IOWA HIGHWAY RESEARCH BOARD (IHRB)

Minutes of April 24, 2020

Regular Board Members Present

D. Claman
J. DeVries
T. Nicholson
R. Koester
R. Knoche
A. Bradley
W. Weiss
P. Geilenfeldt
B. Wilkinson
A. McGuire
T. Kinney

Members with No Representation

Alternate Board Members Present
D. Rolando
M. Rydl
C. Brakke
O. Smadi

Executive Secretary – V. Goetz

The meeting was held Online via Microsoft Teams on April 24, 2020 at 9:00 a.m. by Chair Ron Knoche with an initial number of 14 voting members/alternates.

1. **Agenda review/modification**

2. **Minutes Approval from the February 28, 2020 meeting**

   Motion to Approve by R. Koester; 2nd J. DeVries
   Motion carried with 14 Aye, 0 Nay, 0 Abstaining

   Member joined meeting

3. **Final Report: TR-775, "Late Life Low Cost Deck Overlays", Mohamed Elbatanouny, Wiss, Janney, Elstner, $50,000, (15 Min).**

   BACKGROUND
   When a bridge deck is considered for replacement, it is not uncommon that the deck needs significant repairs to maintain the riding surface until funding is available for the replacement and a construction contract can be executed. Traditionally, Iowa DOT has used low-slump portland cement concrete overlays on bridge decks, which can provide a significant

service life extension. Low-slump overlays, however, have significant costs and traffic impacts during construction. For bridges with a limited remaining service life, other deck overlay options that have lower costs and traffic impacts while maintaining the riding surface may be desirable. Cost and traffic impact reductions can be obtained by changing two components of an overlay system: materials and/or construction. Materials that require shorter curing times than conventional portland cement concrete such as polymer concrete, rapid set concrete, or asphaltic concrete can reduce traffic impacts. A reduced construction procedure that lowers or removes certain construction requirements can reduce both costs and traffic impacts. In this study, different combinations of overlay materials and construction procedures were evaluated in the context of late-life applications and compared to aid in the decision-making process for placement of late-life overlays.

OBJECTIVES

The primary objective of this study was to identify late-life bridge deck overlay systems that will provide a sufficient service life extension but be more cost-effective and require less closure time than conventional overlays currently used by the Iowa DOT. The most promising late-life deck overlay systems were identified by comparing benefit-cost ratios based on recent cost database and service life information.

RECOMENDATIONS

1. Based on the experiences of the Michigan and Minnesota DOTs, a reduced construction procedure that limits or fully excludes Class A repairs may be implemented exclusively for latelife overlay installations to reduce costs and construction time. A field study is recommended to confirm the feasible service life of overlays constructed using this new procedure.
2. We recommend that a cost-benefit analysis similar to that presented in this study but with more refinement be performed for several bridges with varying deck conditions and service life requirements to confirm the costs and economic benefits predicted in this study.
3. HMA overlays with waterproofing membranes are less expensive than PCC overlays, and can be installed quickly. Although these overlays are typically not used in Iowa due to concerns over long-term performance, they may be considered for late life decks with a short or medium remaining service life.
4. Reinforced asphalt overlays (other than HMA overlays with waterproofing membranes) are expected to provide longer service life than HMA overlays, and may also be investigated as potential late-life overlays in a trial field study.

Motion to Approve by T. Kinney; 2nd R. Koester
Motion carried with 15 Aye, 0 Nay, 0 Abstaining

4. **Final Report: TR-728, *"Role of Coarse Aggregate Porosity on Chloride Intrusion in HPC Bridge Decks,"*** Kejin Wang, Iowa State University, $159,942 (15 Min)

BACKGROUND

Permeability is a key parameter controlling concrete durability. In reinforced concrete structures such as bridge decks, the ingress of chloride ions from deicing chemicals can corrode the reinforcing steel, leading to concrete expansion, cracking, and disruption.

High-performance concrete (HPC) has been used for years in Iowa to reduce the permeability of bridge decks. Because HPC paste permeability has been substantially reduced over the years, the permeability of the concrete's coarse aggregate has become a critical component of the bulk concrete permeability. Meanwhile, many of Iowa's high-quality carbonate aggregates have a relatively high absorption (greater than 3%).

In recent years, the Iowa Department of Transportation (DOT) has found that electrical test methods such as AASHTO T 277 or AASHTO T 538 indicate that the chloride permeability values of some HPC applications are not as low as expected.

