

IOWA HIGHWAY RESEARCH BOARD (IHRB)

Minutes of June 2, 2023

Regular Members Present

J. Hauber
D. Harness
R. Koester
R. Knoche
J. Thorius
T. Roll
A. Clemons
W. Rabenberg
M. Rydl
B. Skinner
D. Snead

Alternate Members Present

O. Smadi

Members with No Representation

D. Skogerboe
C. Burke
A. Bradley

Executive Secretary

V. Goetz

Administrative Assistant

T. Bailey

Visitors

Khyle Clute	Iowa County Engineers Association
Jeremy Ashlock	Iowa State University
Justin Dahlberg	Iowa State University
Sunghwan Kim	Iowa State University
Zhenyu Lin	Iowa State University
Behrouz Shafei	Iowa State University
John Puls	Ingios Geotechnics, Inc.

Agenda review/modification

Motion to Approve by J. Thorius 2nd by D. Snead
Motion carried with 12, 0, 0

2. Minutes Approval from the April 28, 2023 meeting

Motion to Approve by W. Rabenberg 2nd by R. Knoche
Motion carried with 12, 0, 0

3. Membership Update

Sarah Okerlund and Zach Gunsolley have stepped down from the board.

Michael Nop, Bridges and Structures Bureau is the new alternate for Dustin Skogerboe.

Jeff DeVries, Construction and Materials Bureau is the new alternate for Clayton Burke.

<https://iowadot.gov/research/members.pdf>

4. Final Report TR-743, “*Field Demonstration of an Innovative Box Beam Connection*”, Brent Phares, Iowa State University, \$103,921 (15 min).

<https://publications.iowa.gov/id/eprint/44704>

Motion to Approve by O. Smadi 2nd by J. Hauber

Motion carried with 12, 0, 0

Q. Is there an increase cost?

A. There was no significant increase in cost for this joint.

Q. Is there a plan to monitor this at 10, 20 years or the life expectancy over all the bridge?

A. This is not in the current scope for this project, we only monitored this for the first 14 days.

Q. How does it compare with the labor part of doing this joint compared to the UHPC joint and the current box beam?

A. We did do a comparison and it is a lower cost than with UHPC.

5. Final Report TR-749, “*Impact of Curling and Warping on Concrete Pavement: Phase II*”, Halil Cylan, Iowa State University, \$370,000 (15 min).

<https://publications.iowa.gov/id/eprint/44705>

Motion to Approve by D. Snead 2nd by R. Knoche

Motion carried with 12, 0, 0

Q. The City sections, were they curb and gutter sections?

A. We had some, but most were not curb and gutter sections because of the complexities with the geometry.

Q. Did you analyze your subbases and sub grades to see what you had underneath and modified whether plastic, fabric in consideration.

A. With the limited funding we did not do an extensive investigation, that is one of the reasons I would like future studies to monitor.

Q. How many examples of QMC mixes?

A. We have 36 sites, which is not bad but when you categorize them it's not enough. We need around a 100 sites to draw meaningful conclusions.

Q. You talked about the differences between State and County Highways, is it a thick or strength issue?

A. A lot of different issues are involved, the quality of construction and the thickness.

Q. Counties cannot afford paved shoulders, do you have any other ideas for this?

A. We would like to continue this study looking into new mixes, things have changed like nighttime Construction. With gradual change it would help you significantly.

Q. Do you have thoughts of extending this study on PC overlays?

A. Yes, excellent point, we definitely need a study on this.

6. Interim Report and Proposal TR-817, “[Central Iowa Expo Pavement Project: Performance Assessment Phase IV](#)”, Jeremy Ashlock, Iowa State University, \$470,352, (25 min).

[Interim Report Task 1](#)

Motion to Approve by T. Roll 2nd by A. Clemons

Motion carried with 12, 0, 0

Q. Would this data help feed into the Pavement structural analysis tool that we just finished?

A. No

Additional Task Funding Approval:

Motion to Approve by J. Thorius 2nd by B.Skinner
Motion carried with 12, 0, 0

Member Left

7. Additional Funding Request TR-783, "Use Of Organosilanes To Mitigate The Impact Of Freeze-Thaw Damage To The Granular Roadways In Iowa," Bora Cetin, Michigan State University, \$62,557 (15 min)

Analysis of sensor data collected during the previous winter and spring thaw indicated promising performance of the treated sections. The visual inspection during field visit revealed that the treated cells performed better than the control cell in terms of rutting and stiffness. Although the research team gathered extensive field data and conducted thorough analysis of temperature, water content, matric suction, and heave fluctuation on the test sections, it is important to note that the last winter was relatively warm (based on the Air Freezing Index (AFI) value and frost penetration depth). In order to ascertain the long-term performance of the test cells more comprehensively, it is important to extend the monitoring period and evaluate the test sections for at least one additional freezing-thawing season. This extended monitoring duration will yield valuable insights into the performance and effectiveness of the test cells, facilitating a comprehensive assessment of their water intake and overall behavior under more severe freezing conditions.

Motion to Approve by W. Rabenberg 2nd by J. Thorius
Motion carried with 11, 0, 0

Q. Was the precipitation data looked at, especially for the Fall?
A. Yes, and this year we will pay extra attention to the precipitation data.

8. RFP IHRB-3413, "Best Practices for Joint Sawing in Iowa"

Motion to Approve by J. Thorius 2nd by R. Knoche
Motion carried with 11, 0, 0

9. RFP IHRB-3625, Qualitative Relationship Between Increased Legal Loads and Reduced Bridge Service Life.

Motion to Approve by M. Rydl 2nd by W. Rabenberg
Motion carried with 11, 0, 0

10. RFP IHRB-3480, Use of Roller Compacted Concrete for Paved Shoulders

Motion to Approve by D. Snead 2nd by J. Thorius
Motion carried with 11, 0, 0

11. STIC Project Ranking

a. AASHTOWare BrR Support and Training (#3928)

b. Concrete Phoenix System to Determine w/c Ratio (#3925)

Top Two Projects Approved.

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

d. Field Inspection of Rebar with Augmented Reality (#3899)

d. GHG Evaluation of Transportation Systems Management and Operations (TSMO) Programs (#3927)

12. New Business

We would like to have more engagement with our ideas site. Please visit ideas open for comments. Filter by State: Open Feedback

<https://ideas.iowadot.gov/>

13. Adjourn

Motion to Approve by J. Hauber 2nd by J. Thorius

Motion carried with 11, 0, 0

The next regular meeting of the Iowa Highway Research Board is scheduled for June 30, 2023 in the East/West Materials Conference Room at the Iowa DOT.

TB/VG