IOWA HIGHWAY RESEARCH BOARD (IHRB)
Minutes of January 26, 2007

Regular Board Members Present

A. Abu-Hawash
J. Adam
J. Alleman
J. Berger
S. Dockstader
R. Ettema
S. Gannon
J. Krist
R. Schletzbaum
J. Singelstad
D. Waid

Alternate Board Members Present

R. Knoche for J. Joiner
C. Marker for J. Rasmussen
J. Waddingham for T. Fonkert
C. Schloz
W. Zitterich

Board Members with No Representation

M. Nahra

Secretary - M. Dunn

Visitors

Scott Rinehart	Clay County, Iowa
Robert Libra	Iowa Department of Natural Resources
Ed Engle	Iowa Department of Transportation
Sandra Larson	Iowa Department of Transportation
Mary Starr	Iowa Department of Transportation
Chris Harding	Iowa State University
Charles Jahren	Iowa State University
Mike LaViolette	Iowa State University
Larry Stevens	Iowa State University
Wilf Nixon	The University of Iowa

The meeting was held at the Iowa Department of Transportation's East/West Conference Room, Materials Building, Ames, Iowa. The meeting was called to order at 9:00 a.m. by chairperson James Alleman with an initial total of 13 voting members/alternates at the table. One Member joined the table later bringing the final voting total to 14.

Agenda review/modification

None

Approval of the minutes
Motion by Roger Schletzbaum to approve the minutes from the December 7, 2006 meeting. 2nd by Scott Dockstader. Carried 13 aye, 0 nay, 0 abstaining.

Announcement of New/Transitions in Membership
Jim Berger moved from Alternate to Member
Jon Singelstad moved from Alternate to Member
Steve Gannon moved from Alternate to Member
Ahmad Abu-Hawash continues as IA DOT Member

C: An Alternate change to District 4 (Counties) will be made, but at this time no official notification has been received.

Review/Update Annual Budget Allocations
No changes were made to the IHRB Annual Budget Allocations

Review/Discuss Annual Calendar
C: We need to begin thinking about where our Travel Meeting will be held at in 2007.
C: No revisions have been noted for the Annual Calendar.
Q: Will the June 1st meeting location be decided in a few months?
A: Yes, generally we begin discussing locations for the Travel Meeting in April.

PROPOSAL REVIEW

Proposals received from the 2nd Solicitation for FY 006-07 were considered as follows:

IHRB 06-09, *Identification of Practices, Design, Construction and Repair Using Trenchless Technology*, Muhannad Suleiman, ISU/CTRE ($174,981)

Motion to Approve
Motion by John Adam. 2nd by Ron Knoche. 13 aye, 0 nay, 0 abstaining.

IHRB 06-11, *GIS-Based Decision and Outreach Tools for Aggregate Source Management*. Two proposals were submitted for this project by:
- Robert Libra, IDNR, Geological Survey ($86,357)
- Chris Harding, ISU/CTRE ($75,000)

C: There are five reasons why we should select the IDNR-Geological Survey proposal, namely:
1. IDNR is a state agency tasked with responsibility for statewide mapping.
2. IDNR is recognized as a mapping expert.
3. IDNR personnel are experts familiar with statewide geological conditions.
4. IDNR has discussions in progress with counties on statewide mapping.
5. IDNR has a web-based system already in place and available to the public that coordinates other geological details above and beyond the scope of this work; the ISU proposal requires another entity to maintain a web-based system if granted the contract.

Q: Do you know if other states have done this?
A: No; however, other states who haven't done this reference Minnesota as a prime example where overdevelopment has lost them up to 80% of their quarry assets. This tool will allow counties to know where assets are in order to prepare for the future and maintain availability of aggregate.

Motion to Select & Approve
Motion by Rob Ettema. 2nd by John Adam. 13 aye, 0 nay, 0 abstaining.

- One Member joined the table bringing the total to 14

FINAL REPORTS

Final Report TR-460, "Living Snow Fences," Wilfrid Nixon, The University of Iowa ($87,924)

PROBLEM - Blowing snow does the following:
- Puts snow on the road which may require nearly continuous work to remove it.
- Will stick to wet pavement and refreeze (even if chemicals are present).
- Significantly reduces visibility.

OBJECTIVES – Determine efficiency of Living Snow Fences which:
- May be up to 90% cheaper to install and maintain than manufactured fences.
- May store up to 12 times more snow than a fence of the same height.
- If made of standing corn may be more attractive to some landowners than a fence.

