

What is MI-STIC?

- Michigan State Transportation Innovation Council (MI-STIC)
- A group of transportation stakeholders led by the MDOT and FHWA to bring together public and private transportation stakeholders to work together to lead innovation in their state transportation program.



Who is MI-STIC?

Stakeholder Member Organizations include:

- Government – MDOT, FHWA, Counties, Senate, House of Representatives
- Transportation Associations – ACEC, APAM, CRA, LTAP, MAA, MCA, MRPA, MITA, NACE, WATS



How Does MI-STIC Work?

- STIC was originally created by FHWA in support of the Every Day Counts (EDC) initiatives
- Stakeholders meet monthly for Business and Presentation type meetings to share best practices and innovations
- STICs from most states meet nationally once or twice per year
- The state of Michigan receives \$100,000 of federal funds from the FHWA to use for innovative projects



Learn More About MI-STIC & Innovations



MDOT Innovation Website

Link: www.Michigan.gov/MDOTInnovations

Michigan.gov



- MDOT GIS Home
- MI.gov/MDOT
- MDOT GIS Resources
- MDOT-GIS@Michigan.gov
- Sign In

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Explore Feeds Manage Privacy



Innovation is a key component in maintaining a technical edge in any industry and MDOT strives to stay on the leading edge of technologies and best practices in the transportation industry. Click on an innovation below to view it on the map. The details button will show additional information and media for the innovation. Use the search tool to find an innovation based on title, description, benefits, or location. Use the filter button at the top of the list to filter the innovations by category.

Search

- US-31 Bridge Rehabilitation Project (ATC for MOT) [Details](#)
- Innovative Mound Road Design-Build Project [Details](#)
- Autonomous Wheelchair Securement [Details](#)
- I-94 Calhoun County Design-Build Project [Details](#)
- Airport Rescue and Fire Fighting (ARFF) Mobile Trainer [Details](#)
- Work Zone Management Camera [Details](#)

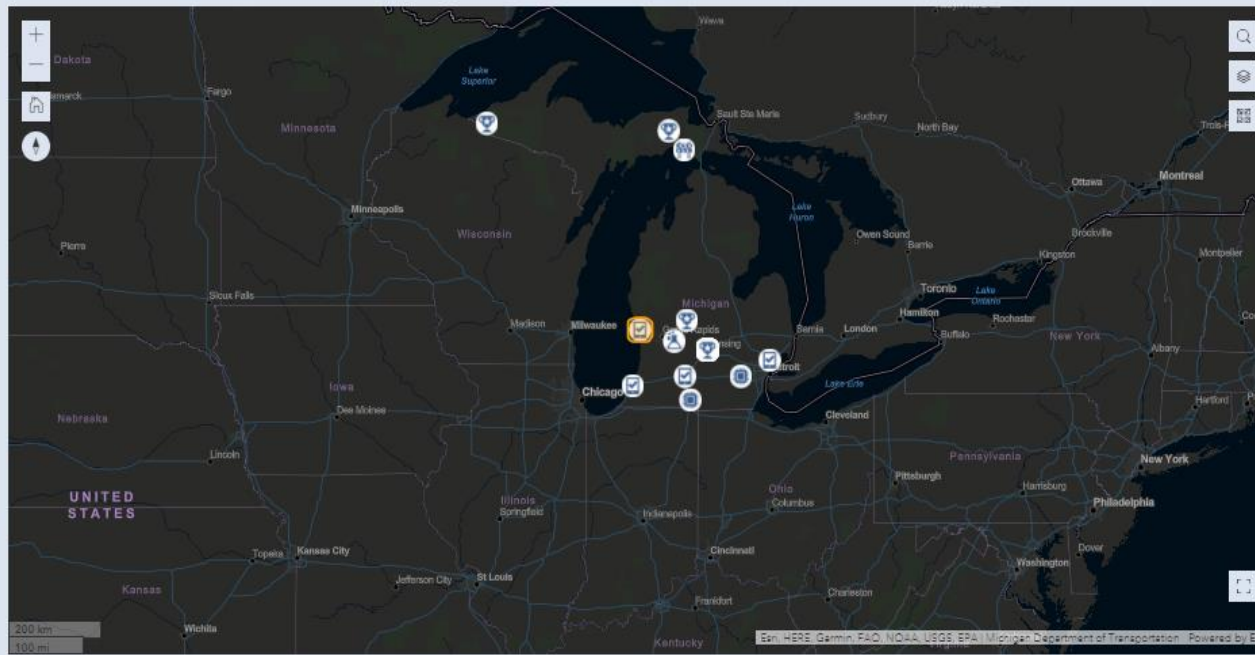
New Materials and Products Accepted/Approved

