IOWA HIGHWAY RESEARCH BOARD (IHRB)
Minutes of April 27, 2007

Regular Board Members Present

A. Abu-Hawash
J. Adam
T. Fonkert
S. Gannon
J. Krist
R. Knoche
M. Nahra
R. Schletzbaum
J. Singelstad
J. Rasmussen
D. Wade
R. Younie

Alternate Board Members Present

P. Hanley for R. Ettema
J. Cable for J. Alleman
W. Zitterich

Board Members with No Representation

Jim Berger

Secretary

M. Dunn

Visitors

Ed Engle	Iowa Department of Transportation
Sandra Larson	Iowa Department of Transportation
Shashi Nambisan	Iowa State University
Neal Hawkins	Iowa State University/CTRE
Duane Wittstock	City of West Des Moines
Brent Phares	Iowa State University/CTRE
Travis Hosteng	Iowa State University/CTRE
Reg Souleyrette	Iowa State University/CTRE
Xudong Chai	Iowa State University/CTRE
John Whited	Iowa Department of Transportation
Larry Jesse	Iowa Department of Transportation
Amr Kandil	Iowa State University
Muhannad Suleiman	Iowa State University
Terry Wipf	Iowa State University/CTRE
F. Wayne Klaiber	Iowa State University
Dennis Burkheimer	Iowa Department of Transportation
Larry Stevens	Iowa State University/CTRE

The meeting was held in the East/West Materials Conference Room at the Iowa Department of Transportation (Iowa DOT), Ames, Iowa. The meeting was called to order at 9:00 A.M. by Vice-Chairman Jeff Krist with 14 voting members/alternates at the table.

Iowa Highway Research Board Certificates of Appreciation
Mark Dunn presented IHRB Certificates of Appreciation for contributions to the Board and to research in Iowa though development and promotion of innovation and progress in highway transportation to Dr. James Cable and Dr. Wayne Klaiber of Iowa State University.

Agenda review/modification
None

Approval of the minutes
- Motion to approve the minutes from the February 23, 2007 meeting by James Cable. 2nd by R. Younie. Carried 14 yea, 0 nay, 0 abstaining.

FINAL REPORT TR-528, "Development of a New Process for Determining Design Year Traffic Demands," Neil Hawkins, ISU, ($125,000)

PURPOSE
To create a tool to improve sub-area traffic projections for the civil engineering design process. This tool employs an easy to use, arterial level planning method for multiple land use scenarios, resulting in better traffic analysis and alternatives for land use, ROW and CIP planning.

SCOPE
To develop an intermediate planning tool using ArcMap and Excel for analysis. This provides quick answers to changes in land use at the local roadway level; a tool serving both planning and engineering staff needs that relies on common traffic capacity, GIS visualization, and calculation tools.

CONCLUSIONS
This planning tool supports decision-making through a graphical representation of land use and network capacity information and has been demonstrated at multiple scales within growing communities (Johnston case-study at 2,600 acres, West Des Moines case-study at over 30,000 acres).

Q: Is this something that your staff can use or just consultants?
A: We have a graduate student and former consultant both on staff. There is a time/cost factor for using consultants. This is currently an internal process.

Motion to Approve by Roger Schletzbaum, 2nd by Ron Knoche.
Carried 14 yea, 0 nay, 0 abstaining.

FOLLOW-UP REPORT "Field Experiment Plan," Paul Weigand, ISU, ($96,700) *Note: This presentation report is a follow-up to a previously funded IHRB project report.*

PURPOSE
This portion of the study examined friction, smoothness and tire pavement noise with the understanding that there are other factors that are interrelated. The elements studied impact drivers and adjacent landowners, quality of life and urban and rural communities and individuals.

SCOPE
This study examined the application of current technologies to lower noise levels using three types of locations: Type 1: New pavement structures (one new site) was conducted in Iowa; Type 2: Surfaces in service for a number of years (8 sites) were conducted in CO, ND, KS, IA, GA, WI and VA; and Type 3: One-time tests using particular sections exhibiting potential influences to improve the noise and surface texture (18 existing sites) were conducted in CO, ND, MN, IA, AL, GA, NC, VA, OH, IN, MI, Quebec, NY and MO.

On-Board Sound Intensity was used to test noise (OBSI). RoboTex was used for texture testing. A skid trailer was used to test friction, as well as a Dynamic Friction Tester (DFT) on loan from the Federal Highway Administration (FHWA).

CONCLUSIONS
Noise cannot be predicted based on specification of a nominal texture or depth. Changing the texture changes noise levels, and this requires modifications to texturing equipment using technology for immediate feedback to the texturing operator during texturing and application procedures during texture construction.

The third phase of this research is currently getting underway and is part of a pooled-fund study led by the Iowa Department of Transportation in conjunction with seven other states. Data analysis and field studies will be continued, in addition to examination of construction practices and specifications. New sections will be built; some of these will be conventional to help provide additional information and some will be innovative sections.

