

ICMPA 2022 — 11th International Conference on Managing Pavement Assets

June 7–10, 2022 | Chicago, IL, USA (Hilton Chicago)
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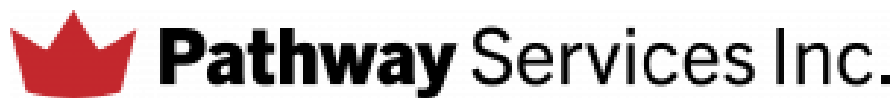
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Conference Agenda

Pre-Meeting – Tuesday, June 7

8 am to 5 pm **Registration** – 8th Street North (Lobby Level)

9 am to 12 pm **Pooled Fund Meeting (by invitation only)** – PDR 2 (3rd Floor)

1:30 pm to 5 pm **Optional Workshops:**

- 1. Incorporation of Structural Response in Asset Management** – Joliet (3rd Floor)
- 2. Sustainability, Resilience, and Equity Considerations in Pavement** – Astoria (3rd Floor)

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ICMPA 2022 Conference Workshop 1. Tuesday, June 7, 2022 1:30 – 5:00 PM Incorporation of Structural Response in Asset Management

Workshop Description:

State DOTs have historically relied on ride quality and surface distresses to drive their pavement decision-making process. While these metrics are important and merit attention, they are lagging indicators. Pavements are designed to provide structural support, so efficient methods of documenting the current and future structural condition (a leading indicator) are needed. In the past few years more than half of the State DOTs have started exploring the incorporation of structural response in their asset management efforts. This workshop will provide a forum for exchanging information on State DOT experiences and applications with structural response data to help formulate implementation needs and ideas.

Workshop Agenda:

Proposed workshop agenda is as follows:

- Introduction: Importance of Pavement Structural Evaluation to Decision-Making Process
 - Max Grogg, ApTech – 15 minutes
- State DOT Experiences and Applications: Part 1 – 90 minutes
 - Eric Carroll, South Carolina DOT
 - Xiaoyang Jia, Tennessee DOT
 - Rick Miller, Kansas DOT
 - Jenny Li, Texas DOT
- Break – 20 minutes
- National Perspective: Part 2 – 40 minutes
 - Nadarajah Sivanewaran, FHWA
 - Gerardo Flintsch, VTTI
- Round Table Discussions: Part 3 – 45 minutes
 - List of Lessons Learned
 - List of Potential Applications

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ICMPA 2022 Conference Workshop 2. Tuesday, June 7, 2022 1:30 – 4:30 PM

Sustainability, Resilience, & Equity Considerations in Pavement Management: Current State of Practice, Challenges, and the Way Forward

The use of pavement management systems (PMS) has grown considerably since their conception in the 1960s. A PMS is an important tool for prioritizing needs, recommending projects, and demonstrating the benefits to the timely application of pavement maintenance, preservation, and rehabilitation treatments in maintaining or improving the overall condition of a pavement network.

Traditionally, pavement management systems relied primarily on pavement condition, expected performance, and cost information to identify treatment needs and prioritize projects under constrained conditions. Today, other considerations are becoming increasingly important in determining what treatments are used and what projects are recommended. These factors include environmental, social, and risk considerations such as pavement sustainability, resilience, and equity.

At present, no known framework or model exists to consider these environmental, social, and risk factors within pavement management. Some agencies are using tools such as life-cycle assessment (LCA) and sustainability rating systems for assessing environmental and social impacts. But because of their detail, they have primarily been used at the project level. At the network level, some agencies are conducting vulnerability studies to target resilience efforts or exploring the use of social metrics to ensure the equitable distribution of funding. But guidance on how these tools and practices can be used in conjunction with a PMS is lacking.

During this workshop, practitioners will share current experiences in considering sustainability, resilience, and equity in pavement management. A significant portion of the workshop involves breakout groups so that participants can deliberate on challenges related to incorporating these factors in a PMS and brainstorm ideas for a way forward. The findings and suggestions generated during this workshop will be summarized in a Circular and submitted to the Transportation Research Board (TRB) for publication.

Workshop Agenda

Duration	Topics	Speakers
Part I: Agency Experiences With Sustainability, Resilience, and Equity in PMS		
1:30 PM	Workshop Introduction <ul style="list-style-type: none">ObjectivesApproach	Katie Zimmerman, APTech
	1:45 PM	
2:00 PM		Considering Resilience in Pavement Management <ul style="list-style-type: none">Vulnerability study overviewFindingsConsideration in pavement management project and treatment selectionWhat's holding us back?