33
in 2021

9
in 2022

Interactive Legend

- MDOT Firsts
- Research
- Work Zones
- New Materials
- Innovative Contracts
- Technology



Awarded 2016:

Data-Driven Safety
Analysis (DDSA)

Implementation Plan

Super Air Meters:



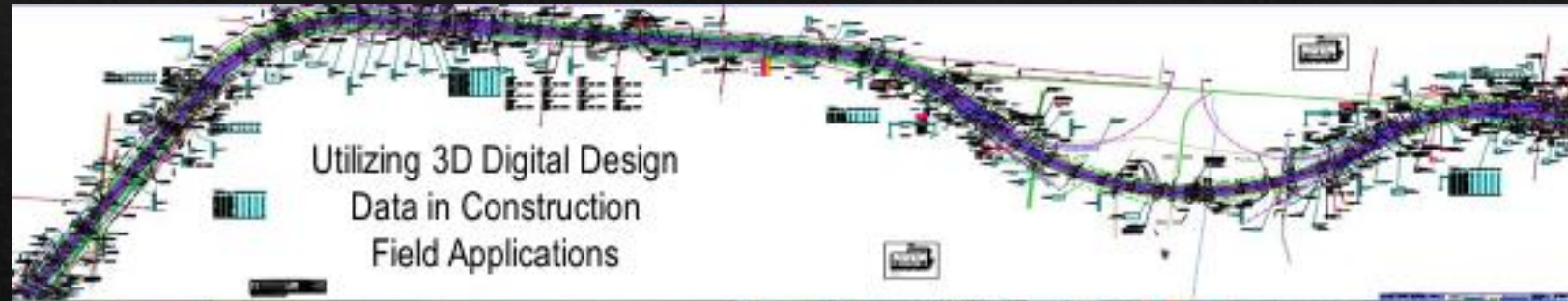
Awarded 2017:

M2D2

GUIDEBOOK

MULTI MODAL DEVELOPMENT &
DELIVERY GUIDEBOOK

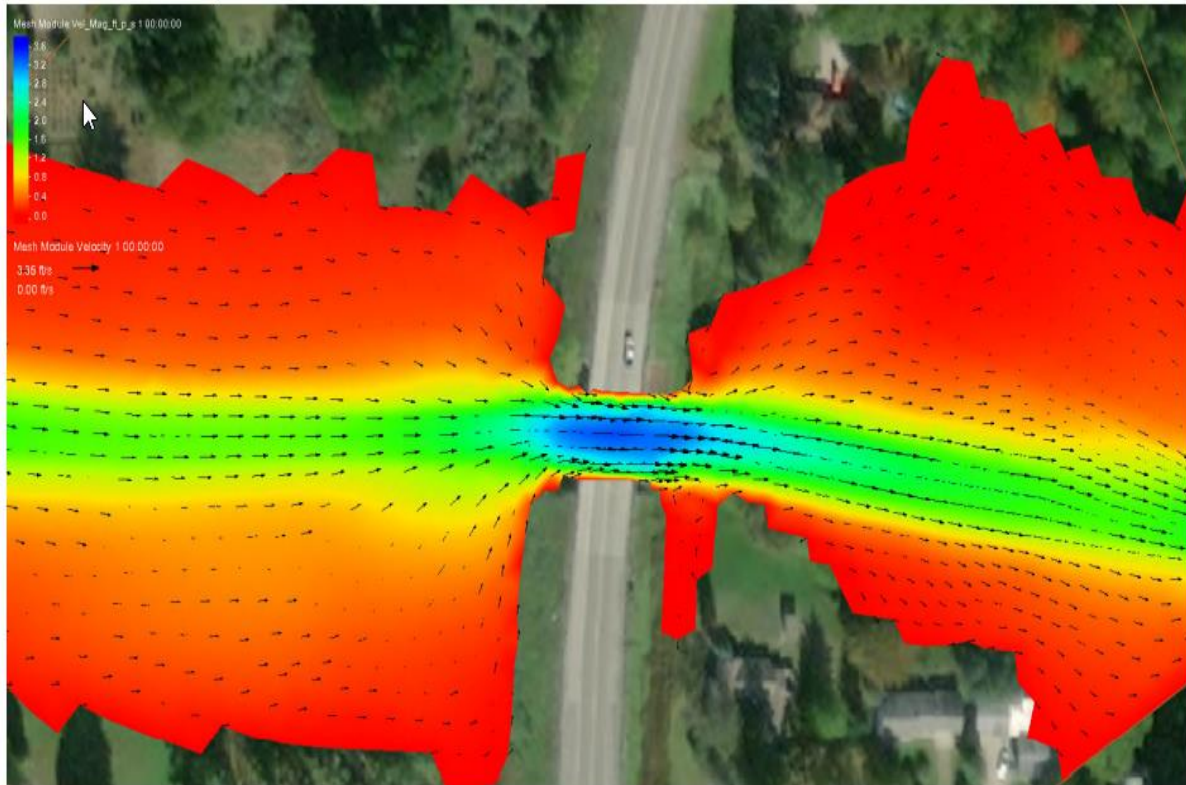
MICHIGAN DEPARTMENT OF TRANSPORTATION
2019



