

1. REPORT NUMBER CA24-3724	2. GOVERNMENT ASSOCIATION NUMBER N/A	3. RECIPIENT'S CATALOG NUMBER N/A
4. TITLE AND SUBTITLE Technology Exchange on Managing Pavements		5. REPORT DATE 09/16/2024
		6. PERFORMING ORGANIZATION CODE N/A
7. AUTHOR Omar Smadi, Director Center for Transportation Research and Education, Iowa State Univ, https://orcid.org/0000-0002-3147-9232		8. PERFORMING ORGANIZATION REPORT NO. N/A
9. PERFORMING ORGANIZATION NAME AND ADDRESS Iowa State University Center for Transportation Research and Education 2711 South Loop Drive, Suite 4700 Ames, IA 50010-8664		10. WORK UNIT NUMBER N/A
		11. CONTRACT OR GRANT NUMBER Transportation Pooled Fund, TPF-5(439)
12. SPONSORING AGENCY AND ADDRESS Iowa Department of Transportation 800 Lincoln Way Ames, IA 50010		13. TYPE OF REPORT AND PERIOD COVERED Tech Transfer Summary (January 2020 – September 2024)
		14. SPONSORING AGENCY CODE Iowa Department of Transportation
15. SUPPLEMENTARY NOTES DOI: https://publications.iowa.gov/51199/		

16. ABSTRACT

Iowa Department of Transportation (DOT) partnered with nine other states in developing the format and program for the conference and participate in related workshops along with a technology exchange session dedicated to state DOTs to learn and review issues associated with managing pavements. A technology exchange on managing pavements held concurrently with the 11th International Conference on Managing Pavements represented a unique opportunity for pooled fund members to learn from practitioners and researchers worldwide on new technologies, engineering, practice and research related to managing pavements in their own states. The technical program of the conference was organized by the Center for Transportation Research and Education (CTRE), pooled fund members, and Transportation Research Board (TRB) Pavement Management Systems International Conference Subcommittee AFD10(3). The pooled fund coordinated technology exchange activities concurrently with the conference.

17. KEY WORDS Asset management; Innovation; Pavement management systems; State departments of transportation; Technology transfer	18. DISTRIBUTION STATEMENT No restrictions.	
19. SECURITY CLASSIFICATION (<i>of this report</i>) Unclassified	20. NUMBER OF PAGES 3	21. COST OF REPORT CHARGED N/A

Reproduction of completed page authorized.

Technology Exchange on Managing Pavements

tech transfer summary

September 2024

RESEARCH PROJECT TITLE

Technology Exchange on Managing Pavements

SPONSORS

Iowa Department of Transportation
(InTrans Project 20-730)
Transportation Pooled Fund TPF-5(439)

PRINCIPAL INVESTIGATOR

Omar Smadi, Director
Center for Transportation Research and Education, Iowa State University
smadi@iastate.edu / 515-294-7110
(orcid.org/0000-0002-3147-9232)

MORE INFORMATION

intrans.iastate.edu

The 11th International Conference on Managing Pavement Assets aided in the development of a framework for the next generation of pavement management approaches and tools.

Background

Iowa State University's Center for Transportation Research and Education (CTRE) and the Iowa Department of Transportation (DOT) collaborated to organize the 11th International Conference on Managing Pavement Assets held in Chicago, Illinois, August 7–10, 2022.

To accomplish this task, CTRE and the Iowa DOT formed a Transportation Pooled Fund (TPF-5(439)) with 10 other states (California, Connecticut, Idaho, Illinois, Kansas, Mississippi, North Dakota, New Mexico, Oklahoma, and Texas) to develop the format and program for the conference and to participate in related workshops and a technology exchange session dedicated to state DOTs to learn and review issues associated with managing pavements.

The technology exchange on managing pavements held concurrently with the conference provided a unique opportunity for pooled fund members to learn from practitioners and researchers worldwide about new technologies, engineering, practice, and research related to managing pavements in their own states.

Problem Statement

Since pooled fund member states may be at different stages of implementation regarding their pavement asset management practices, the conference and other related activities of the pooled fund collaboration provided an opportunity for member agencies and other experts to share best practices and strategies for overcoming future challenges.

Objectives

- Provide communication and information-sharing regarding pavement management practices and innovation among pooled fund member states. Discuss research needs and provide research ideas to the Transportation Research Board (TRB).
- Provide a technology- and knowledge-exchange forum to enhance the practical knowledge of pooled fund member states concerning pavement management implementation and how to support asset management activities.
- Enhance the working knowledge of the pavement management community.

CTRE

Iowa State University
2711 S. Loop Drive, Suite 4700
Ames, IA 50010-8664
515-294-8103

The mission of the Center for Transportation Research and Education (CTRE) at Iowa State University is to conduct basic and applied transportation research to help our partners improve safety, facilitate traffic operations, and enhance the management of infrastructure assets.

