**IOWA HIGHWAY RESEARCH BOARD (IHRB)**

*Minutes of December 13, 2022*

**Regular Members Present**

J. Hauber
C. Burke
R. Koester
T. Roll
J. Fantz
W. Rabenberg
A. McGuire
D. Sanders

Alternate Members Present

J. Joiner
J. Thorius
T. Wolken
A. Kersten

**Members with No Representation**

D. Skogerboe
J. DeVries
A. Bradley

**Executive Secretary**

V. Goetz

**Administrative Assistant**

T. Bailey

**AGENDA**

**1. Agenda review/modification**

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

**2. Minutes Approval from the September 30, 2022 meeting**

Motion to Approve by D. Sanders 2nd by W. Rabenberg
Motion carried with 12, 0, 0

**3. 2023 IHRB Membership and Meeting Dates**

Membership changes effective December 31.

Jeff DeVries, Construction and Materials Bureau, his term is ending. Daniel Harness, Design Bureau will represent Iowa DOT. Allen Karimpour, District 5, with be the new alternate

Joel Fantz, Fayete County Engineer, his term is ending. Adam Clemons, Wright County Engineer will represent County District 2. Brandon Billings, Cerro Gordo County Engineer, will be the new alternate.

Andrew McGuire, Keokuk County Engineer, his term is ending. Brad Skinner, Appanoose County Engineer will represent County District 5. Dillon Davenport, Decatur County Engineer, will be the alternate.

Waid Weiss, Greene County Enginer, is stepping off his role as TRB Liaison, and will remain as an alternate. Jacob Thorius, Washington County Engineer, will be the new permanent county member on the board.

The meeting Dates have been updated for the next four years and will be posted to the website. https://iowadot.gov/research/meetingdates.pdf

4. ***Final Report TR-782, "Guide to Remediate Bridge Deck Cracking"***, Mohamed Elbatanouny, Wiss, Janney, Elster Associates, Inc., $175,000, (15 min)

Q. Is manual the only way to collect data?
A. It was a automated collection by using cameras on the back of a truck.
Q. A lot of information is proprietary, do you have information about the products?
A. Sealers work when the cracks are surface cracks. When there is chloride, there isn't enough research on how well they work once chlorides are present.
Q. When you are looking at life cycle cost, did you use any recurring traffic impacts?
A. This is why we look at this over time, 5% damage is critical. Once you get to severe cracking, you have to do more aggressive treatment.

DOT proposed automated with the Rabbit 2.0. Drone survey can also be used to do crack density evaluation.

Motion to Approve by T. Roll 2nd by J. Hauber
Motion carried with 12, 0, 0

5. ***Final Report TR-811, "Update to Standards for Single Span Prefabricated Bridges"***, Phil Rossbach, HDR Engineering Inc., $150,449. (15 min)

Motion to Approve by J. Thorius 2nd by R. Koester
Motion carried with 12, 0, 0

6. **TR-819, Proposal IHRB-3794, "New and Updated Statewide Historic Bridge Survey",** Bear Creek Archeology, Inc., $1,161,941.67

Bear Creek Archeology, Inc. (BCA) is submitting the following proposal to conduct a comprehensive update to the state's historic bridge surveys. In collaboration with the Iowa Department of Transportation (Iowa DOT), the Iowa Highway Research Board, and the State Historic Preservation Office, the research for this effort will be led by Libby Wielenga with the assistance of a second SOI-qualified historian. A three-task approach will be utilized to update, inventory, and evaluate or reevaluate approximately 14,000 highway bridges in Iowa constructed between 1876 and 1985.

- Task 1 – Update, Inventory, and Reevaluate Highway Bridges in Iowa from 1868–1945
- Task 2 – Update, Inventory, and Reevaluate Highway Bridges in Iowa from 1942–1970
- Task 3 – Inventory, Assess, and Evaluate Highway Bridges in Iowa from 1971–1985, including development of a multiple property document.

A preliminary list of the bridges that are to be the subject of this project have been provided by the Iowa DOT. Two of these tasks are updates to the inventories and multiple property documentation (MPD) of bridges built between 1876–1941 and 1942–1970 and the third task is an inventory of bridges built between 1971–1985 and the completion of a MPD for those bridges. As part of these efforts, the general selection and registration requirements of the existing 1876–1945 MPD will be

reevaluated, including a refinement of the definition of a rare bridge. Not all of the bridges in the lists provided by the Iowa DOT will be subject to intensive inventory. Bridge selection for intensive inventory will be based on preliminary data review and it is anticipated that approximately 50 bridges built between 1971–1985 will be intensively inventoried. All metal truss bridges built prior to 1941 (approximately 400 bridges) will be reinventoried and the 209 bridges from the 1876–1945 MPD that are listed on the National Register of Historic Places (NRHP) will be reviewed and their documentation will be updated.

Motion to Approve by J. Fantz 2nd by W. Rabenberg
Motion carried with 12, 0, 0

7. **TR-820, Proposal IHRB-3624, "Performance Monitoring of Two-Course Bridge Deck Utilizing Ultra-High-Performance Concrete",** Mohamed Elbatanouny, WJE, $341,137 - Joint with Iowa State University

Bridge decks are often the first bridge component requiring major repair or complete replacement. Since the early 2000's, a new class of cement-based materials, known as Ultra-High-Performance Concrete (UHPC), has become available. UHPC is nearly impenetrable and has many other high-quality attributes. A bridge will soon be constructed that has a deck comprised of traditional concrete plus a UHPC overlay course. The objective of this study is to monitor and evaluate the construction of the two-course deck as well as the performance of the deck for 2 years post-construction. The study will consist of a literature review of two-course decks and UHPC overlay construction to determine best practices; field monitoring during construction to document construction quality; a laboratory investigation of the two-course deck system to assess its durability; load tests and field monitoring for 2 years; and service life and life-cycle cost analyses to compare the performance of the two-course deck system with that of the Iowa DOT's more typical deck systems. The final deliverables will communicate the lessons learned from the project and provide guidance for future design, construction, and QA/QC practices regarding bridge deck construction using a UHPC top course.

Motion to Approve by J. Thorius 2nd by T. Roll
Motion carried with 12, 0, 0

8. New Business
As the State Transportation Innovation Council, we are a part of rolling out the Every Day Counts (EDC) initiatives that FHWA leads. Round seven has just been announced, there are seven innovations that FHWA is highlighting for pursuing implementation.

For more information visit: https://www.fhwa.dot.gov/innovation/everydaycounts/edc_7/

9. Adjourn

The next regular meeting of the Iowa Highway Research Board is scheduled for February 24, 2023 in the East/West Materials Conference Room at the Iowa DOT.
TB/VG