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2:15 PM	Considering Equity in Project Selection <ul style="list-style-type: none"> Reasons for incorporating equity into investment decisions in Columbus, OH Current efforts to consider equity in project selection Future initiatives What's holding us back? 	Andrew Williams, City of Columbus, OH	
2:30 PM	Panel Questions/Discussion – What's Holding Us Back? <ul style="list-style-type: none"> The three speakers will entertain questions related to the issues agencies face in considering environmental, social, and risk factors in pavement management. 		
2:45 PM	<i>Break</i>		
Part II: Incorporating Sustainability, Resilience, and Equity into a PMS Framework			
3:00 PM	Small Group Discussions: How can agencies incorporate sustainability, resilience, and equity into a PMS framework? <ul style="list-style-type: none"> Participants will sit at round tables. Each table will be asked to discuss three prepared questions related to either sustainability, resilience, or equity One member from each group sits on the panel (in the next session) Panelists will use information from the group discussions to answer questions posed by facilitators (in the next session) 		All
3:45 PM	Panel/Facilitated Discussion: They Way Forward. <ul style="list-style-type: none"> Discussion topics will revolve around the questions posed to the groups in the previous session Facilitators will pose questions (organized by topic area) to panelists and engage other workshop attendees. A notetaker will compile key takeaways and discussions for the workshop summary 		All
4:30 PM	Adjourn		

Following the workshop, the key takeaways will be summarized to serve as a resource for highway agencies and PMS tool developers on how sustainability, resilience, and equity can be integrated with traditional pavement management concepts and used in the decision-making process. The findings will be submitted to TRB for consideration as a published Circular and reflected in the Conference Summary.

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Conference Agenda

Day 1 – Wednesday, June 8

- 7 am to 5 pm** **Registration** – 8th Street North (Lobby Level)
- 7 am to 8 am** **PIARC AM Committee Meeting (by invitation only)** – PDR 7 (3rd Floor)
- 7 am to 8 am** **Breakfast** – Continental A & B (Lobby Level)
- 8 am to 10 am** **Opening Session** – Continental C (Lobby Level)
 - 1. Welcome from IL DOT, Omer Osman, Director, IL DOT**
 - 2. Welcome from FHWA, Hari Kalla, Associate Administrator for Infrastructure**
 - 3. Keynote Speaker, Carlos Braceras, Director, Utah DOT**
- 10 am to 8 pm** **Exhibitors** – Continental A & B (Lobby Level)
- 10 am to 10:30 am** **Break** – Continental A & B (Lobby Level)
- 10:30 am to 12 pm** **Concurrent Technical Session 1**
- 12 to 1:30 pm** **Lunch** – Continental A & B (Lobby Level)
- 1:30 to 5 pm** **Concurrent Technical Sessions 2 and 3**
- 3 pm to 3:30 pm** **Break** – Continental A & B (Lobby Level)
- 6 to 8 pm** **Social Event – Reception** – Continental A & B (Lobby Level)

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ICMPA 2022 Concurrent Agenda

Day	Concurrent Session #	Location	Session Theme	Authors	Paper Title
Wednesday 6/8 (10:30 – 12:00)	1-1	Joliet 3rd Floor	Airport PMS	Peter-Paul Dzwilewski , Katherine Gauthier, Travis Gagnon, Genevieve Long, and Monty Wade	Evaluation of Estimated Asphalt Repair Quantities within Airfield Pavement Management
				Greg White and Ricardo De Azevedo	Managing the Evolution of Early-Life Runway Surface Friction
				Martin Wiström	Large-Scale Rolling Weight Deflectometer (RWD) Measurements in Norway, a Case Study
	1-2	Astoria 3rd Floor	PMS Innovation	Jia-Ruey Chang , Szu-Min Kang, and Kuang-Hwai Hsu	Road Information Modeling (RIM) Achieves Visual and Insightful Benefits for Road Management
				Ross McCarthy , Gerardo Flintsch, Edgar de León Izeppi, Samer Katicha, and Alejandra Medina	A Proactive Approach for Incorporating Systemic Safety into Pavement Management
				Tim Martin , Michelle Baran, Georgia O'Connor, and Ulysses Ai	Estimation of Residual Risk of Road Infrastructure Elements to Allocate Annual Road Agency Funding
	1-3	Continental C Lobby Level	PMS Parameters (Deterioration, DST, etc.)	Feng Hong , Jenny Li, Magdy Mikhail, and Andre Simit	Effect of Financial Factors Uncertainty on the Network-Level Pavement Performance Prediction Reliability
				Yusra Alhadidi and Laith Tashman	Software Development of Pavement Preservation Guidelines in Jordan
				Prashant Ram , Tammy Ratliff, Anthony Maloche, Kelly Smith, and Katie Zimmerman	Development of Pavement Condition Crosswalk and Reporting Procedures for Federal Lands Management Agencies

