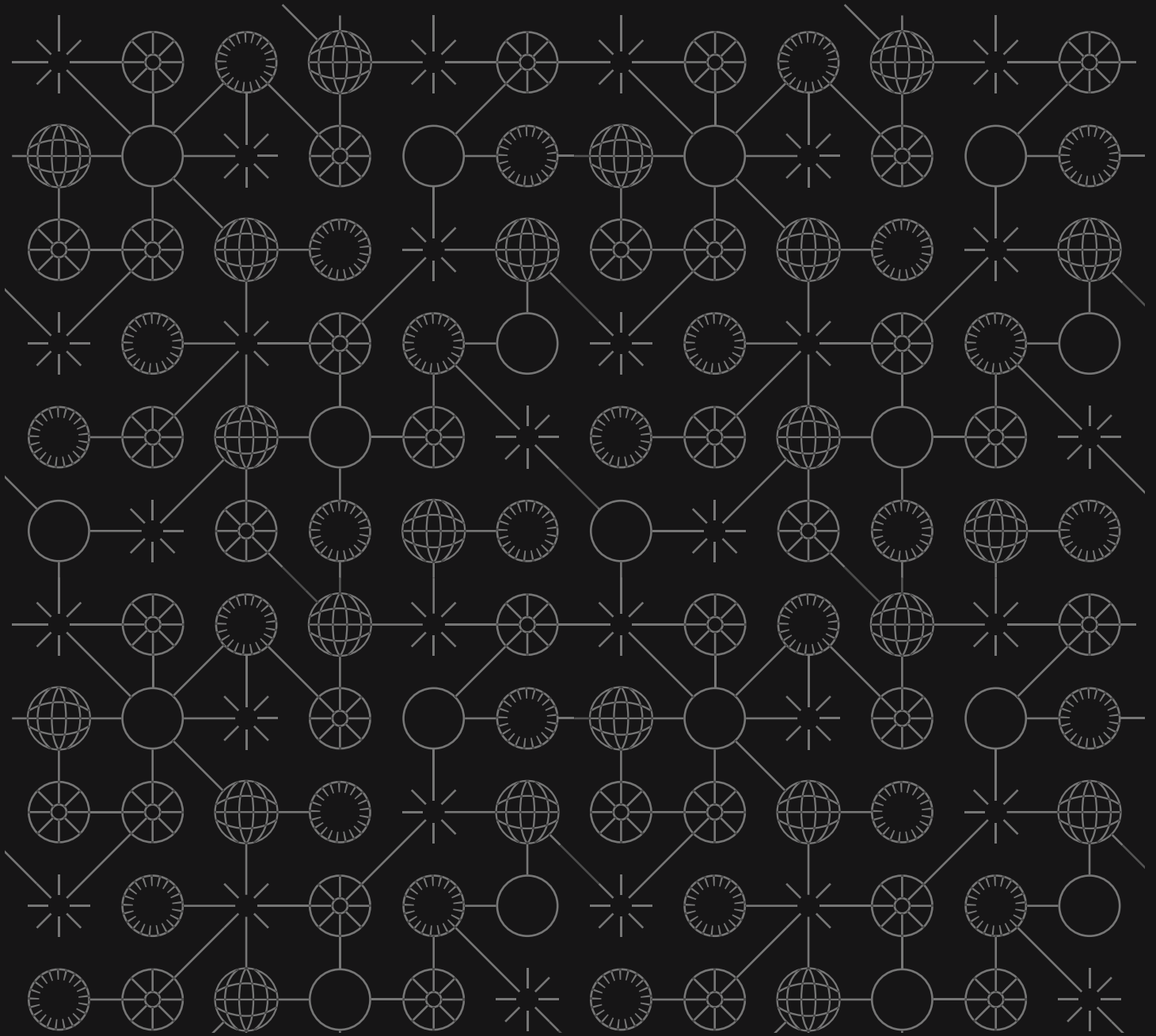


**DECEMBER 2025**



# Annual Review

**ASU** Ira A. Fulton Schools of  
**Engineering**

Arizona State University

Southwest Pavement Technology

The logo for the Ira A. Fulton Schools of Engineering at Arizona State University. It features the letters 'ASU' in a bold, maroon font with a yellow sunburst graphic behind the 'S'. To the right of 'ASU' is the text 'Ira A. Fulton Schools of Engineering' in a black, sans-serif font.

