

## 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.

A draft agenda for the workshop is presented in the table below.

Duration	Topics	Speakers
<b>Part I: Agency Experiences With Sustainability, Resilience, and Equity in PMS</b>		
	<b>Workshop Introduction</b>	
1:00 PM	<ul style="list-style-type: none"> <li>Objectives</li> <li>Approach</li> </ul>	Katie Zimmerman, APTech
	<b>Considering Pavement Sustainability Concepts in Pavement Management</b>	
1:15 PM	<ul style="list-style-type: none"> <li>Introduction to pavement sustainability concepts</li> <li>U.S. experiences with incorporating sustainability into pavement management</li> <li>What's holding us back?</li> </ul>	Prashant Ram, APTech
	<b>Considering Resilience in Pavement Management</b>	
1:30 PM	<ul style="list-style-type: none"> <li>Vulnerability study overview</li> <li>Findings</li> <li>Consideration in pavement management project and treatment selection</li> <li>What's holding us back?</li> </ul>	Mark Woods, TNDOT
	<b>Considering Equity in Project Selection</b>	
1:45 PM	<ul style="list-style-type: none"> <li>Reasons for incorporating equity into investment decisions in Columbus, OH</li> <li>Current efforts to consider equity in project selection</li> <li>Future initiatives</li> <li>What's holding us back?</li> </ul>	Andrew Williams, City of Columbus, OH
2:00 PM	<b>Panel Questions/Discussion – What's Holding Us Back?</b>	
	<ul style="list-style-type: none"> <li>The three speakers will entertain questions related to the issues agencies face in considering environmental, social, and risk factors in pavement management.</li> </ul>	
2:15 PM	<b>Break</b>	

## Part II: Incorporating Sustainability, Resilience, and Equity into a PMS Framework

### Small Group Discussions: How can agencies incorporate sustainability, resilience, and equity into a PMS framework?

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| <b>2:30 PM</b> | <ul style="list-style-type: none"><li>• Participants will sit at round tables. Each table will be asked to discuss three prepared questions related to either sustainability, resilience, or equity</li><li>• One member from each group sits on the panel (in the next session)</li><li>• Panelists will use information from the group discussions to answer questions posed by facilitators (in the next session)</li></ul> | All |
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### Panel/Facilitated Discussion: They Way Forward

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| <b>3:15 PM</b> | <ul style="list-style-type: none"><li>• Discussion topics will revolve around the questions posed to the groups in the previous session</li><li>• Facilitators will pose questions (organized by topic area) to panelists and engage other workshop attendees.</li><li>• A notetaker will compile key takeaways and discussions for the workshop summary</li></ul> | All |
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**4:00 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.