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Wednesday 6/8 (1:30 – 3:00)	2-1	Joliet 3rd Floor	Communication/ Visualization	Margot Yapp, Mei-Hui Lee, and Shahram Misaghi	How to Get \$5 Billion/Year for Your Transportation System: The California Experience
				Phil Mescher, Matt Haubrich, and Brad Allen	Iowa's Interstate Investment Plan
				Pablo E. Godoy B., Fernando Paniagua, and Aleli Osorio Lird	Methodology for a Level of Service Assessment of Unpaved Roads in Paraguay
	2-2	Astoria 3rd Floor	PMS Innovation	Katie Zimmerman, Prashant Ram, and Brad Allen	Lessons Learned in Pavement Management: What's Needed to Remain Relevant?
				David Paine and Bruce Clayton	Road Network Management with Artificial Intelligence
				Marta Contreras, Alondra Chamorro, Nikole Guerrero, Carolina Martínez, Tomás Echaveguren, and Natalia Nieto	Methodology to Evaluate Social Vulnerability and Critical Infrastructure Accessibility: A Case Study in Central Chile
	2-3	Continental C Lobby Level	PMS Parameters (Deterioration, DST, etc.)	Jorge Prozzi, Ruohan Li, Jamie Byers, and Hongbin Xu	Develop Decision Tree Incorporating Surface Conditions
				Max Grogg, Kelly Smith, Chris Williges, and Scott Schram	Incorporating Pavement Smoothness Benefits to Enhance the Iowa Department of Transportation's Pavement Type Determination Process
				Tim Martin and Lith Choummanivong	Use of Observational and Experimental Data to Develop Australian Road Deterioration (RD) Models

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Wednesday 6/8 (3:30 – 5:00)	3-1	Joliet 3rd Floor	Data Quality	Muhamad Masud and Syed W. Haider	Review of LTPP Weigh-In-Motion Loading Data Quality for Different Sensor Types
				Zia Zihan and Omar Smadi	Instance Segmentation of Pavement Distresses from Unmanned Aerial Vehicle (UAV)-Based Vision Data
				Luis Ramirez, Ryan Finley, and Doug Frith	Implementation of Control Limit and Bias Checks for Independent Verification of Automated Pavement Distress Data Collected for NCDOT
	3-2	Astoria 3rd Floor	PMS Innovation	Katherine Gauthier, Peter-Paul Dzwilewski, Genevieve Long, and Monty Wade	The Use of GPS-Based Distress Mapping for Pavement Maintenance
				Ulysses Ai and Tim Martin	The Fleet Ride Index (FRI): A Customizable Measure of Ride Quality for Heavy Vehicles
				Ahmad Alhasan and Omar Smadi	Pavement Friction Management: The Intersection of Safety and Pavement Management Systems
	3-3	Continental C Lobby Level	PMS Parameters (Deterioration, DST, etc.)	Carlos M. Chang, Sui Tan, and Roger E. Smith	Impact of Splitting Weathering and Raveling on the Pavement Condition Index (PCI)
				Peter E. Sebaaly, Alberto Albejjani, Elie Y. Hajj, and Scott Gibson	Effectiveness of Microsurfacing Treatment on Asphalt Pavements
				Aaron Gerber, Charles Pilson, Ken Maser, and Peter Schmalzer	Incorporating Traffic Speed Deflectometer Data into Pavement Management Decision-Making for the State of Idaho