**ASU** Ira A. Fulton Schools of  
**Engineering**

**Arizona State University**

**Southwest Pavement Technology**



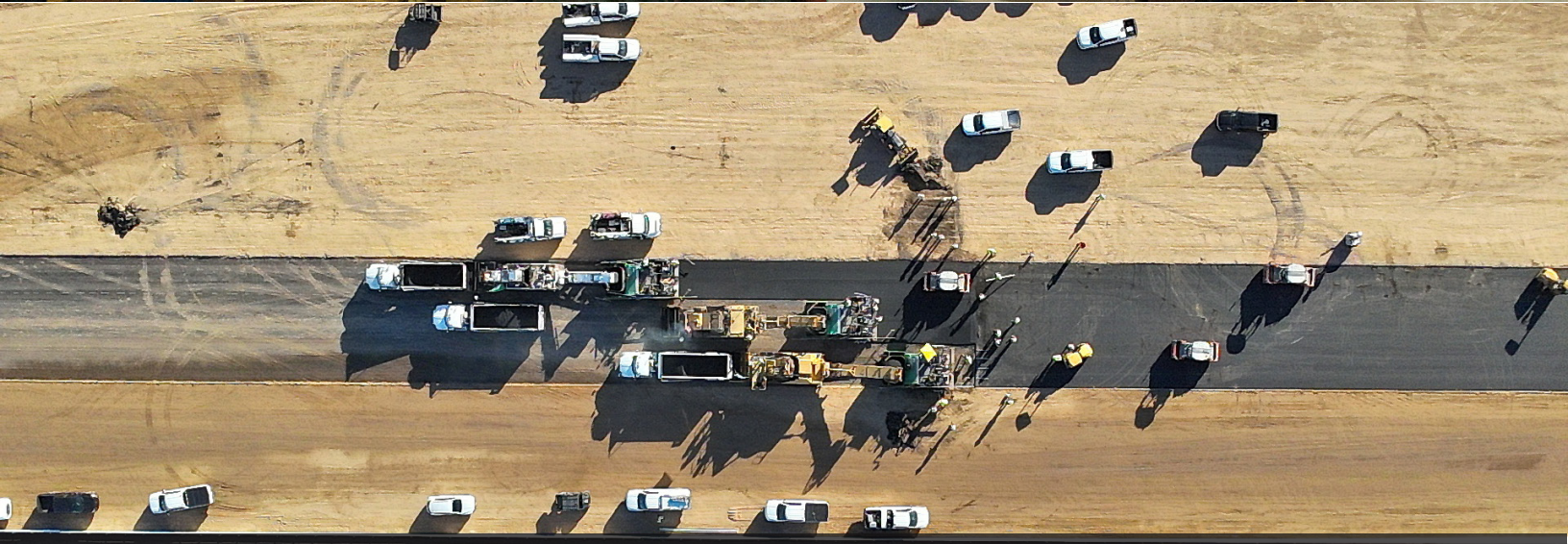
## ***Our Story and Mission***

The Southwest Pavement Technology Consortium (SWPT) is a collaborative platform to form a pavement alliance in the region and bridge the gap between university research and the industry. The idea of the program has grown from a grassroots effort and rapidly evolved to become an alliance of all pavement stakeholders in the region. Unlike many other pavement research centers in the United States in which the sole funding source is the state DOT, the SWPT was launched as a partnership of all stakeholders. Arizona State University's unique consortium setting allows for active participation and engagement of critical stakeholders and a sustainable future for the organization.

The SWPT supports the prioritization of projects and identify/design new infrastructure solutions that are safer, more cost effective, and more durable than the traditional approaches and will provide a talented and well-trained workforce to the industry. The SWPT will also be poised to provide scientifically robust solutions for the practical needs of stakeholders, and it will accelerate the pace of infrastructure innovation. New research frontiers can be effectively added to the research portfolio, including sustainable use of recycling; thermally efficient pavement surfaces; incorporation of resilient, innovative fibers and additive technologies; sustainable management of transportation assets; and advances in data science.