Additionally, HPC for which rapid electrical methods indicate high permeability has been associated with highly absorptive coarse aggregate. It is not clear whether a non-electrical test method such as AASHTO T 259 would indicate the same trend.

OBJECTIVES
The goal of this research was to identify an effective test method to reduce uncertainty concerning the use of certain Iowa aggregate sources for manufacturing HPC for bridge decks. The specific objectives were as follows:
- Identify the properties (such as porosity and pore throat diameter) that describe the main features of the aggregate pore structure
- Evaluate test methods for quantifying the key pore system properties of coarse aggregates
- Examine the relationship between the coarse aggregate pore system properties and concrete permeability/chloride ingress measured using both electrical and non-electrical test methods
- Provide recommendations for evaluating Iowa coarse aggregates and HPC permeability

Motion to Approve by R. Koester; 2nd D. Rolando
Motion carried with 15 Aye, 0 Nay, 0 Abstaining

5. **Final Report: TR-712, *"Evaluate, Modify and Adapt the Concrete Works Software for Iowa's Use,"*** Kejin Wang, Iowa State University, $261,168 (15 Min)

BACKGROUND
High temperature differentials in mass concrete members at early ages may cause thermal cracking, thereby impacting their long-term durability. To minimize the risk of cracking, temperature prediction tools are often used to assist decision makers and determine preventive measures. ConcreteWorks is a computer program that helps analyze and manage the temperature of early-age mass concrete in specific geographical locations.

OBJECTIVE
This project aimed to evaluate, modify, and adapt the ConcreteWorks software to enhance its usefulness for mass concrete construction activities in Iowa. The long-term goals are to improve the longevity and performance of Iowa bridge foundations and other mass concrete structures by better understanding the thermal behavior of Iowa mass concrete, properly managing temperature development in mass concrete, and reducing concrete thermal cracking potential.

IMPLEMENTATION
The earlier version of the ConcreteWorks software was modified based on revisions proposed by the TAC and knowledge attained by analyzing the results of the laboratory tests and the I-35 NB to US 30 WB bridge pier footing investigation. The thermal analysis was performed using the ConcreteWorks and 4C software. A summary of the new ConcreteWorks features from this work are as follows. Many default input values in the new ConcreteWorks software have been updated based on the results obtained from this research project (both laboratory and field applications). They are available for use when analyzing Iowa mass concrete and can also be changed when measured data are available.

A soil initial temperature model has been added, which makes the predictions by the new ConcreteWorks more accurate.
The thermal analysis can be performed up to 31 days. However, the cracking probability can be generated for only up to 7 days.

DISCUSSION
Q. Who would use the Software? DOT, County, Cities, Contractors?
A. Yes, when we had a workshop there was a lot of interest in this software. The software is very easy to use. DOT uses it but can be used by others.

Motion to Approve by S. Struble; 2nd R. Koester
Motion carried with 15 Aye, 0 Nay, 0 Abstaining

Member left meeting

6. **Final Report: TR-673, *"Design and Performance Verification of a Bridge Column/Footing/Pile System for Accelerated Bridge Construction (ABC)",*** *Sri Sritharan, Iowa State University, $184,956* (15 Min)

BACKGROUND
About one in five bridges in Iowa were designated as structurally deficient in 2019 and require significant maintenance, rehabilitation, or replacement. ABC using prefabricated bridge components helps to improve the condition of bridges as it allows for faster and better repairs or bridge replacements. The Iowa Department of Transportation (DOT) has successfully implemented prefabricated components in bridge superstructure construction

OBJECTIVE
Develop a bridge column/footing/pile system that can be implemented economically and effectively using accelerated bridge construction (ABC) methodologies
• Validate the performance of the proposed connection details through laboratory tests
• Validate system performance through an outdoor test with consideration of soil-foundation-structure interaction
• Formulate design recommendations and details based on test results

Motion to Approve by D. Claman; 2nd O. Smadi
Motion carried with 14 Aye, 0 Nay, 0 Abstaining

Member joined meeting. Another member left meeting

7. **Final Report: TR-719, *"Development of Self-Cleaning Box Culverts,"*** Marian Muste, University of Iowa, $158,874, (15 Min)

BACKGROUND
Culvert sedimentation overview. Since U.S. Midwestern secondary roads often rely on culverts to allow streams to pass under roadways, culverts play a major role in our transportation infrastructure. Various culvert types are used depending on the culvert site and the characteristics of its drainage area. In general, larger flows and road embankment heights entail the use of multi-barrel (a.k.a. multi-box) culverts. Multi-box culverts require less headwater and are more economical than one larger, single-box culvert. Box culverts are typically designed to handle events with a 50-year return period; hence, in many areas of Iowa and indeed elsewhere, the amount of

water flow through a typical box culvert is relatively low throughout most of the year. While culverts are commonly sized to accommodate specific return flows (i.e., 25, 50, or 100 years), evidence suggests that culvert failures are rarely related to the exceedance of some level of flood flow. Instead, accumulations of debris and sediment at the culvert inlet that partially block the culverts are often the underlying cause of failure.

