IOWA HIGHWAY RESEARCH BOARD (IHRB)
Minutes of June 27, 2025

Regular Members Present
A. Buss
D. Harness
J. DeVries
R. Knoche
T. Roll
A. Clemons
B. Wilkinson
B. Skinner
A. Kersten

Alternate Members Present
M. Cox
O. Smadi
A. McGuire
J. Ferro

Members with No Representation
M. Nop
A. Bradley

Executive Secretary
V. Goetz

Administrative Assistant
T. Bailey

Visitors

V. Goetz announced that Chair Nop and Vice-Chair Thorius will not be attending the meeting. Motion to nominate Ron Knoche as Chair Pro Tem for this meeting.

Meeting called to order and roll call.

Motion to Approve by O. Smadi, 2nd by A. McGuire
Motion carried with 11, 0, 0

Two members joined

1. **Agenda review/modification**

- There are two items to amend on the agenda – items seven and eight. The request has been made to present both proposals earlier. Agenda items seven and eight will be moved to follow agenda item number three.

- Add a new item to the agenda regarding the AID Grant project, AID-3481 : Collection of unpaved road strength modulus values using validated intelligent compaction (VIC) technology that is mapping all rural twenty-four counties that are part of the project. Request additional funding in the amount of $500,000. Lee Bjerke with the ICEA Service Bureau will present.

Motion to Approve by A. Clemons, 2nd by 2nd by B. Wilkinson
Motion carried with 13, 0, 0

2. Minutes Approval from the April 25, 2025 meeting

Motion to Approve by T. Roll, 2nd B. by J. De Vries
Motion carried with 13, 0, 0

3. **Final Report TR-712,** *"Evaluate, Modify, and Adapt the ConcreteWorks Software for Iowa's Use, Phase II",* Kejin Wang, Iowa State University, 553,402, (20 min)

Q: Do you anticipate that a Phase Three will be submitted to address the different types of cements?
A: We haven't discussed a Phase Three study at this point.
Q: Could we start exploring options in terms of lab-only experimentation versus a combination of lab and field testing, with the goal of getting results that are close to our target, even if not perfect?
A: If we have data available, we should perform at least some level of testing. Even existing literature data can help accelerate our process.

Motion to Approve by O. Smadi, 2nd by A. McGuire
Motion carried with 13, 0, 0

4. **Matching Funds Proposal – IHRB-4186,** *"Dyed Fuel Vehicle and Equipment Use on Secondary Roads: Possible Revenue and Implementation Strategies",* Kristen Cetin, Michigan State University, $75,000. National Center for Transformative Infrastructures $75,000, (20 min)

Q: Is this research performed by Michigan State University?
A: Yes, this is solely researched by Michigan State University.
Q: So, will the case studies and the survey be distributed in Iowa as well?
A: Yes, this is Iowa's project, so IHRB is contributing specifically to the Iowa portion.
Q: Addressing Halil Ceyla, Iowa State University. Halil, didn't you already do some research on road damage caused by farm equipment and similar heavy loads?
A: Yes, we did two studies. One of them was a study conducted at the outdoor test facility just outside of Minneapolis, MN Roads. More recently, we also completed a study on super loads, and we're planning to continue that work.
Q: I was just wondering how some of that research might transfer over to this project.
A: Both of those studies Halil mentioned are published, so they would be included in any literature review or background research for this project. That's part of building on the existing knowledge base-reviewing published results and using that data as imput. That literature provides a foundation-it gives us information on how loads contribute to road damage, which can be referenced as we move forward. Also, much of this research is available through the Transportation Research International Database (TRID), which is managed by TRB. Anyone doing transportation research typically uploads their findings there.
Q: How are you planning to isolate the road damage specifically caused by vehicles using dyed fuel, versus damage from other vehicles.
A: It's a challenge, but the plan is to work closely with county engineers in the specific case study areas since they know their roads well. From our early discussions, there appear to be certain types of damage linked to specific vehicle types. We'll take a two-part approach: Use local knowledge from county engineers to identify road segments used by different vehicle types and estimate damage intensity. Combine that with broader data-such as land use and traffic patterns to estimate vehicle activity and associated damage. By comparing these two sources, we hope to find patterns that help us reasonably isolate the impact from dyed-fuel

vehicles.

Motion to Approve by A. McGuire 2nd by A. Clemons
Motion carried with 11, 0, 2

https://ncit.pvamu.edu/about/

5. **Matching Funds Proposal – IHRB-4275,** "Linking Field Observations & Laboratory Testing to Understand Roadway Performance in Drawdown Structures", Bora Cetin, Michigan State University, $150,000. National Center for Transformative Infrastructures, $150,000, (20 min)

   Q: Does this project complement the one we're developing for Phase Two of TR-792, which focuses on hydrology design and platform data with Iowa State University? How does this project intersect with that one? Will there be any discussion or collaboration between the two, or has that been considered?
   A: ISU's work focuses on hydraulics—specifically identifying where these designs are best suited across the state. This current study is looking more at the stability of those platforms, based on known materials and how they perform under conditions like inundation or flowing water. Essentially, it's evaluating how structurally sound they are once they're in place.
   Q: For your field evaluation, will you be looking for locations that are currently flooded, or just locations that might be flooded at some point in the future?
   A: In some cases, we hope the locations will be flooded and drained quickly so we can observe multiple flooding cycles.
   Q: When you come here to do the field evaluation, do you prefer the location to be flooded, not flooded, or somewhere in between?
   A: Ideally, we want the location to be flooded after the event. We typically plan to arrive 1-2 days after flooding has occurred. After flooding, it usually takes us 2-3 days to set up and pack up. So, we generally expect to be on-site by the third day. We also coordinate closely with the county engineer for the site. We'll let them know if flooding has happened and confirm that we can come within a couple of days to conduct the evaluation. This is how we've handled it in the past as well.