## **TECHNICAL WORKFORCE TRAINING**



## **STRATEGIC INFRASTRUCTURE RESEARCH**

## **A DATA AND COMMUNICATION HUB**





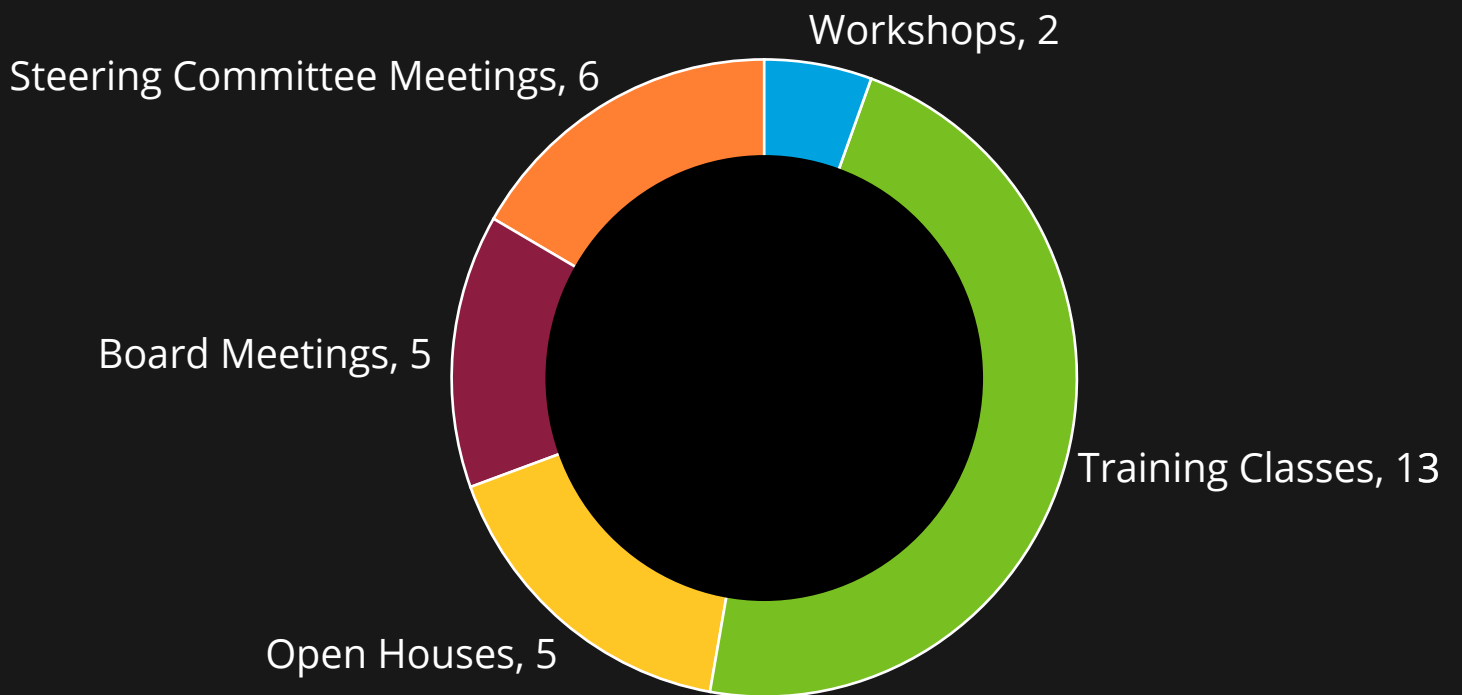
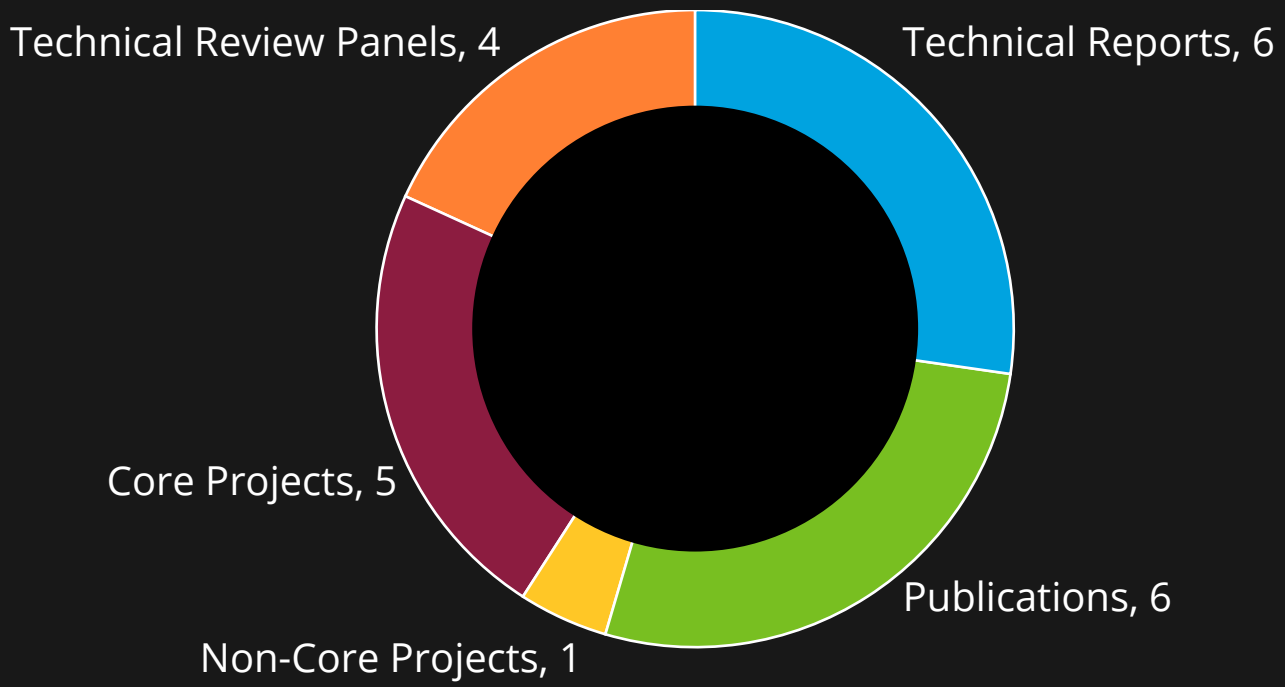
2025 AT A GLANCE