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Conference Agenda

Day 2 – Thursday, June 9

- 7 am to 5 pm Registration** – 8th Street North (Lobby Level)
- 7 am to 8 am Breakfast** – Continental A & B (Lobby Level)
- 7 am to 8 am PIARC AM Committee Meeting (by invitation only)** – PDR 7 (3rd Floor)
- 7 am to 8 am TRB Pavement Management Committee Meeting** – PDR 2 (3rd Floor)
- 8 am to 9:30 am Plenary Session** – Continental C (Lobby Level)
 - 1. International Keynote Speaker, Kieran Feighan, Managing Director, PMS Pavement Management Services Ltd**
- 9:30 am to 5 pm Exhibitors** – Continental A & B (Lobby Level)
- 9:30 am to 10 am Break** – Continental A & B (Lobby Level)
- 10 am to 12 p.m. Concurrent Technical Session 4**
- 12 pm to 1:30 pm Lunch** – Continental A & B (Lobby Level)
- 1:30 pm to 5 pm Concurrent Technical Sessions 5 and 6**
- 3 pm to 3:30 pm Break** – Continental A & B (Lobby Level)
- 5:30 pm to 6 pm Busses departing from Hilton to Carnivale** – Lobby Level
- 6 pm to 9 pm Social Event – Conference Gala Dinner** – Carnivale

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Day	Concurrent Session #	Location	Session Theme	Authors	Paper Title
Thursday 6/9 (10:00 – 12:00)	4-1	Joliet 3 rd Floor	Life-Cycle Analysis	Eugene A. Amarh, Gerardo W. Flintsch, Joao Santos, Brian K. Diefenderfer, and Wilmar Fernandez	Life-Cycle Impact Assessment of in Situ Recycled Pavement Sections in Virginia
				Prashant Ram, Senthil Thyagarajan, Nadarajah Sivaneswaran (Siva), Katie Zimmerman, and Kelly Smith	Remaining Service Interval (RSI): A Framework for Life-Cycle Planning for Pavements
				Prashant Ram, Katie Zimmerman, and Abhik Borthakur	Pilot Implementation of Life-Cycle Planning Process for Pavements
				David Paine and Bruce Clayton	Life-Cycle Asset Management – Making it Real
	4-2	Astoria 3 rd Floor	Pavement Distress	Simon Tetley and Jerry Daleiden	Acquisition and Evaluation of Road Condition Data in South Africa, Past, Present, and Future – A Vision of Utilising Fact Instead of Opinion
				Jacob Pellmann	High Resolution Pavement Collection for Parking Lots and Airports
				Richard Fox-Ivey, Benoit Petitclerc, and John Laurent	LCMS 2 Crack Detection Improvement Achieved by Processing 1mm x 1mm Scans
				Greg White and Josh Beehag	Variability and Repeatability of Falling Weight Deflectometer Survey Results for Airport Pavement Management
	4-3	Continental C Lobby Level	PIARC PMS Session I – Pavement Management	Gerardo Flintsch and Margo Briessinck	Introduction to PIARC and Its Reports
				Kristina Bayraktarova and Christian Honeger	Pavement Data – A Valuable Asset in the Asset Management System
				Fernando Varela	Pavement Management Methodology on Multi-Lane Roads
				Curt Turgeon	Collection of Performance-Related Data during the Asphalt Paving Process
	4-4	PDR 2 3 rd Floor	PMS Implementation	Andy Mergenmeier	Improving the Quality of Pavement Surface Distress and Transverse Profile Data Collection and Analysis
				James Bryce and Gonzalo Rada	Timing of Preservation Treatments on Asphalt Concrete Pavements
				James Bryce	Using Optimization to Calculate the Effects of Deferred Maintenance
				Aditya Ramachandran	Data-Driven Decision-Making for Preserving Pavements in Maryland

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Thursday 6/9 (1:30 – 3:00)	5-1	Joliet 3 rd Floor	PMS Innovation	Jerry Daleiden	Comprehensive Pavement Assessment for True Pavement Management
				Yazan Abukhalil, Ahmad Alhasan, and Omar Smadi	Cross Asset Resource Allocation Framework for Pavement and Bridges in Iowa
				Aaron Gerber, Charles Pilson, and Christopher McGee	A New Way of Using Automated Pavement Data Collection for Pavement Management
	5-2	Astoria 3 rd Floor	FHWA Workshop on Resilient Pavements – Part 1	Tashia Clemons, Amir Golalipour, Ben Bowers, and Tara Cavalline	Workshop Agenda Available Online View Details
	5-3	Continental C Lobby Level	PMS Implementation	Kieran Feighan, Gerard O’Dea, Ray McGowan, and John McCarthy	The Irish Regional Roads Network – A Major Study of Pavement Condition and Works Requirements
				Fabián Patricio Díaz Muñoz, Fernando Varela Soto, Aleli Osorio-Lird, and Ariel Mamani Lazaro	Methodology for Cost-Benefit Analysis of Implementation and Operation of a Pavement Management System
				Ahmad Alhasan and Omar Smadi	Quantitative Risk Assessment of Pavement Performance Models and Predictions
				Carl Van Geem	Evaluating Current Structural Performance of Communal Roads for Pavement Management Purposes