SUMMARY & CONCLUSIONS – Final recommendations:
- Rows of unharvested corn (between 6 and 16 rows) stored as much snow during the three winters of testing as traditional four foot or six foot high artificial fences.
- The corn rows stored the snow in a different manner from traditional fences.
- Testing during a winter season with slightly above average snow fall showed that 8 and 16 rows of corn placed adjacent to the right of way were able to prevent any significant observable drifting across the road being protected.
- Recommended number of rows (16 or 24) of corn depends on the fetch (less than or greater than 5,000 feet).
- Rows can be located at edge of field closest to the road.
- If fetch > 5,000 feet use 24 rows.
- If fetch < 5,000 feet use 16 rows.

Q: Did the farmer think the retained moisture provided by the Living Snow Fence was a benefit?
A: When there was low snowfall, yes, he was pleased with the resulting extra moisture. When there was more snow, there was not a problem with drainage in the spring; however, in some parts of Iowa where there is abundance of snow it could be a problem.

Q: Are deer drawn to the standing corn? Isn't this a problem being close to the road?
A: It's possible if ears of corn are left on the stalks; however, corn was gleaned in the fall so this wasn't a problem in the testing area.

Q: Would soybeans provide any benefits as Living Snow Fences?

A: That is unknown; however, there are studies using Switchgrass; if major snow drifting is expected, use of established design guides is required. That requires a permanent snow barrier farther away from the road.

Q: Did the DOT do the research with prairie grasses?
A: Yes, the DOT did the research.

Motion to Approve
Motion by Charles Marker. 2nd by Roger Schletzbaum. 14 aye, 0 nay, 0 abstaining.

INTERIM REPORT
Interim Report for TR-539, "Instrumentation & Monitoring of Precast Post-Tensioned Bridge Approach Pavement," located at IA Hwy 60 over the Floyd River. Mark Dunn, IA DOT Research & Technology Bureau, and Mike LaViolette, ISU/CTRE ($149,126) (Delta costs for this project are paid for by FHWA.)

Construction is complete. The precast pieces were placed at the site in September 2006. Faulting was present at the bridge approach; other projects showing large voids at the approach would benefit using precast pavements to reduce construction time and hence, inconvenience to the public.

GOALS FOR TR-539 –
- Verify structural performance of PPCP as bridge approach pavement
- Provide useful comparison with adjacent CIP bridge approach pavement

FUNCTIONAL DATA ACQUISTION SYSTEM –
A total of 113 sensors (both bridges) will be used with 7 multiplexers to simplify onsite wiring to collect data once an hour for approximately 16 months.

Q: What is the life of the sensors?
A: Most of them are re-usable for many years and not expensive ($150 each).
Q: Is information downloaded with laptop computers?
A: No. A digital memory card is used; county personnel are collecting data.
Q: That was the original federal study; to see if this was a faster more economical way to repair approaches. Are we also studying to be sure that is in fact the case here?
A: Yes. The Bridge Office is working on another project to build a fast-track replacement for an approach to replace the paving notch at the same time, and then place a precast panel at the approach.
Q: Do you recall the building costs on this?
A: It was several times more expensive that currently used techniques; from an economical approach it costs more for construction, but factoring in culture costs on a highly traveled roadway it is more desirable in the long run.
C: The total was somewhere between $200K-$300K.
C: We're hoping to reduce that amount considerably for the cost on our next project; there were some things that increased costs on this first attempt; it was not conventionally bid. There were design components that can be improved to make it easier to cast the panels and reduce the cost. We're currently putting together a Phase II proposal for submittal for federal funding.

NEW BUSINESS
Transportation Research Board (TRB) Conference Discussion
C: At TRB there was a lot of discussion concerning rapid construction to minimize traffic impact; there was also discussion regarding Intelligent Compaction, with Iowa and Minnesota at the leading edge of research investigations.

C: TRB is very relevant to this committee and what is being done in Iowa, the nation and many countries around the world. It's important to get that perspective. If anyone has the opportunity to go, it's important to attend.

ADJOURN
Motion to Adjourn
Motion by Jeff Krist, 2nd by Charles Marker.
Motion carried with 14 aye, 0 nay, 0 abstaining.

The February 2007 meeting of the Iowa Highway Research Board will be held **FRIDAY, February 23, 2007 at 9:00 a.m. in the East/West Materials Conference Room at the IA DOT.**

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Mark J. Dunn, IHRB Secretary