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# KEY ACCOMPLISHMENTS

Southwest Pavement Technology Consortium launched its official operations in January 2023 by eleven industrial members and one core agency member signing the agreement with ASU. The idea of the program has grown from a grassroots effort and rapidly evolved to become an alliance of all pavement stakeholders in the region. Our mission is to assist stakeholders by developing and adapting cost-effective and innovative pavement technologies and providing a talented and well-trained workforce.

The success and visibility of the consortium continued growing in 2025. New agency agreements were signed with City of Phoenix and City of Peoria. Talis Construction also joined the consortium in 2025 as a core industry member.



# OUR MEMBERS



## ADVISORY BOARD



**Greg Byres**

State Engineer  
Arizona DOT



**Jesse Gutierrez**

Director  
Maricopa County DOT



**Rubben Lolly**

Deputy Street Transportation Director  
City of Phoenix



**Steven Langner**

Director of Technical Services  
Vulcan Materials Company



**Robert B. McGennis**

Technical Manager  
HollyFrontier Sinclair



**Rolando Perez**

Chief Executive Officer  
ViaSun Corporation

**#21-1**

Arizona Pavement  
History

**#21-2**

A Comparative Assessment  
of Liquid Antistripping  
Agents and Mineral  
Admixtures in Asphalt Mix  
Designs in Arizona

**#21-03**

Baseline Characterization of  
Asphalt Concrete Mixtures  
and Practices in Arizona

**#23-1**

Assessment of Thermal And  
Durability Cracks in Asphalt  
Pavements

**#23-2**

Development of Asphalt  
Concrete Mixture Long-Term  
Aging Protocol

**#24-1**

A Sustainability and  
Performance Assessment  
of Pavement Preservation  
Strategies

# SWPT PROJECTS



## FIELD DEMONSTRATION OF INNOVATIVE AND DURABLE PAVEMENT STRATEGIES

Building upon the insights gained from our previous studies on wide cracking and aging, a second test site was constructed in the City of Mesa. The project was designed to prove that durable, long-lasting roads can be achieved through strategic engineering.