Review of Processes Leading to Culvert Sedimentation. Developing solutions for mitigating sedimentation at culverts requires a sound and holistic understanding of the physical processes involved. Conceptually, the processes associated with culvert sedimentation may be grouped into three major categories, soil detachment, sediment transport, and sediment deposition. The three categories of sediment processes are tightly related in an end-to-end spatial continuum that connects the sedimentation sources with the transport pathways and deposit locations. In order to understand the origin, structure, and the local processes involved in the formation of sediment deposits at culverts, we review below the relevant features for all the aforementioned processes.

OBJECTIVE

This study assembles observations and experiments acquired since 2010 on three of the four 3-barrel culverts located within 1.5 miles on the Willow Creek in Iowa City (Iowa). The location of the four culverts. Through this study respectively, were implemented and monitored for their performance between 2017 and 2019. In between Site, there is a 3-box culvert that was not modified since its construction in 2006. This culvert is heavily silted and will be used as a reference for the present study.

DISCUSSION

Q. Does the size of the culvert have an impact in terms of how well the self-cleaning asset will work? Would you use different treatments for different sizes?

A. We stayed with three box culverts, none of the issues are depending on the size. The Hydraulics differ with the number of boxes.

Motion to Approve by W. Weiss; 2nd D. Claman

Motion carried with 14 Aye, 0 Nay, 0 Abstaining

*** Member joined meeting ***

8. Proposal: TR-764, *"Use of Concrete Grinding Residue as a Soil Amendment: Additional Scope-Field Testing",* Halil Ceylan, Iowa State University, $90,240, (15 Min)

BACKGROUND

Roadway repair and rehabilitation projects vary significantly in size and scope. Roadway surface repair projects that contain a Portland cement concrete (PCC) grinding scope typically include work to remove roadway bumps and are generally referred to as bump grinding jobs. Smaller bump grinding jobs can vary from a single roadway intersection to a few miles of a two-lane undivided roadway section. With respect to grinding equipment, Diamond Products, for example, manufactures 1500 Series, 4500 Series, and 6000 Series grinding and grooving equipment specifically designed for this type of work. The 1500 Series grinding rig has a 38-in. (3-ft wide) grinding head while their larger 4500 and 6000 Series rigs both have 50-in. (4-ft wide) grinding heads. Contractors, including Cedar Falls Construction, Manatt's, and West Fork Grinding, for example, each have divisions that specialize in smaller bump grinding projects. For the original scope of this project, concrete grinding residue (CGR) was collected from 5 different grinding jobs.

With respect to smaller bump grinding jobs, CGR was collected in Palo, Iowa, Des Moines, Iowa and Ruthven, Iowa. On each of these three projects, Diamond Products 1500 Series grinders were used. Larger bump grinding projects, typically referred to as mainline surface repair jobs, often require several mainline concrete grinding rigs. These rigs can be staggered to grind full driving lanes on a larger project, typically a two-lane or greater divided highway. Larger companies like Pennhull, Interstate Improvement, and Diamond Surfacing, Inc., for example, each have multiple Diamond Products 6000 Series mainline rigs, each outfitted with 4-ft grinding heads. These companies often deploy three rigs in series and can grind several miles of PCC roadway in a single workday. However, larger mainline rigs can also be used on smaller bump grinding jobs with schedule constraints and/or where larger [grinding] heads are required to meet the project deliverables. Smaller bump grinders with 3-ft heads are typically used for smaller projects, while mainline jobs typically require mainline grinders with 4-ft heads. On a mainline bump grinding project in Muscatine and Sioux City, Iowa, fourth and fifth CGR samples were collected. Figure 1 shows the locations of five sites where CGR samples were collected.