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Thursday 6/9 (3:30 – 5:00)	6-1	Joliet 3 rd Floor	PMS Parameters (Deterioration, DST, etc.)	Zhongren Wang , Haiping Zhou, Venkata Mandapaka, and Lan Nguyen	An Evaluation of Caltrans Pavement Management Practice Using As-Built Database
				Pedro Sergios , Gonzalo Rada, and Jonathan Groeger	Development of Performance Model for HPMS Cracking Percent Metric
				Ray McGowan , Kieran J. Feighan, and Stephen Smyth	A Multi-Constraint Approach To Budget Optimisation on the Irish National Road Network
	6-2	Astoria 3 rd Floor	FHWA Workshop on Resilient Pavements – Part 2	Zsolt Boros and others	Workshop Agenda Available Online View Details
	6-3	Continental C Lobby Level	Distress Data	Douglas Frith , Dennis Morian, and Andy Mergenmeier	Historical Advancements in High Speed Distress Data Collection
				Mohammad Z. Bashar and Cristina Torres-Machi	Road Surface Condition Assessment Using High Resolution Satellite Imagery
Brian Mulry , Ray McGowan, Kieran Feighan, and Tom Casey				The Use of Laser Crack Measurement System (LCMS) to Characterize Texture in Hot-Rolled Asphalt Surface Course Material	

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Conference Agenda

Day 3 – Friday, June 10

- 7 am to 8 am** **Breakfast** – Continental A & B (Lobby Level)
- 8:30 to 10:30 am** **Concurrent Technical Session 7**
- 10:30 to 11 am** **Break** – Continental A & B (Lobby Level)
- 11 am to 12 pm** **Conference Closing Session** – Continental C (Lobby Level)
- 1:30 to 5 p.m.** **PIARC and AASHTO Meetings**

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Friday 6/10 (8:30 – 10:30)	7-1	Joliet 3 rd Floor	Local PMS	Margot Yapp, Shahram Misaghi, Sharlan Montgomery Dunn, and Sarah Fine	Pavement Management Helped the City of Oakland Get \$350 Million. Now What? A Case Study for Selecting Streets
				Abbas Kachwalla	Pavement Management Systems for Local Municipal Agencies State of Current Conditions and Practices
				Sen Vigneswaran and Ernesto Urbaez	Townsville City Council, From Condition Data to Informed Decisions Using PARMMS-Horizons Management Tool after Three Years of Implementation
				Abdallah Alhamdan and Inya Nlenanya	Pavement Condition Forecast for Local Roads Missing Age Information
	7-2	Astoria 3 rd Floor	PIARC PMS Session II – Big Data and Pavement Management	Gerardo Flintch	Big Data For Pavement Management – Challenges and Opportunities
				Mehis Leigri	PIARC’s Technical Committee 4.1’s Literature Review on Big Data
				Tim Massart and Jacopo Alaimo	Data Collection of the Future
				Leif Sjogren	BD-Pave (Big Data Pavement Management Initiative)
	7-3	Continental C Lobby Level	PMS: Sustainability and Resilience	Royce Greaves and Gareth McKay	Delivering Climate, Resilience, and Sustainability (CRS) Outcomes around the Globe
				Alondra Chamorro, Tomás Echaveguren, Eduardo Allen, Marta Contreras, Joaquín Dagá, Hernán de Solminihaç, and Natalia Nieto	Integrated Risk Management Framework for Road Networks Exposed to Natural Hazards
				Zsolt Boros and Filip Buček	Mechanical-Chemical Strengthened Base Course (MCSB-TPA) – A Green and Innovative Approach to a New Generation of Asphalt Pavement Construction
				Dalia Bannoura, Laith Tashman, and Louay Mohammad	Application of Sustainable Pavement Design in Jordan Using AASHTOWare Pavement ME Design Software
				Christian Stjernquist and Martin Wiström	FuelSave – A Pilot to Understand and Mitigate Traffic Carbon and Energy in Road Design and Asset Management