The research identified three critical “pillars” for pavement performance in Arizona’s climate. The Mesa test site was engineered from the ground up to optimize these variables: Optimized Volumetrics, Strategic Binder Selection, and Enhanced Density.

The test site features a ground up pavement constructed from a stabilized subgrade and aggregate base capped by five uniquely engineered asphalt mixes. These mixes were developed to provide Arizona agencies with a portfolio of practical strategies that prioritize both performance and cost. They cover a spectrum of binder grades for cracking resistance, include reclaimed asphalt pavement (RAP) for resource efficiency and cost, and promote compactibility during the paving operations for enhanced durability.



A close-up photograph of orange machinery, likely a road construction or maintenance machine. The image shows several thick grey cables bundled together, connected to various components. Below the cables are several orange rollers or supports. The background is a bright orange metal surface.

# PROJECT #24-1

## A SUSTAINABILITY ASSESSMENT OF PAVEMENT PRESERVATION STRATEGIES

### The Shift from New Pavements to Preservation

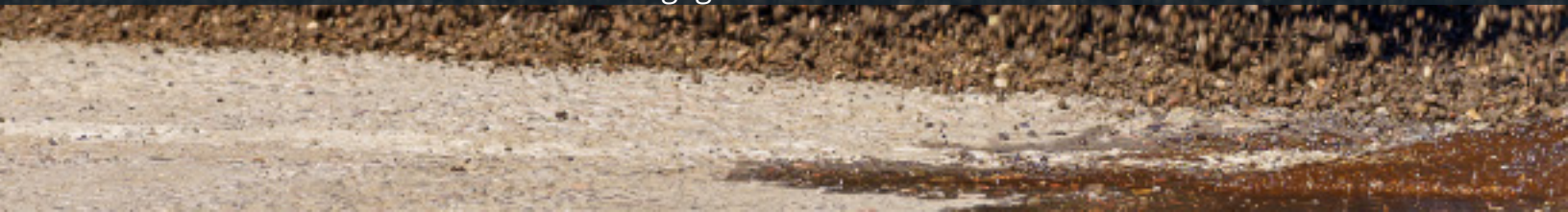
As Arizona's roadway infrastructure matures, state and local agencies are transitioning from high-cost reconstruction projects to proactive **Pavement Preservation**. The shift enables our agencies to extend the service life of existing assets, ultimately avoiding the massive capital expenditures required for total reconstruction.

### The Science of "Right Treatment, the Right Time"

The success of any preservation program depends on two critical variables: timing and treatment selection. This study analyzed current agency practices across Arizona to develop **Optimal Preservation Schedules**. These schedules serve as a data-driven roadmap to enhance "rideability"(user comfort) and maximize the structural longevity of diverse pavement types.

### Bridging the Gap: Tools for Decision-Makers

Technical excellence is only effective if it can be communicated to stakeholders. A primary deliverable of this study is the creation of user-friendly guidance materials and decision-support tools. These tools will help our members to quantify economic benefits, highlight sustainability, and engage their stakeholders.

A close-up photograph of an asphalt pavement surface, showing the texture and color of the road material.

# PROJECT #23-1

## ASSESSMENT OF THERMAL AND DURABILITY CRACKS IN ASPHALT PAVEMENTS IN THE SOUTHWEST



### Challenge: Wide Cracks in the Southwest Region

Wide cracks in asphalt pavements represent a major maintenance challenge for Arizona's transportation agencies. This study provides a comprehensive roadmap for mitigating this issue, moving from the identification of root causes to the implementation of high-performance, cost-effective pavement strategies.

### Forensic Investigation & Diagnostics

In collaboration with the partners of the consortium, the research team conducted a series of forensic site investigations. By analyzing sections of pavement exhibiting severe wide cracks, the team identified the primary drivers of wide cracks, most notably the extreme thermal cycles and oxidative aging unique to the Arizona climate.

### Performance-Based Mix Design Strategies

Leveraging the forensic data, [Durable Mix Design Strategies](#) were developed. These strategies were rigorously vetted using advanced laboratory testing protocols.

### Field Validation

To transition laboratory success to the field, a dedicated test section was constructed in the City of Mesa. This site features five experimental asphalt mixes, each engineered to validate a cost-effective, practical solution for statewide implementation.