While the majority of the focus of the current focus of the project is to evaluate the use of CGR for subgrade soil stabilization and water erosion, and environmental impacts, per Technical Advisory Committee (TAC) comments on November 22, 2019, it was decided that applying CGR on shoulders would initially be more implementable than for soil stabilization. To address this request, aggregate shoulder materials were identified, which may benefit from mixing/blending with CGR as a stabilizing agent. These unpaved shoulders suffer from wind erosion. The primary cause of this wind erosion is "wind whip" attributed to large trucks traveling at high speeds on roads with unpaved shoulders. Five county road sites were selected for shoulder sample collection. Each of the roads selected has similar features. Each location has a rigid (PCC) paved county road that is slated for concrete grinding in the near future (this late spring and summer). Each road also has aggregate shoulders. County roads in Washington County, Iowa, and Clinton County, Iowa, were selected.

OBJECTIVE
The main goal of this proposed research is to build and monitor unpaved highway shoulders with CGR and determine whether CGR poses as a solution for shoulder material loss. To achieve this goal, this project will conduct field tests to evaluate the performance of shoulders mixed with CGR. The specific research objectives are listed below:
1. Build highway shoulders with CGR
2. Monitor stiffness/strength of shoulders mixed with CGR
3. Monitor profile changes of shoulders mixed with CGR
4. Cost analyses

Motion to Approve by T. Kinney; 2nd R. Koester
Motion carried with 14 Aye, 0 Nay, 1 Abstaining

9. **Proposal: TR-776, *"Concrete Box Culvert Earth Pressure Monitoring – Scope Addition,"*** Katelyn Freeseman, Iowa State University, $159,942 (15 Min)

BACKGROUND
The scope of the existing project called for data analysis of one culvert on US20 that was instrumented in 2016. It had been hypothesized that newer code specifications (LRFD and LFD) were overestimating the soil pressures on box culverts. The US20 site was monitored to provide quantifiable data to either support or refute the increased codified pressures. The data from that culvert showed that the recorded pressures were actually 2 to 4 times greater than the LRFD and LFD/ASD design values – indicating a potentially concerning situation. Because of these surprising

results, the instrumentation of an additional culvert is necessary for data validation and to gain a deeper understanding of the pressure data received to date.

With assistance from the TAC, a culvert of interest was identified within the 2020 construction season that has desirable characteristics (mainly, fill height in excess of 20 feet) for this proposed additional instrumentation.

OBJECTIVE

It is proposed that this culvert be more heavily instrumented than the first culvert to provide additional data. The instrumentation is to include:

- Three cross-sectional locations:
  Anticipated zero settlement location (center of the culvert)
  Anticipated maximum settlement (one on the northeast, one on the southwest)
- 11 pressure cells per location- 3 on top, 4 on each side
- Approximately 10 strain gages per location

(For comparison purposes, note that for the first culvert: 5 pressures cells and 6 strain gages were used at one cross-sectional location)

The data will begin to be collected during construction so as to collect earth pressures and accompanying fill heights during compaction. In addition to instrumentation and data analysis efforts, the research team will also document the contractor's compaction activity, paying close attention to equipment and methods used. An emphasis on crack inspections will also be included throughout the duration of the project, including the culvert condition when it arrives, during compaction and once the culvert is in-service.

Motion to Approve by D. Claman; 2nd T. Kinney
Motion carried with 14 Aye, 0 Nay, 1 Abstaining

10. **Matching Funds Proposal: *"Utilization of Ground Tire Rubber for Energy Efficient Pavements,"*** **Chris Williams,** Iowa State University, $240,402 (15 Min)

BACKGROUND

The Project Goal is to translate lab developed technology to commercial practice, which enables the replacement of SBS elastomers used in the modification of asphalt pavements with scrap and end-of-life rubbers, *i.e.* ground tire rubber. This technology can potentially replace up to 100% of the SBS used with secondary feedstock, and moreover can enable the use of scrap polybutadiene currently discarded by Michelin. GTR is currently being used as an asphalt modifier, however because of the difference in density with asphalt, 1.03 g/cm3 vs. 1.12 g/cm3 of unmodified GTR, it suffers from inadequate storage stability making it not the preferred material in asphalt modification. The new technology matches GTR's density with asphalt (by mixing it with polybutadiene using simple compounding techniques causing the rubber particles to swell decreasing its density) producing a GTR product that meets storage stability specifications and would be accepted by the market. Our industrial partner for the GTR technologies is Michelin, through its Lehigh Technologies subsidiary. The research team with their industry partners proposes to conduct laboratory studies to evaluate the scaling of methods for inclusion of GTR into asphalt mixtures and their performance as well as conduct field trials through this project with local agencies and the Iowa Department of Transportation. Feedstock and process variable sensitivity will be measured to develop initial specification ranges required for successful full-scale deployment of the technology. Data from laboratory tests couple with field trial information will enable the research team to develop and apply advanced multivariable modeling and optimization tools in a big data machine-based learning approach to control quality for broader implementation of the technologies across the United States. Field trials will also generate publicity around the technology.

