed rail corridor between Kalamazoo and Dearborn, including how alternative delivery methods like Progressive Design-Build (PDB) and CM/GC have helped manage risk and accelerate the schedule. The aviation perspective comes from Wayne County Airport Authority initiatives. The session ties both threads together around a broader theme: how multimodal infrastructure investment supports Michigan's economic competitiveness and its ability to attract and retain talent.

10. City of Mount Clemens Connection to GLWA

Red Cedar AB · 1:15–2:05 PM

Carmelle Tremblay, Project Engineer, Wade Trim

Eric Hansen, Project Engineer, Fishbeck

Rather than invest in a costly upgrade or replacement of Mount Clemens' aging 8 MGD water filtration plant, the City chose a creative alternative: connect directly to a Great Lakes Water Authority transmission main. The project involves constructing a new pump station, a 2 MGD ground storage tank, and local transmission mains — all delivered through a design-build model with \$42 million in DWSRF funding. What makes this session particularly compelling is its organizational complexity: five consulting firms, one contractor, three communities, and the State of Michigan all had to be coordinated simultaneously. The session offers practical takeaways on collaborative delivery, multi-agency permitting, and stakeholder management.

11. Revitalizing the M-22/M-72 Grandview Parkway with Modern Mobility Enhancements

Lincoln Room · 1:15–2:05 PM

Lucas Porath, P.E., Cost and Scheduling Engineer, MDOT Traverse City TSC

Dakota Roberts, P.E., Senior Project Engineer, ROWE Professional Services

Additional presenters: Alec Kluck and Matthew Seitz, ROWE Professional Services

The transformation of M-22/M-72 (Grandview Parkway) in Traverse City is a story about what's possible when community vision and engineering expertise converge. The project involved redesigning a key corridor to separate users, improve connections to trails and

bayfront destinations, and enhance safety at intersections — all while drawing on multiple funding sources to close financial gaps. Technology was piloted to support long-term active transportation data collection, and infrastructure was added to protect the natural environment.

12. MDOT Drainage Manual Updates

Room 106 · 1:15–2:05 PM

Erik Carlson, Engineer Manager (Licensed 14), Michigan Department of Transportation

Following a Federal Highway Administration Program Review in 2021, MDOT undertook a comprehensive update of its Drainage Manual to bring it in line with current practices. The updated manual is expected to be released in 2026. This session provides attendees—many of whom use the Drainage Manual regularly — with a direct briefing on what has changed, why, and what to expect.

2:40 – 3:30 PM Breakout Sessions

13. Rapid Response and Collaborative Success on the U-M Helipad Sinkhole Project

Heritage Room · 2:40–3:30 PM

Mark Stapleton, Project Manager & **Ross Koella, P.E.**, Project Engineer, G2 Consulting Group

When a sinkhole appeared beneath the University of Michigan Hospital’s active helipad, there was no time for a traditional project delivery process. This session tells the story of how engineers, contractors, and hospital stakeholders worked under extreme time and operational constraints to investigate the failure, pivot away from conventional repair approaches, and implement an innovative long-term geotechnical solution — all without interrupting critical medical operations. The broader lesson: in an era of aging infrastructure and funding delays, pre-established relationships between owners, engineers, and contractors are essential to successful crisis response.

14. Leveraging Partnerships to Solve Major Infrastructure Challenges

Red Cedar AB · 2:40–3:30 PM

Erik Cronk, Program Manager & **Keith Toro**, Project Manager, C2AE, An AtkinsRealis Company

When PFAS contamination in private drinking water wells exceeded regulatory levels in northern Michigan, it took nearly a decade of sustained collaboration between Grayling Township, EGLE, the Army National Guard, the U.S. Army Corps of Engineers, C2AE, and other partners to reach a permanent solution. This session tells that story — from initial analysis through study, design, funding, and construction. The project is the first of its kind in Michigan and serves as a model for how public agencies, federal departments, and private consultants can align around a shared public health goal. With construction underway in spring 2026 and four additional areas in design, the session will be able to offer real-time project updates.

15. From Smart Intersections to Measurable Safety — Lessons from Detroit SMART MODES

Lincoln Room · 2:40–3:30 PM

Tony Geara, Deputy Chief, Detroit Office of Mobility Innovation

Dr. Steven Lavrenz, Associate Professor, Wayne State University

Detroit’s SMART MODES initiative set out to move “smart intersections” from a marketing concept to a source of credible, decision-ready safety data. The session shares lessons from deploying and independently evaluating a citywide data environment that integrates signal data, video analytics, and probe speeds. A standout feature of the session is its focus on leading safety indicators — such as near-miss metrics — used alongside traditional crash data to assess safety outcomes. The presenters bring complementary perspectives as city project manager, academic evaluator, and platform developer.

16. Saving Your Project with SUE

Room 106 · 2:40–3:30 PM

Matthew Reinhart, P.E., Director of Transportation & **Eric Arquette**, Senior Project Manager, Surveying and Mapping, LLC (SAM)

Subsurface Utility Engineering (SUE) remains widely misunderstood — even among professionals who regularly include it in project budgets. This session aims to close that knowledge gap by clearly defining what SUE is (and isn't), walking through the Quality Level designations assigned to SUE deliverables, and illustrating the real-world benefits through specific project examples. The central message is practical: properly applied SUE saves money, saves time, and keeps workers and the public safe from buried hazards. This as an educational session for designers and project managers who want to make better-informed decisions when scoping and budgeting subsurface investigation.