# PROJECT #23-2

## DEVELOPMENT OF ASPHALT CONCRETE MIXTURE LONG-TERM AGING PROTOCOL FOR ARIZONA'S CLIMATIC CONDITIONS

### Challenge: Accelerated Aging of Pavements

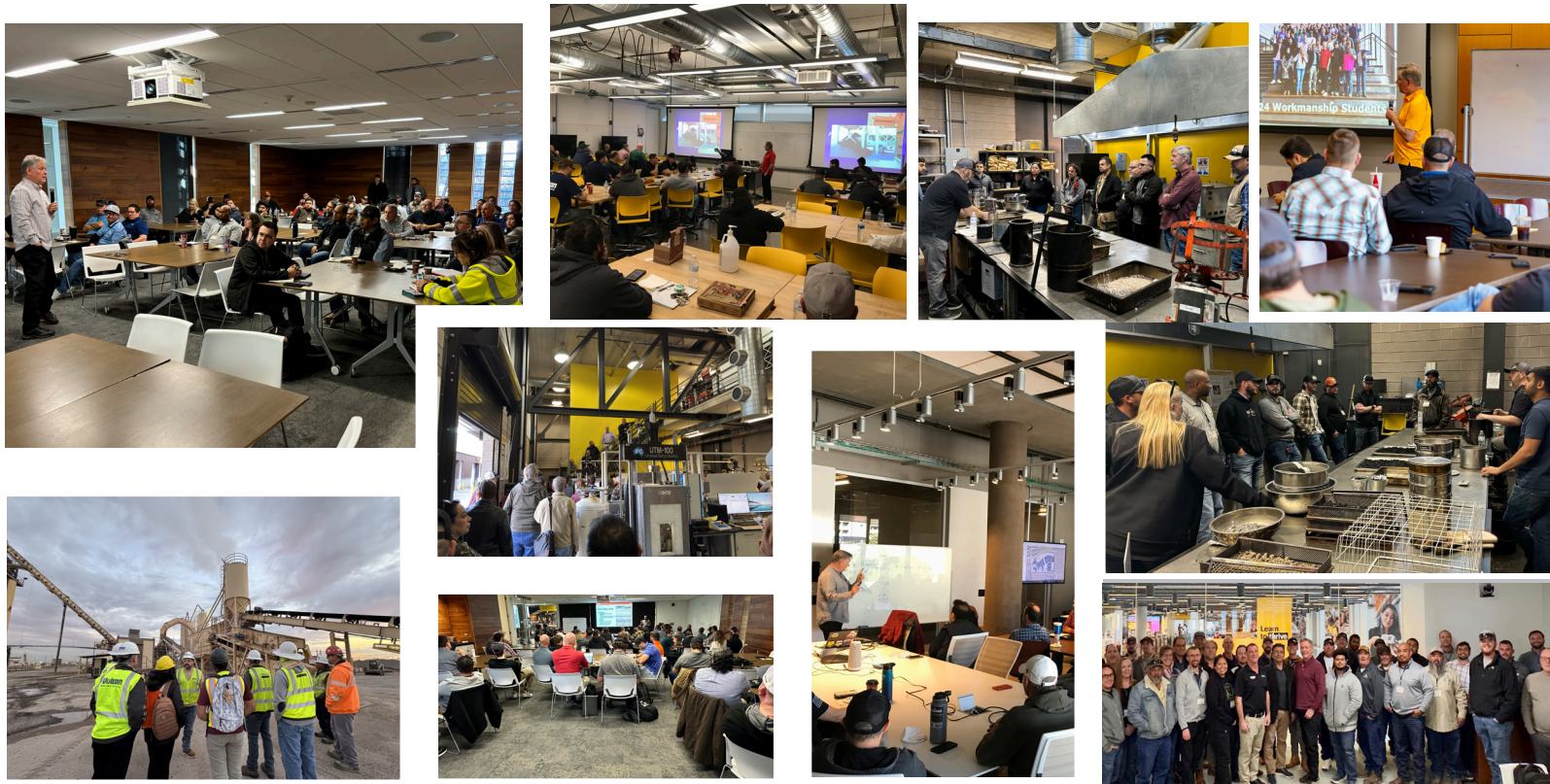
Arizona's extreme and prolonged summer heat accelerates the oxidation and hardening of asphalt binders, leading to rapid pavement brittleness and premature cracking.