OBJECTIVE
The objectives of this project are to determine if utilizing PEX is both performance and cost advantaged alternative to the use of more traditional SBCs. Within the context of this proposal, the specific objectives are:

1. Synthesize GTR blends that will remain homogeneously suspended in asphalt binder
2. Determine the optimum blending variables (dosage, time, temperature)
3. Improve rheological properties of the top GTR blends over a range of asphalt binder grades
4. Compare results of GTR-modified asphalt using GTR/isoprene polymers from multiple sources to the same asphalt binders modified with SBCs in both asphalt binder and asphalt mixture performance tests
5. Conduct demonstration asphalt field paving trials and post-construction assessment.

Motion to Approve by D. Claman; 2nd T. Kinney
Motion carried with 14 Aye, 0 Nay, 1 Abstaining

1 Member left meeting

11. **Matching Funds Proposal:** ***"Mitigation of Chloride-Induced Corrosion through Chemisorption,"*** Ravi Yellavaja, North Dakota State University, $117,522, (15 Min)

BACKGROUND
Corrosion in Reinforced Concrete Pavements: Bare steel embedded in fresh concrete reacts with available moisture and oxygen to form an insoluble, passive protective layer composing of oxides and hydroxides which is around 17 to 50 A thick. This passive layer protects the steel by minimizing the dissolution of metal ions in concrete pore water (very low rate of anodic reactions), restricting the corrosion loss to less than 0.1 $\mu m/year$ [3]. According to ACI222-2001 [3], the corrosion rates could be at least 1000 times higher in the absence of the passive layer. Moreover, concrete surrounding the reinforced steel offers physical protection to the passive layer. In addition to this, the high pH value (between 9.5 and 13) of hardened concrete blocks most of the non-aggressive net-negative charged anions further protecting the steel. Notwithstanding this, the integrity and functionality of the passive protective layer is compromised due to the carbonation of concrete and chloride ion attack. Carbonation is a process in which the calcium hydroxide in the concrete reacts with carbon dioxide dissolved in the water trapped in the pores of concrete, also known as pore water resulting in the formation of calcium carbonate decreasing the pH of concrete pore water from ~12.0 to ~8.5. According to the Pourbaix diagram for iron [4] which provides the possible phases of an aqueous electrochemical system, iron is passive only when the pH values of pore water is above 9.5. Hence, carbonation deteriorates the passive protective layer initiating the corrosion of reinforced steel. However, carbonation is a very slow process and progresses at a rate of about 0.04 inches per year in high-quality low porosity concrete. Moreover, the calcium carbonate formed as a result of carbonation blocks a certain percentage of concrete pores preventing further deterioration.

OBJECTIVE
1) To identify the ideal concentration of polyol in the polyol-salt deicers to maximally mitigate the corrosion in embedded rebars.

2) To evaluate the optimal thickness and application method for the novel organic coating to obtain the maximum protection from chloride-induced corrosion.
3) To characterize the improvement in the bond between the rebars coated with abrasives impregnated organic coating and the concrete.
4) To investigate the combined efficiency of polyol-salt deicers and organic coating materials in mitigating chloride-induced corrosion in bridge decks.

Motion to Approve by W. Weiss; 2nd A. Bradley
Motion carried with 13 Aye, 0 Nay, 1 Abstaining

*** 1 Member left meeting ***

12. **Matching Funds Proposal:** ***"Implementing a Self-Heating, Electrically Conductive Concrete Heated Pavement System for the Bus Stop Enhancement Project in the City of Iowa City,"*** **Halil Ceylan,** Iowa State University, $227,051 (15 Min)

BACKGROUND

Concrete is considered a good electrical insulator in dry conditions. The electrical resistivity of air-dried normal concrete ranges from 600 to 1,000 kΩ-cm and oven-dried normal concrete has an electrical resistivity of about 108 kΩ-cm. However, the electrical resistivity of moist concrete is about 10 kΩ-cm and is therefore classified as a semiconductor. Conductive materials with extremely high conductivity values can be used to replace aggregate materials in normal concrete to achieve conductive concrete. Reported literature suggests that conductive materials incorporated into concrete can broadly be categorized as: (1) powders such as carbon and graphite; (2) fibers such as carbon fiber (CF), steel fiber (SF), steel shavings (SS), and carbon nano-fiber (CNF); and (3) solid particles such as steel slag and marconite. Most of the studies reported in the literature tried to experiment with various conductive materials individually or in combination, their dosage rates, and their impact on ECON properties in an effort to identify the optimized conductive material compositions and mix designs to achieve well-performing ECON. These studies tend to indicate that the combined use of various conductive materials in concrete has the potential to achieve a cost-effective and well-performing ECON with adequate electrical and mechanical properties.

