



Ask Darrell Cass, PE...

What can research reveal for county roads?



Darrell Cass, PE, LRRP chair,
Menominee

In 2020, CRA brought together representatives from multiple states and more than 30 county road agencies for a two-day Local Road Peer Exchange. The goal? To see how other states used local road research to improve infrastructure efficiency, results and management.

From that exchange came a vision (and a CRA Legislative Priority): A Michigan-based **Local Road Research Program (LRRP)** to give county road agencies data, specs, innovations and best practices in a university partnership. In 2024, that vision became reality with a \$1 M state General Fund grant.

Michigan's LRRP was seated in June (see sidebar), has met a handful of times and received 35 project ideas from county road agencies this summer.

Michigan's LRRP chair is **Darrell Cass, PE**, engineer-manager for the **Menominee County Road Commission**. Cass brings university research experience and enthusiasm for what research can unlock for Michigan's local road system.

Crossroads sat down with Cass to discuss the LRRP, how it will work and what success could look like down the road.

CRA: Walk us through how the Local Road Research Program came to be?

Darrell Cass: As you noted, the program started as a CRA Legislative Priority and picked up from there. CRA does a great job advocating for county road agencies. Fortunately, as a result, the State Legislature set aside \$1 M in the 2024 State Budget to get LRRP up and running. Now we've got to do our job and make sure the program is a success!

CRA: Why is it important for Michigan's county road agencies to have their own research program, separate from MDOT's 90-year-old research program?

DC: It's important because MDOT's research has focused primarily on the state trunkline system, which differs in many ways from the local road networks managed by county road agencies. A dedicated Local Road Research Program ensures that studies and solutions are directly applicable to county primary roads and roads in townships – helping

road agencies address the unique challenges of their own infrastructure.

CRA: What drew you to participate in the program? You're a PE, but what is your research background?

DC: Oh boy, we're going way back now! I gained extensive research experience as an undergraduate at Michigan Tech University that ultimately led me to pursue a master's degree in civil engineering. My graduate work, funded by MDOT, focused on the life cycle assessment and sustainability of pavement materials, particularly the carbon footprint of asphalt and concrete. I published several papers through the Transportation Research Board and other research outlets.

When I saw CRA's Local Road Research Program emerge as a Legislative Priority, I was excited to get involved. With my background, I felt I could help guide research efforts that directly benefit county road agencies

and the unique challenges they face.

CRA: With 35 ideas submitted, what does that level of interest say about the need for this program?

DC: It shows that our county engineers, road maintenance foremen and superintendents have been thinking about – or implementing – innovative ideas for some time. This program gives them a platform to share those efforts. I'm really pleased with the strong response in such a short two-week window – it speaks volumes about both the need for and the excitement around this program.

CRA: What criteria will the committee use to select projects?

DC: The committee will use a structured scoring process to evaluate project proposals based on several key criteria. Projects must be implementable and broadly applicable across Michigan – not

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just in one region. We're also looking for projects that can be completed within two to three years, given the five-year timeline of this pilot. Most importantly, proposals must demonstrate clear value to county road agencies, whether through improved safety, cost savings, long-term durability or other measurable benefits.

CRA: How will selected projects move from an idea to full implementation?

DC: Once a project idea is selected, it will be refined into detailed Research Opportunity Scope. This document clearly defines the project scope, objectives, expected outcomes and areas of expertise needed. The goal is to provide research universities with a well-defined framework so they can develop proposals that directly address the local agencies' needs. This process helps ensure each project moves from a broad idea to actionable research with real-world implementation potential.

CRA: What role will universities play in carrying out the research?

DC: Universities will play a key role in carrying out the research by responding to detailed Research Opportunity Scope through a competitive proposal process. CRA will share each RFP with a select group of Michigan universities – Michigan Tech, University of Michigan, Michigan State University, Wayne State, Western Michigan and Lawrence Tech. While each university has unique research strengths, all will have the opportunity to submit proposals based on their expertise and interest in the project.

CRA: What does “success” look like – for an individual project and for the LRRP overall?

DC: For an individual project, success means producing clear, research-backed deliverables that local road agencies can actually use – whether that's a new material specification, an operational improvement, or a cost-saving practice. If county road agencies are applying the results in the field, and it's helping them build safer or more cost-effective roads, that's a win.

Local Road RESEARCH PROGRAM

Chair: Darrell Cass, PE, Menominee

Vice Chair: Garrett Myland, PE, St. Joseph

Tim Haagsma, PE, Kent

Kristine Parsons, PE, Calhoun

William Hazelton, PE, St. Clair

Under development
micountyroads.org/lrrp

Steve Puuri, PE, CRA and MML

Linnea Rader, Van Buren

Advisors: Dr. Tim Colling, PE, Michigan
Technological University

Michael Townley, PE, MI Dept. of Transportation

In some cases, success could also mean influencing broader standards, like having MDOT or FHWA adopt locally-driven innovations on state or federally funded projects.

At the program level, success is two-fold. First, it must deliver tangible value to CRA members through practical research outcomes. Just as important, though, is demonstrating that value to the public and to lawmakers. We need to show that this program is working – for local road agencies and for Michigan as a whole – so we can build support to sustain and grow the program beyond its initial five-year funding.

CRA: Given the initial funding is a one-time \$1 million grant, what's the “long game?”

DC: There's added pressure to make this first round of projects a clear success, so we can show our members and the Legislature that the program delivers meaningful benefits to local road agencies, serves the public and strengthens Michigan's local transportation network. Demonstrating that impact will be key to securing long-term support and sustaining the program.

CRA: How do you envision the LRRP impacting county road work in the future?

DC: The LRRP has the potential to benefit county road work on two important levels. First, at the day-to-day operational level, it can provide road agencies with proven practices, material recommendations and research-backed guidance they can use at their discretion – knowing it's been tested and shown to work. Whether it's a best practice or a literature review, the goal is to equip agencies with tools that improve efficiency and outcomes.

Second, on the federal aid side, the program can help pave the way for greater flexibility in how counties deliver projects under MDOT and FHWA oversight. Many counties are already innovating – using materials like crumb rubber, recycled shingles, and glass in asphalt or experimenting with new chip seal emulsions and aggregates. The LRRP can help validate those practices through research, increasing the chances that they'll be adopted more broadly and approved for use on federally funded projects.

CRA: Is there a particular type of research or topic you're especially excited to explore through this program?

DC: While I try to stay unbiased, I do have a personal interest in chip sealing – especially since Menominee County Road Commission launched its own in-house chip seal program two years ago. I've been focused on improving the quality of our chip seals by experimenting with different types of stone and emulsions, understanding how they interact and dialing in the best application rates. It's an area where innovation can really pay off for local agencies.

Looking ahead, I'm also intrigued by the potential of AI in our industry – particularly in areas like road condition assessments and PASER ratings. There's a lot of potential to streamline and enhance how we gather and analyze data.

That said, it's important that any AI tools we explore are built specifically for our industry and rely on accurate, relevant data. Used appropriately, AI could be a powerful tool for the future of county road work. **CRA**