### Capturing the Aging Mechanisms and Slowing Down the Process

The primary focus of this study was to quantify exactly how Arizona's unique climate degrades asphalt and to engineer practical strategies to slow down deterioration of pavements due to aging.

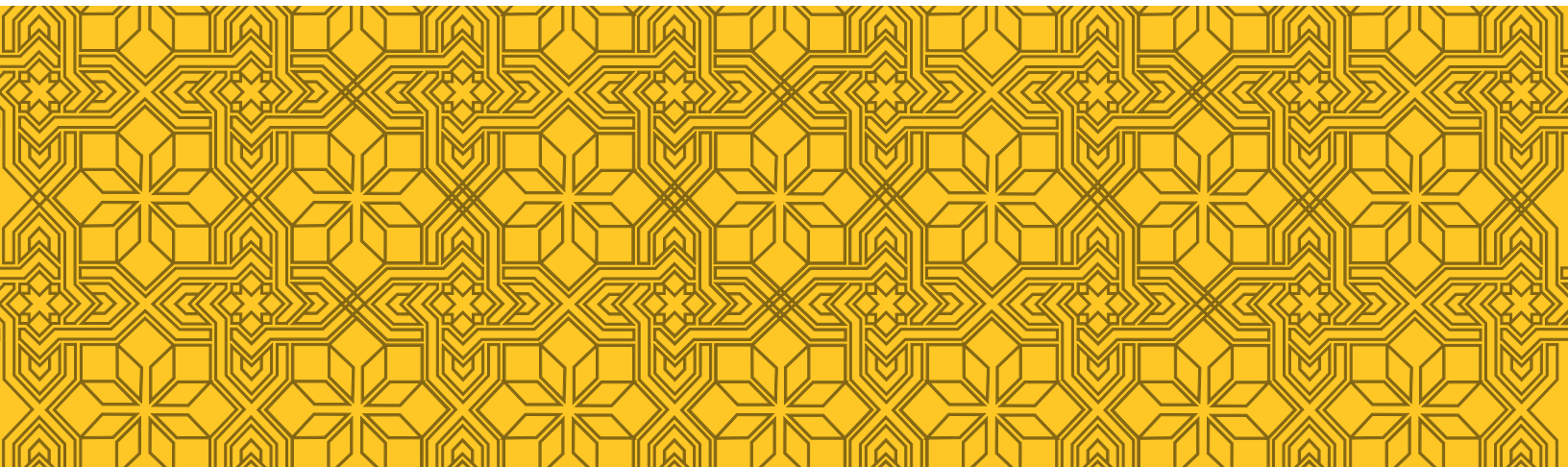
### Innovations and Field Implementation

A new laboratory long term aging protocol was developed tailored for Arizona's unique climatic conditions. The protocol was validated through a dedicated field test section constructed in the City of Mesa. The study demonstrated that proactive mitigation strategies, including higher in-place density and surface coatings, can significantly enhance pavement durability.



# 2025 Training Classes

*Our consortium completed January trainings in 2025 with classes focusing on asphalt mixture design, production, quality control, workmanship and maintenance and preservation topics. We finished our training in five days throughout January. We had more than 250 attendees representing our local industry, state and local transportation agencies, and students.*





**QC Manager Of The Year**



**Producer Of The Year**

## WINNERS OF THE 2025 **BEST IN ARIZONA** PAVEMENT AWARDS PROGRAM

The Southwest Pavement Technology Consortium and Arizona Pavement Materials Conference are proud to announce the winners of the 2025 Best in Arizona Awards. Held on November 19th, the celebration brought together industry professionals and community leaders to honor excellence in innovation and craftsmanship across Arizona's pavement industry. This year's project winners included ADOT, Pima and Pinal Counties, and the cities of Phoenix, Tucson, Mesa, Tempe, and Glendale. Special honors were also awarded to Alex Carter (QC Manager of the Year), Southwest Asphalt (Producer of the Year), and the inaugural D.O.T.T.I.E. award recipients, Greg Groneberg and the City of Mesa.





**USEFUL LINKS**

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