Awarded 2018:

MDOT 2D Hydraulic Modeling Peer Exchange:

- M-52 over Marsh Creek
 - 2D model developed as a check with scour calculations for proposed bridge replacement.



Pavement Warranties for Local Decision Makers

Training Modules, including a LIVE Q&A on October 10, 2019

Learn about the new Local Agency Pavement Warranty Program.

Four self-paced training modules will introduce officials from cities, villages, townships, and counties to Public Act 175 of 2015, which requires local agencies to adopt a pavement warranty program. They will learn what they must do to comply with the legislation, get guidance about when and whether they should opt for a warranty on a particular paving project, and learn strategies for communicating about pavement warranties with residents in their community.

Module 1: Introduction to Pavement Warranties *Available now!*

Module 2: Basic Pavement Warranties Concepts *Available now!*

Module 3: Administrative Processes *Available now!*

Module 4: Specific Faults and Remedies *Available now!*

Available at michiganltap.org/pavement-warranties

Module 5: LIVE Q&A Session

Get your questions answered during a live Q&A session with members of the Advisory Panel. E-mail your questions in advance or ask them during the session itself.

October 10, 2019 – 1:00 p.m. ET

On demand replay available at michiganltap.org/pavement-warranties

Local Agency Warranty Program

Program Partners

County Road Association of Michigan
Michigan Municipal League

Advisory Panel

Steve Puuri Lance Malburg
Ray Roberts Wayne Harrall

Training Development Team

John Velat
Peter Meingast

[VIEW BIOS](#)

 Center for
Technology & Training

 Michigan's
**Local Technical
Assistance Program**



Awarded 2019:

Geotechnical Site Characterization with Cone Penetration Testing



VIRTUAL PUBLIC INVOLVEMENT BENEFITS AND BARRIERS

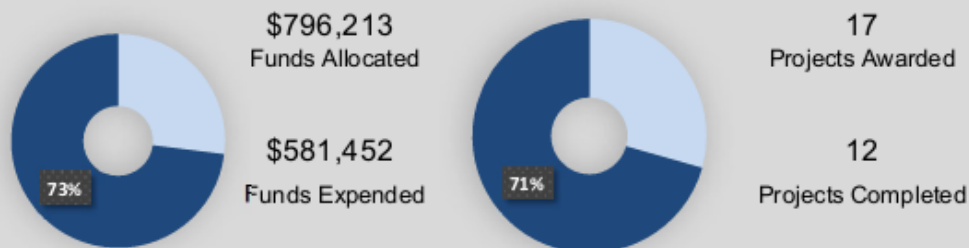
A Practical Guide to VPI Tools

Michigan Department of Transportation (MDOT) and
FHWA EDC 5-Virtual Public Involvement Best Practices

SPRING 2021

Michigan

STIC Incentive Projects



Accelerated Innovation Deployment (AID) Demonstration Projects

\$6,323,943
Funds Allocated

7
Projects Awarded

Increased Federal-share for Project Level Innovations Usage

\$9,267,721.14
Additional Federal Share

14
Projects Authorized

EDC-6 Innovations

PROGRESS DURING TWO-YEAR DEPLOYMENT

	Baseline Jan. 2021	Progress June 2021	Progress Dec 2021	Progress June 2022	Final Report Dec 2022	2-Year Goal for Dec 2022	Goal Met?	Highlights / Challenges
<i>Crowdsourcing for Advancing Operations</i>	Institutionalized	Institutionalized				Institutionalized		
<i>e-Ticketing</i>	Development	Development				Assessment	0%	
<i>Digital As-Builts</i>	Development	Development				Demonstration	0%	
<i>Next-Generation TIM</i>	Institutionalized	Institutionalized				Institutionalized		
<i>Strategic Workforce Development</i>	Demonstration	Demonstration				Assessment	0%	
<i>Targeted Overlay Pavement Solutions (TOPS)</i>	Demonstration	Demonstration				Assessment	0%	
<i>UHPC for Bridge Preservation and Repair</i>	Demonstration	Demonstration				Institutionalized	0%	
<i>Virtual Public Involvement (VPI)</i>	Assessment	Institutionalized				Institutionalized	100%	

