IOWA HIGHWAY RESEARCH BOARD (IHRB)

Minutes of September 30, 2022

Regular Members Present

J. Hauber
D. Skogerboe
J. DeVries
C. Burke
R. Koester
R. Knoche
A. Bradley
D. Sanders
T. Roll
J. Fantz
W. Rabenberg
A. McGuire
D. Snead

Alternate Members Present

J. Thorius

Members with No Representation

M. Rydl

Executive Secretary

V. Goetz

Administrative Assistant

T. Bailey

Visitors

Justin Dahlberg	Iowa State University
Keith Knapp	Iowa State University
Zhengyu Liu	Iowa State University
Dan King	CP Tech Center Iowa State University
Josh Opheim	WHKS & Co
Jeramy Ashlock	Iowa State University
Jacob Ferro	Mills County Engineer
Sarah Okerlund	Iowa Department of Transportation
John Shaw	Iowa State University
Sri Sritharan	Iowa State University
Behrouz Shafei	Iowa State University

AGENDA

1. Agenda review/modification

Item 10 a. the amount was not correct. Proposal Amount is $243,755. Additional tasks 4 and 6 proposed $56,233 (Total $299,988). Additional instrumentation and monitoring proposed. Task 3 $50,000 (Total $349,988)

Motion to Approve by J. Thorius 2nd by R. Knoche

Motion carried with 14, 0, 0

2. Minutes Approval from the July 29, 2022 meeting
Motion to Approve by J. DeVries 2nd by R. Koester
Motion carried with 14, 0, 0

3. TR-766, Final Report, "Evaluation of Galvanized and Painted Galvanized Steel Piling", Katelyn Freeseman, Iowa State University, $113,218, (15 min).

Motion to Approve by R. Koester 2nd by J. Fantz
Motion carried with 14, 0, 0

Q. Is Buffalo Creek bridge on pavement or gravel road?
A. Buffalo Creek bridge is paved.
Q.

4. TR-779, Final Report, "Evaluation of the Performance of A709 Grade 65 QST Bridge", Justin Dahlberg, Iowa State University, $131,140, (15 min).
Motion to Approve by W. Rabenberg 2nd by D. Snead
Motion carried with 14, 0, 0

Q. How many peak test samples did you do? All plain metal no defects, weld details?
A. We had eight samples. Correct, we took a portion of the W30 x 70 173 girder, took it right out of the web at the very end where we knew we were not seeing any type of yielding in our bending test.
Q. Did you do Sharp BB testing?
A. We didn't complete Sharp BB testing ourselves but there is a lot of literature on Sharp BBs for this grade.
Q. Are there multiple companies making this now?
A. Nucor is the only one that we're aware that makes this grade.

5. TR-812, Final Report, "Phase 1: Development of County Bridge Standards for Single Span Concrete Slab Bridges, Fouad Daoud, Whks & Co, $36,545.91, (15 min).
Motion to Approve by J. Thorius 2nd by T. Roll
Motion carried with 14, 0, 0

Move to phase Two.
Motion to Approve by J. Thorius 2nd by J. Fantz
Motion carried with 14, 0, 0

6. **Proposal HR-296**, "Iowa Local Technical Assistance Program 2020-2022 Summary Report and 2023-2025 Continuation Funding Proposal", Keith Knapp, Iowa State University, $190,000 per FY, (15 min).

The primary objective of Iowa LTAP is to provide quality training events and technical transportation-related information that are useful to local transportation agencies. These activities need to be completed, within current LTAP funding, in a manner that is effective and efficient. Desirably, these activities are also provided when they are most needed by local transportation agencies and in a format that is useful and useable. New knowledge, tools, and innovations developed through IHRB research and a variety of other entities (e.g., the Institute for Transportation (InTrans)), have also always been incorporated into existing LTAP activities. This activity will continue to be a focus of some of the efforts proposed in this document. The tasks included in this proposal were developed to support the primary objective of LTAP and the previously noted mission. In addition, the major initiatives that are suggested in this document are expected to improve existing LTAP programs and are in response to the results of our recent strategic planning activities.

Motion to Approve by C. Burke 2nd W. Rabenberg
Motion carried with 14, 0, 0

Q. How much interest is in the Road Scholar program?
A. There is only about 300 in it now, we use to enroll you automatically when we were tracking 10 thousand people, therefore I think it should be re-done. We had a big reduction when we required email and username. When ISU changed their website, we lost more people. There is not a lot of interest right now, but we hope to increase this.

7. **Proposal IHRB-3067**, "Field Performance of Fiber-Reinforced Concrete Overlays", Peter Taylor, $191,898, (15 min).

Fiber-reinforced concrete (FRC) has become more widely used in thin concrete overlays in recent years. It is well known that synthetic macro-fibers increase the fracture toughness and residual strength of concrete, which mitigates cracking and improves the fatigue life of concrete overlays. Some of the other benefits of fiber-reinforcement could further benefit the performance and service life of concrete overlays by improving joint behavior, load transfer, and pavement smoothness. However, the performance benefits of these mechanisms are not well-quantified and are not considered in current concrete overlay design procedures. This proposed study will take comprehensive performance measurements at a number of FRC overlay test sections that have been built in Iowa in recent years. The analysis will provide more insight into the full benefits of fiber-reinforcement and how they impact design choices and overlay service life. With a more complete understanding of the performance benefits of using fibers in concrete overlays, agencies would be able to optimize their FRC overlay designs, better predict long-term performance, and use resources more efficiently for maintaining Iowa's roadway network.