2007 PROJECT RANKING AND SELECTION
VOTING RULES: Each Member was given 20 votes; up to four votes could be cast per project. One Member previously voted by proxy with all other Members present. Items 8.04, 6.07 and 11.08 were given an overview of support.

Item 8.04 – John Whited, IA DOT Research and Technology Bureau, gave an overview of the Condition Acquisition Reporting System (CARS), an ongoing pooled fund study (Iowa is the lead state) in progress since 1998 which relates to proposed project 8.04, *Examine the Notification Process for Winter Road Conditions on Lower Service Primary Routes and Secondary Routes and Make Recommendations on Improvement to the System*.

CARS reflects both manual and automatic input information which is presented in real-time to the public. CARS alerts drivers using Dynamic Message Signs (DMS) to Amber Alerts, weather, road and traffic conditions, crashes, obstructions, cautions, detours, closures, flooding and other information on a local or statewide basis. A demonstration was given of the system.

Q: What does it cost Iowa in time and money to be involved?
A: There are different levels of involvement; one aspect is the Winter Road Report, which includes the Commercial Industrial Network because in 2001 when we partnered with the Iowa State Patrol, there was too much information to be independently input into the system so it was limited. By the second season, CARS recognized all primary routes. As location tables are redefined, a lot depends on how the GIS and LRS systems in each state have been developed. For Iowa, this is not going to be a major task, and time investments are not known. There are more secondary roads and good reporting methods are necessary which does take more time if you don’t have a GIS to work with.

Items 6.07 & 11.08 - Robert Younie spoke in support of item 6.07, *Web-based Optimization of Snow Plowing Assets and Resources Based on Real-time Weather Data* (e.g., meteorological changes and road conditions) and item 11.08, *Pavement Markings and Safety*.

Mark: Is the Preliminary Ranking a valuable tool for the Board?
A: General consensus: Yes

Mark: Item 10:10, *Effects of Vehicle Impact Load Required by LRFD Specification on Piers*, will not be voted on because it is already active in the SP&R Program.

Discussion was made regarding the difference between item 10:11, *LRFD Pile Design* and item 10:17, *Developing Design Procedures for Friction Piles in Iowa*. It was determined both items be voted on individually.

The following were top rated projects voted on and given Final Ranking by the Iowa Highway Research Board:

FINAL RANKING AFTER VOTING - Projects with at least 8 votes:

10.17	Developing Design Procedures for Friction Piles in Iowa	20
11.08	Pavement Markings and Safety	19
8.02	Infrastructure Impacts – Iowa's Bio-Economy	16
10.11	LRFD Pile Design	16
11.05	Evaluation of Rumbles Stripes in Reducing Run Off Road Crashes and Improving Pavement Edge Line Visibility and Longevity	16
6.05	Development of a Low Cost, Agricultural-based Deicing Product with Improved Performance over Standard Deicing Chemicals	14
7.07	Pavement Design for Urban Roads	13
2.03	Using the Refined LiDAR Information That Meets FEMA Standards in All Counties	12
8.01	Context Sensitive Bridge Design: Looking Above the Substructure at Bridge Rails and Approach Railing	11
10.01	Detection of Voids Below Approach Pavement	11
7.10	Investigation of the Risk of Random Cracking Problems with the Use of Early Entry Sawing	10
10.03	Update of Single Barrel Box-Culvert Standards to Include a Straight Headwall Option	9
11.03	Temporary Traffic Control Plans for Local Agency Improvements	9
8.03	Create a Web-based Course for the LTAP Document A RESOURCE GUIDE FOR COUNTY ENGINEERS on the County Engineers Web Site	8
8.04	Examine the Notification Process for Winter Road Conditions on Lower Service Primary Routes and Secondary Routes and Make Recommendations on Improvement to the System	8

Finalize Location of 2006 IHRB Traveling Meeting
The Board discussed various travel options and voted on locations for the June 1, 2007 Travel Meeting. The Board will travel to Ottumwa, Iowa, for a tour and examination of an ethanol plant with a short trip to the Ottumwa roundabout.

IHRB Support for Hosting the 2011 Low Volume Roads Conference in Iowa
Dr. Shashi Nambisan, Director of CTRE, introduced himself to the Board and requested IHRB support for CTRE's bid to host TRB's Low Volume Road Conference in 2011. The conference is held every four years and has not been held in Iowa since 1979. The Board will provide a letter of support for hosting the conference. No monetary support was requested or approved.

New Business
None

Motion to Adjourn
Motion to Adjourn by Robert Younie. 2nd by Mark Nahra.
Carried 14 yea, 0 nay, 0 abstaining.

Travel Meeting: The next scheduled meeting for the Iowa Highway Research Board will be held Friday, June 1, 2007 at 9:00 a.m. at Indian Hills Community College in Ottumwa, Iowa.

_____

Mark J. Dunn, IHRB Secretary