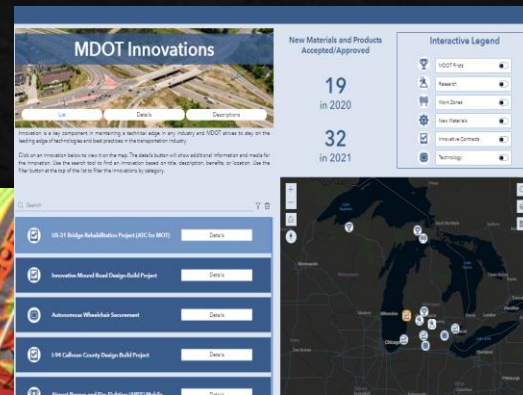
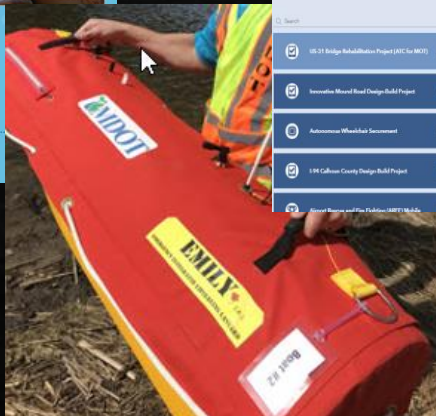
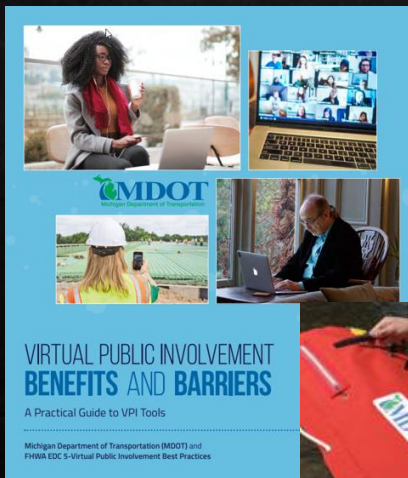
Legend:

Not Implemented	not planned for implementation of the innovation.
Development	participating in webinars and peer exchanges, collecting guidance and best practices, developing an implementation process, and building support.
Demonstration	testing and piloting the innovation
Assessment	assessing the performance of the innovation and adjusting any processes for full deployment
Institutionalized	adopted the innovation as a standard practice and uses it regularly on projects



2021 STIC Excellence Award

- Michigan STIC (Mi-STIC) awarded the National 2021 STIC Excellence Award by the FHWA and AASHTO Innovation Initiative
- The award recognized Mi-STIC for expanding its already diverse membership making significant impact toward fostering a strong culture for innovation



Michigan Highlighted in National Innovator Magazine



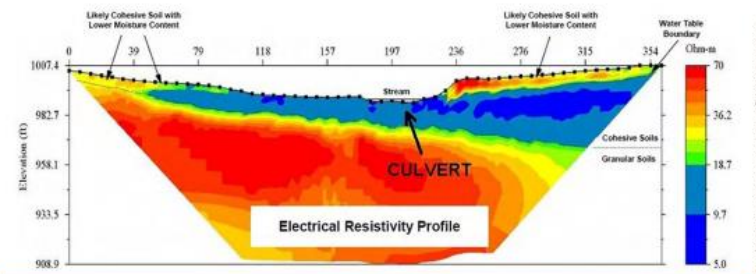
Bridge infrastructure preservation and repair overlay on the Delaware Memorial Bridge, is of ultra-high performance concrete.

Credit: Delaware River and Bay Authority

- 2 **Ultra-High Performance Concrete—Extending the Life of the Nation's Bridges**
- 4 Strategic Workforce Development in EDC-6
- 6 **Michigan Uses Virtual Approach to Capture Public Input on Projects**
- 8 Advancing Project Bundling — A New Momentum
- 10 EDC Legacy: Connections for Keeping Moving Safely and Reliably
- 12 Learn about the Highway Construction Workforce Partnership

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Share



Geophysical imaging can distinguish material and groundwater variations across a site.