Motion to Approve by D. Snead 2nd D. Skogerboe
Motion carried with 14, 0, 0

Q. How much fibers are you using?
A. Four pounds per cubic yard.
Q. Did you see any evidence of some of the fibers being pulled out by the tining machine and was that captured with the roll-on lasers.
A. Yes, tining does pull up some of these synthetic fibers at the surface.

8. **Proposal IHRB-3206**, Central Iowa Expo Pavement Project: Performance Assessment, Jeramy Ashlock, Iowa State University, $45,821, (15 min).

The proposed project aligns with the Iowa DOT focus areas of sustainability and technology. Pavement systems consume significant portions of state and county budgets, and significant amounts of natural resources. By assessing the long-term performance of the several different pavement foundation test sections, the DOT will better understand the life-cycle costs and relative advantages and disadvantages of the different technologies. Overall, the long-term benefits of the proposed project will be to improve the quality, longevity, and state of good repair of Iowa roadways, which constitute a vital component of Iowa's infrastructure,

Motion to Approve by J. Thorius 2nd by R. Koester
Motion carried with 14, 0, 0

Q. The heat map was that created with the roller?
A. I believe this was the roller compacter.
Q. Are they going to use the roller?
A. This phase is going to look at and determine the appropriate scope.
Q. Are the sensors that are already there being used?
A. The sensors that are there are wired into the system, they need hooked up to see if they are working.

9. **Proposal IHRB-3455**, "Development of Guidance for Roadway Cross Section Re-Configuration Decisions", Keith Knapp, Iowa State University, $61,375.

Each year a city public works focus group is convened the day before the spring conference of the Iowa Chapter of the American Public Works Association (APWA). Approximately five years ago an idea was proposed at this focus group that responded to an identified need for more useful guidance related to the overall and elemental conversion of four-lane undivided roadway to three lanes (i.e., one lane in each direction and a two-way left-turn lane (TWLTL)). A literature review by the Iowa Department of Transportation (DOT) showed that a significant amount of material has been created on this subject. In fact, there has been so much documentation that it can be a challenge to practitioners. It was concluded by the project development team there was a need to combine this information in a more useful manner. The tasks in this proposal were designed to respond to this continuing need.

Motion to Approve by J. Fantz 2nd by R. Knoche
Motion carried with 14, 0, 0

10. **Proposal IHRB-3624:**
a. Proposal, IHRB-3624 - Performance Monitoring of Two-Course Deck Utilizing Ultra High-Performance Concrete, Mohamed Elbatanouny, WJE, $243,755. Additional tasks 4 and 6 proposed $56,233 (Total $299,988). Additional instrumentation and monitoring proposed. Task 3 $50,000 (Total $349,988)

b. Proposal, IHRB-3624, Performance Monitoring of Two-Course Bridge Deck Utilizing Ultra High-Performance Concrete, Sri Sritharan, Iowa State University, $277,368.

c. Proposal, IHRB-3624, Performance Monitoring of Two-Course Bridge Deck Utilizing Ultra High-Performance Concrete, Justin Dahlberg, Iowa State University, $135,445.
Tabled

V. Goetzt to invite the team from WJE and ISU-Dahlberg to collaborate on a joint proposal to be reviewed at future meeting. Motion to table selection and award of project by J. Hauber, 2nd by J. Thorius.
Motion carried with 14, 0, 0

11. Spring Ideas Ranking Results
1. Design Details and Practical Considerations for Ultra-High Performance Concrete Link Slabs (#3806)
2. Development of quality standards for inclusion of high recycled asphalt pavement content in asphalt mixtures-phase V (#3768)
3. Investigating the Interactions among Deicing Chemicals, Concrete Pore Solutions, and Corrosion of Reinforcing Steel in Concrete (#3788)
4. Ongoing evaluation of full scale research test sites (#3799)
5. Best Practices for One-way to Two-Way Conversions (e.g., large vehicle accommodation, economic impacts, etc.) (#3797)
6. Public Opinion Survey of Distance-Based Fees for Electric Vehicles (#3807)

Motion to move all 6 projects to Development R. Knoche, 2nd by J. Thorius.
Motion carried with 14, 0, 0

12. 2022 STIC Ideas Update: Both ideas submitted to FHWA have been awarded funding. Iowa DOT Research will proceed with project development and authorizing funds in FMIS.

a. Bridge Digital Delivery: Peer Exchange with AGC and ACEC (#3819) – this will be scheduled in November.

b. ETALYC'S Hyperflow Pilot for Signal Performance Assessment (#3818) – work with Iowa DOT Local Systems and the City of Dubuque to award funding.

13. New Business

14. Adjourn

The next regular meeting of the Iowa Highway Research Board is scheduled for December 13, in Boardroom #3, Iowa Events Center, Des Moines, IA.

****The October 2022 IHRB Meeting was cancelled****
TB/VG