   Motion to Approve by B. Skinner 2nd by A. Buss
   Motion carried with 12, 0, 1

6. **Final Report TR-769,** *"Coarse Aggregate Deterioration in Granular Surfaces and Shoulders",* Jeramy Ashlock, Iowa State University, 262,470, (20 min)

   Q: Would it be feasible to get a standard from ASHTO for the new Gyratory Mix Compaction/Abrasion test for granular material?
   A: Possibly. It might be easier to get something through AASHTO compared to ASTM.
   Q: Do we have enough data to make this test a standard right now?
   A: Yes, it is definitely getting better data. The correlation between lab tests and field performance is improving. In fact, the paper shows that, while L.A. Abrasion tests might have similar results across materials, when we do the tougher Gyratory Abrasion tests, we see clear differences. Even in the computer models, the performance varies.
   Q: What's the feasibility of improving materials, especially in more remote areas like northwest Iowa?
   A: Unfortunately, you'll often have to work with the materials available. Sometimes, you're stuck with what you have, especially in more rural counties. The materials in some counties are some of the lowest-rated, and that's just something County Engineers have to work with.

   Motion to Approve by J. DeVries 2nd by O. Smadi
   Motion carried with 13, 0, 0

7. **Final Report TR-821,** *"Development of County Bridge Standards for Single Span Concrete Slab Bridges – Phase II",* Fouad Daoud, WHKS & Co., $ 491,093.31, (20 min)

Q: Did you run any estimated costs for constructability on these?
A: Yes, we did that during the Phase One study. I don't have the exact numbers with me, but from what we saw, the costs were very comparable. For example, the three-span slab standards or a single-span steel beam came back as significantly cheaper than box beams. I believe they were also cheaper than culverts.
Q: What was the length on the standards?
A: They were from 20 feet long to 50 feet in length.
Q: When will these standards be published?
A: Bridges & Structures Bureau is planning to publish the new standards on their website in July. https://iowadot.gov/consultants-contractors/bridges-structures/bridge-culvert-standards/county-bridge-standards

Motion to Approve by T. Roll 2nd by A. Clemons
Motion carried with 13, 0, 0

8. **Proposal IHRB – 3952,** *"Development of Iowa Pavement Analysis Techniques (IPAT) - Phase II",* Halil Ceylan, Iowa State University, $625,355, (20 min)

Q: Are you concerned about the data handling and processing capabilities of Excel, especially in the long term for this effort? We have encountered some limitations with state data—Excel can break cells or become sluggish as the data grows. However, the concern is more about Excel's processing abilities over time, especially when dealing with large datasets.
A: We're actually using Python, which is one of the top programming languages in engineering, science, and data processing. All the heavy lifting is done through Python. We'll use Excel mainly for visualizing the data, especially when it comes to machine learning outputs. Excel is just a presentation platform; the actual processing is handled with other languages. We've also collaborated with the County Engineer Service Bureau and their IT department to ensure smooth integration. For example, when we worked on the CyRoads analysis tool, we made sure To provide them with the coding so they could package it differently. If needed, we could even turn this into an app, like an iPad app. They've told us they prefer Excel for now, but we're flexible if we need to make changes.
Q: This is more of a question for Lee Bjerke. Where does this fit within the bigger picture? Do you remember when we met as a group? Which part of the big ideas from that meeting does this cover?
A: Yes, this is part of Part 2 of the initiative. In Part 1, we focused on collecting data from all the counties. The goal now is to integrate that data into the system, allowing the system to process and manage it. While the system doesn't handle everything we want it to yet, the aim is to eventually expand its capabilities and improve the output.

Motion to Approve by A. Clemons 2nd by A. Kersten
Motion carried with 12, 0, 1

9. AID-3481: Collection of unpaved road strength modulus values using validated intelligent compaction (VIC) technology, $500,000 SRRF - FY2025

Motion to Approve by B. Skinner 2nd by B. Wilkinson
Motion carried with 13, 0, 0

10. **New Business**

- **Spring Cycle for Ideas**: The deadline to submit new ideas at ideas.iowadot.gov is July 1. If anyone has an idea to submit, do so before that date. The next deadline is November 1.
- **Possible RFP**: There may be an RFP that requires board approval via email. Ideally, it will be posted in July.
- **New Proposal Guidelines**: New guidelines will include requirements like accessibility and 508 compliance, guidance on data management plans, etc. These will be rolled out soon.

- **IHRB 75-Year Book**: The 75th anniversary book has been sent to print and will be available for the July meeting, which will also commemorate the 75 years since IHRB's first official meeting (created in 1949, with the first meeting in May).

11. **Adjourn**

Motion to Approve by O. Smadi 2nd by A. Clemons
Motion carried with 13, 0, 0

The next regular meeting of the Iowa Highway Research Board is scheduled for July 25, 2025 in the East/West Materials Conference Room at the Iowa DOT Ames Complex.

For a list of current members or for more information about the Iowa Highway Research Board visit our website. To submit Project Ideas visit https://ideas.iowadot.gov/

TB/VG