While the concept of ECON, by adding conductive materials to conventional portland cement concrete, is not new for non-structural applications, such as heating, sensing, monitoring, and electromagnetic interference shielding, the real-world implementation of this concept for heating applications has been recently demonstrated in Nebraska for concrete bridge decks and in Iowa for airport pavements and paved roadways. Under the ongoing national-level funded project "*FAA PEGASAS Project No 1: Heated Airport Pavements*," which aims to investigate the efficacy and cost-effectiveness of new heated pavement technologies for airport pavement applications, the researchers at ISU have developed (1) new mix design and production methods of ECON that provide desirable system-level engineering properties and (2) new structural and system design approach for heated pavements using the new ECON developed. Figure 1 illustrates a schematic of the new ECON HPS developed by the ISU research team for large-scale construction applications, including the airport pavement construction at the Des Moines International Airport (DSM) and the paved roadway construction at the south parking lot entrance of the Iowa DOT headquarters in Ames, Iowa. The main components of this new ECON HPS include ECON as a conductive paving material (heating element), electrodes, temperature sensors, power supply, control unit, and PVC conduits and junction boxes. ECON for melting ice and snow on the surface can be placed in a thin concrete layer on top of a thicker PCC layer in the HPS structure to save on construction costs while providing adequate pavement structural capacity. For activation and deactivation of the ECON HPS under certain conditions, temperature sensors installed in the ECON layer are used to sense predetermined set point temperatures for turning the system “on” and “off”. HPS control may also be operated using an outdoor thermostat and/or a snow detector as alternative options if the temperature sensor fails due to wear and tear resulting from long-term operation. Using the current control strategy, the HPS should be deactivated when the ambient temperature reaches a range of 35 to 41°F. The performance of an ECON HPS can be monitored using sensors and a data acquisition system to estimate energy density and consumption.

<u>OBJECTIVE</u>
The objectives of this research are to implement self-heating ECON HPS for an upcoming pedestrian crossing and bus stop enhancement project at Muscatine Avenue in the City of Iowa City and consequently develop a draft guide or technical specification that the Iowa DOT and Iowa’s counties and cities could use for future ECON HPS implementation projects in their public works departments.

<u>DISCUSSION</u>
Q. How hot do you heat the concrete?
A. 5 degree’s Celsius, 40 degree’s Fahrenheit, this is enough to melt ice or snow.
Q. Are you changing the design every time you do an implementation, or do you use the same design?
A. We are changing the design every time at implementation for site specific situations.

Motion to Approve including additional delta costs of $20,000 for the City of Iowa City by W. Weiss; 2nd O. Smadi
Motion carried with 11 Aye, 0 Nay, 1 Abstaining

13. New business

B. Moore stated Iowa has been selected to host the 2023 TRB Low Volume Roads Conference. The County Engineers Association will be the host, working with the DOT along with Iowa State. This Will be held in Eastern Iowa in Cedar Rapids.

V. Goetz stated we have been awarded another Advance Innovation Deployment Grants from FHWA for the City of Dubuque as the sub-recipient for project titled “Smart Traffic Routing with Efficient and Effective Traffic Signals (STREETS).” This project is now moving forward with them to get project funds obligated. This leaves only one more project on the waiting list which is the implementation Project on pavement preservation with Todd Kinney in Clinton County. We have not heard the status about that project from FHWA.

B. Moore stated the first beams for the project funded a current AID grant from FHWA were sat in Buchanan County this week, produced through Forterra. The countie projects included in this effort have let five of the eight bridges. Three are under construction and two will be constructed in August, September. We expect the last bridge possibly to be built as late as next fall 2021.

14. Regular Meeting Adjourn

The May meeting was cancelled.

The next regular meeting of the Iowa Highway Research Board is scheduled for June 26, 2020 in the East/West Materials Conference Room at the Iowa DOT.

Vanessa Goetz, IHRB Executive Secretary