Credit: Minnesota Department of Transportation

tomography, a method to image the subsurface using differences in measured electrical resistivity, on several projects. This method helped INDOT design a bridge project on U.S. 50 in an area of Lawrence County with karst, a type of landscape where dissolving bedrock has created hazards such as sinkholes, sinking streams, and caves. The data showed designers the location of problematic rock stratus and aided in the design of a stable slope.

INDOT combined electrical resistivity tomography with multichannel analysis of surface waves on an exploration for an Interstate 69 project in Marion County. During their investigation, crews discovered a large concrete boulder hidden underneath a reclaimed landfill, which will be part of the I-69 alignment. Locating this feature ahead of the project will reduce construction change orders later.

The Michigan Department of Transportation (MDOT) has completed about 30 CPT soundings at eight locations, most near traditional borings. On a culvert replacement project on M-66 near East Jordan, MDOT conducted CPTs before traditional drilling and sampling. The CPT data indicated a weak layer beneath the surface, which was targeted for additional sampling during soil borings. The additional testing and CPT data added valuable information to the decision-making process, leading MDOT to change the culvert type and construction process from part width to detour, which reduced risk to the traveling public and the project.

The Wisconsin Department of Transportation (WisDOT) conducted GPR investigations on two projects this year. These investigations included assessing if underground storage tanks were present on WisDOT right-of-way on U.S. 14 in Mazomanie and determining the location and extent of clay sewer pipe beneath an urban section of State Trunk Highway 96 in Kaukauna. In both cases, GPR provided information on subsurface conditions the project design and construction teams needed at a significant cost savings over conventional investigation methods.

MORE INFORMATION

► View an Innovation Spotlight **video** on how A-GaME technologies can improve project designs and ensure safe, cost-effective projects.

📄 Read "**Influence of Geotechnical Investigation and Subsurface Conditions on Claims, Change Orders, and Overruns**" to learn how targeted changes in subsurface investigation practices can produce significant results.

@ Contact **Ben Rivers** of the FHWA Resource Center or **Silas Nichols** of the FHWA Office of Infrastructure for information, technical assistance, and training.



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AID Demonstration Funds Awarded

FHWA's Accelerated Innovation Deployment (AID) Demonstration grants will help seven States advance innovative solutions for mobility and safety for all road users. Alabama, Arizona, Michigan, New Hampshire, Rhode Island, South Dakota, and Utah are receiving more than \$5.6 million in combined funding.

The Alabama Department of Transportation (DOT) will deploy **advanced geotechnical methods in exploration (A-GaME)**, an Every Day Counts round five (EDC-5) innovation, to help reduce construction delays and identify subsurface conditions that can mitigate risk in the repair and reopening of a section of U.S. Route 231 that closed after a mudslide in 2020.

The Arizona DOT and Mohave County will use Composite Arch Bridge System (CABS) technology to build a durable bridge crossing with reduced road closure times and construction costs. Its first use in Arizona, CABS provides rapid, simplified construction and arches that can be easily transported and placed without heavy equipment or large crews.

The Michigan DOT will use knowledge gained from previous efforts to bundle bridge projects on local agency routes. Expected outcomes with **project bundling**, a method supported during EDC-5 for awarding several projects under a single contract, include streamlined coordination and permitting and increased economies of scale.

Both New Hampshire and Rhode Island are incorporating pedestrian safety improvements promoted by the EDC-5 **Safe Transportation for Every Pedestrian (STEP)** initiative.

The New Hampshire DOT and the city of Nashua will improve pedestrian safety by installing crosswalk visibility enhancements, rectangular rapid-flashing beacons, pedestrian hybrid beacons, and road diets. These innovations are expected to reduce the number and severity of crashes involving pedestrians, help drivers yield

to pedestrians more easily, and reduce traffic stress for pedestrians at 20 locations in the city.

The Rhode Island DOT is implementing the findings of its uncontrolled midblock crossing evaluation by installing enhancements such as rectangular rapid-flashing beacons, pedestrian hybrid beacons, leading pedestrian intervals, and pedestrian crossing islands to improve safety on 25 State-owned crossings.

The South Dakota DOT will deploy and evaluate its first use of **variable speed limits** on two interstate highway corridors throughout the State and help develop criteria for adjusting speed limits in response to weather, road, visibility, and traffic conditions.