The sponsors of this research are not responsible for the accuracy of the information presented herein. The conclusions expressed in this publication are not necessarily those of the sponsors.

Key Findings

- Pre-conference activities included two optional workshops, partner organization meetings, TRB committee meetings, and a pooled fund states meeting.
- The 11th International Conference on Managing Pavement Assets had 155 attendees from 20 countries (Australia, Austria, Belgium, Cameroon, Canada, Chile, Denmark, Estonia, France, Ireland, Israel, Jordan, Slovakia, Slovenia, South Korea, Spain, Sweden, Taiwan, Tunisia, and the United States).
- The United States attendees represented 37 states (Arizona, California, Colorado, Connecticut, Delaware, Florida, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, and Wisconsin) and the District of Columbia.
- Conference activities included four keynote speakers (Omer Osman, P.E., Transportation Secretary, Illinois DOT; Carlos M. Bracerias, P.E., Executive Director, Utah DOT; Dr Kieran Feighan, Managing Director, PMS Pavement Management Services Ltd.; and Hari Kalla, Associate Administrator, FHWA Office of Infrastructure), seven concurrent sessions, two plenary sessions, and a poster session.
- The two pre-conference workshops were Incorporation of Structural Response in Asset Management and Sustainability, Resilience, and Equity Considerations in Pavement Management: Current State of Practice, Challenges, and The Way Forward. The concurrent sessions themes were Airport PMS, PMS Innovation (four sessions), PMS Parameters (Deterioration, DST, etc.) (four sessions), Communication/Visualization, Data Quality, Life-Cycle Analysis, Pavement Distress, PIARC PMS Session I – Pavement Management, PMS Implementation (two sessions), FHWA Workshop on Resilient Pavements – Part 1, FHWA Workshop on Resilient Pavements – Part 2, Distress Data, Local PMS, PIARC PMS Session II – Big Data and Pavement Management, and PMS: Sustainability and Resilience.
- Following the conference, CTRE put together a training webinar on strategies for developing and implementing the next generation of pavement management approaches and systems for partner states.
- The conference had two sponsors (TRB and Pathway Services Inc.) and nine exhibitors (AgileAssets, a Trimble Company; All About Pavements, Inc. [API]; ARRB Systems; Deighton Associates Limited; International Cybernetics; Pathway Services Inc.; Pavemetrics; Street Saver; and XenomatiX).



Keynote speaker Illinois DOT's Omer Osman, left, welcoming attendees to the conference while FHWA Office of Infrastructure Associate Administrator Hari Kalla, center, and Utah DOT Director Carlos M. Bracerias, right, listen during the opening session



Conference attendees in the exhibit hall visit major sponsor Pathway Services Inc.

Select Feedback on Pre-Conference and Conference Sessions

“The session went very well. The audience were engaged and had several good questions.” – AgileAssets’ Magdy Mikhail, moderator for PMS Innovation session

“Session attendees gained knowledge in the fundamentals of pavement resilience and its incorporation into pavement and asset management. Furthermore, attendees were made aware of case studies where resilience was incorporated into pavement assets through state DOT, academic, and international perspectives. There is a clear need for more discussion involving incorporating resilience into pavement management. This will include novel research, more case studies, and more conversation in an effort to advance the state of the practice.” – FHWA’s Austin Jarrell, moderator for FHWA Workshop on Resilient Pavements – Part 1

“The session was successful in showing different efforts related to pavement distress. There were a few themes that ran through the presentations related to transitioning or evolving processes, technology, and understanding of pavement distress. ... The key takeaway was the difficulty in transitioning to new, different, better? ways to obtain, visualize, analyze, and use pavement distress data.” – Kansas DOT’s Rick Miller, moderator for Pavement Distress session

“We had really strong presentations from practitioners who are beginning to work in each of the topic areas. ... After the presentations, the participants worked in groups to discuss challenges and suggestions for considering sustainability, resilience, and equity into a pavement

management system. ... We intend to produce a circular documenting the examples provided and the suggestions from the workshop participants.” – Applied Pavements’ Katie Zimmerman, moderator on the pre-conference workshop Sustainability, Resilience, and Equity Considerations in Pavement Management: Current State of Practices, Challenges, and the Way Forward

Implementation Readiness and Benefits

The establishment of the Transportation Pooled Fund created a collaborative research program that provided an accessible and efficient way for highway agencies to participate in the 11th International Conference on Managing Pavement Assets. The conference aided in the development of a framework for the next generation of pavement management approaches and tools.



Participants from the workshop on Sustainability, Resilience, and Equity Considerations in Pavement Management: Current State of Practice, Challenges, and The Way Forward