The Utah DOT will use **three-dimensional (3D) modeling software, e-Construction, drones,** and other EDC technologies to improve project delivery.

The AID Demonstration Program has awarded more than \$86.9 million for 117 grants since it was launched in 2014 to help agencies accelerate the use of innovative traffic, safety, and construction practices.

MORE INFORMATION

📄 Read FHWA's official **news release** on this latest round of AID Demonstration grants.

🔗 Visit the AID Demonstration program **web-page** for details on how to apply.

@ Contact **Fawn Thompson** of FHWA's Center for Accelerating Innovation for information on the AID Demonstration program.



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Awarded 2020 and 2021:

Still being worked on.....

- Cone Penetration Testing Training and Peer Exchange
- Unmanned Aerial Systems Equipment, Guides, etc.
- Virtual Public Involvement - Phase 2
- Local Road Research Board (LRRB)
- Local Emergency Disaster Response Playbook

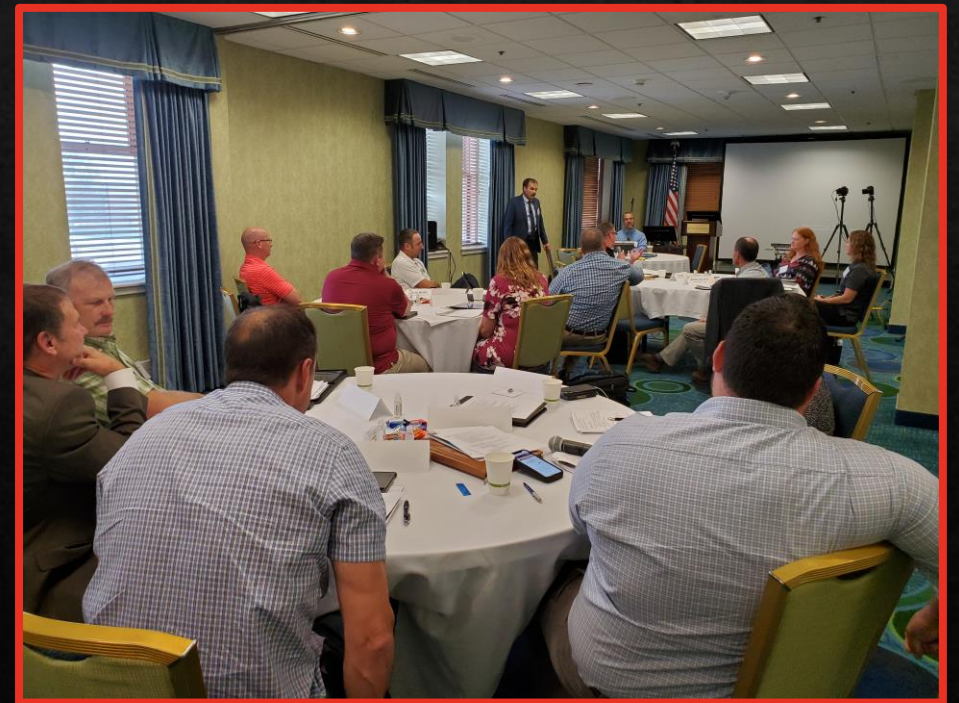


Local Agency Research Board



Question: Should MI adopt a Local Roads Research Program? CRA sought STIC grant.

- LRRP would have competitive grants to research innovative materials, procedures.
- MDOT has such program.
- Requires **MTF deduction**.
- Oct. 2021: Peer Exchange in GR = **4 states** + FHWA-MI + MDOT + **35 road agency reps**
- CRA, MML considering next steps.



Local Agency Disaster Response Playbook



Question: How can MI better address fiscal recovery from \$1MM+ natural disasters on local road/bridge system?

- Such disaster every 18 mo's.
- Michigan one of few states w/o statewide emergency coordination ofc.
- Finding crisis recovery grants difficult, abiding by multi-agency requirements *very difficult*.
- National consultant hired, interviews complete.
- **Multi-agency roundtable** set for April.
- Deliverables: “In the moment” **videos on funding sources**, data needed from Day #1, fiscal templates.



Thank you for your time!

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&

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Website Links:

MDOT Innovation - www.Michigan.gov/MDOTInnovations

MDOT/FHWA STIC - www.michigan.gov/mdot/0,4616,7-151-9623_61313-507811--,00.html

MDOT Research - www.Michigan.gov/MDOTResearch