

WHAT'S THE NEXT PROBLEM WE SOLVE TOGETHER?

The next chapter of CAPRI is taking shape. **CAPRI-2** will bring highway agencies, industry, researchers, and other pavement stakeholders together to advance important asphalt pavement research and identify emerging challenges that deserve collective attention.

CAPRI-2 begins with strong momentum. More than 30 highway agencies have committed, bringing perspectives shaped by different climates, materials, specifications, construction practices, and pavement needs. Industry participation includes 29 partners who will contribute experience with materials, production, construction, technology and implementation. Researchers and academic partners bring technical expertise to investigate questions, evaluate solutions, and turn shared challenges into actionable research.

That range of experience is one of CAPRI's greatest strengths. Bringing different perspectives together can reveal common needs, reduce duplication of effort, and focus pooled resources and expertise on problems with national significance.

CAPRI-2 will also provide continuity for research and implementation efforts already underway. Research often answers one question while uncovering another, and laboratory and field experience can reveal new knowledge gaps. CAPRI-2 can keep that work moving while helping useful findings reach practice through technical guidance, CAPRI Chats, implementation resources, and other technology-transfer activities. **The goal is to turn what is learned into better practices and better pavements.**

At the same time, the CAPRI-2 agenda will remain member-driven. Participants will help identify and prioritize practical questions affecting their programs today and challenges emerging on the horizon.

What might those challenges look like? Perhaps it is workforce development and knowledge transfer as experienced pavement professionals retire and new technologies demand new skills. Maybe it is innovation and implementation, including better ways to evaluate promising products, materials, and technologies and move them into routine practice. Specifications may need to evolve alongside changing materials and test methods. Sustainability goals may raise new questions about recycled and local materials. And as the industry generates growing amounts of laboratory, production, construction, and pavement performance data, how might AI and other emerging digital tools help turn that information into better pavement decisions? These are not predetermined CAPRI-2 priorities. They are starting points for a larger conversation.

CAPRI-2 brings members together to identify asphalt pavement challenges and pursue solutions through shared expertise. What challenge are you facing that CAPRI could help solve? Start with the problem, and let's find the solution together.



**CAPRI group photo at the Spring
2026 Annual Meeting in
Savannah, GA.**

SUBCOMMITTEE HIGHLIGHTS

Here's a look at what each CAPRI subcommittee is bringing to the Fall Meeting and what members can look forward to discussing in Columbus.



TECH TRANSFER

The Technology Transfer Subcommittee plans to use its breakouts to get research into practitioners' hands faster and keep members connected. Top priorities: refining the CAPRI research dashboard so members have a live view of consortium work, and proposing new website resource pages with practical implementation guidance. Expect the next round of CAPRI Chats webinars, plus ways to reach wider audiences. Every member is invited to help shape the work.



TECH EVALUATION

The Technology Evaluation Subcommittee will use its Columbus sessions to discuss ongoing CAPRI research and current technical issues. The first session brings project updates and an open forum, including IDEAL-CT sensitivity and risk assessment plus member-submitted topics. The second focuses on the CAPRI project evaluating reheating and aging adjustment factors for BMD in quality assurance, with updates on data, findings, and next steps. Members are encouraged to bring technical questions.



CRITICAL ISSUES

The Critical Issues Subcommittee uses its Columbus breakout to review results of the August Critical Issues Topics Poll. Sessions will identify the highest-priority topics, discuss existing and proposed research, and decide whether new research statements or projects are needed—with top issues potentially recommended to the CAPRI Executive Committee. Members will also welcome newcomers, meet the new subcommittee chair, and review the survey process.



RESEARCH ROADMAP

The Research Roadmap Subcommittee turns scattered ideas into funded CAPRI projects by gathering and prioritizing research needs. Columbus brings a full agenda: Elie Hajj on a synthesis for incorporating BMD into production, Ilker Boz on a carbonate aggregate problem statement, and Stephane Charmot with two, quantifying RAP binder mobilization and developing faster lab aging procedures. Come ready to question, prioritize, and champion the projects that move our industry forward.



CURRENT RESEARCH WITH CAPRI

Click or scan the QR code to visit the Research Dashboard and read more about CAPRI's current active projects.

- **Validation of Short- and Long-Term Oven Aging Lab Procedures**
- **Evaluation of Reheating and Aging Adjustment Factors for BMD in QA**
- **A Synthesis of Approaches Used to Incorporate Balanced Mix Design Testing into Production**



Balanced Mix Design with Absorptive Aggregates: Challenges & Solutions

By: Zane Hartzog, P.E., and Nam Tran, Ph.D., P.E., National Center for Asphalt Technology

Economics typically dictate that pavements must be constructed using locally available aggregates, in some regions those aggregates are highly absorptive. When aggregates absorb asphalt during production, storage, and hauling, designers typically compensate by adding binder to meet Superpave air-void targets. That keeps the mix compactable, but it doesn't guarantee the cracking and rutting resistance that the traveling public needs and Balanced Mix Design (BMD) now demands, and variable silo and haul times can leave one part of a project binder-rich and another binder-starved.

This CAPRI-sponsored study set out to quantify how a highly absorptive aggregate affects effective binder content and BMD performance, and to test whether three readily available technologies can offset the issue.

The team evaluated two mix designs with no recycled material: one with a low-absorption dolomite (0.86%) and one with a highly absorptive gravel (2.94%). Both used ALDOT's common PG 67-22, with an SBS-modified PG 76-22 for the polymer group.

Each mix was tested using IDEAL-CT for cracking, IDEAL-RT for rutting and the Hamburg test for rutting and moisture under unaged and short-term-aged conditions.

Under long-term-aged conditions, simulating roughly eight years of South Alabama field aging, only IDEAL-CT was performed.

Three mitigation strategies were evaluated on the absorptive mix: a chemical warm-mix additive used at reduced mixing and compaction temperatures, SBS polymer modification and 1% dry hydrated lime.

The Hamburg results carried an important caveat. The gravel used in the study was highly susceptible to moisture damage, so stripping rather than plasticity drove failure. No specimen set maintained less than 12.5 mm of rutting for 20,000 passes. Additional testing with a more angular absorptive aggregate that is less prone to stripping could help better determine how these treatments affect rutting resistance.

The study also identified a potential issue with the long-term aging protocol for warm-mix, absorptive-aggregate mixtures. The long-term aging temperature exceeded the warm-mix short-term aging temperature, resulting in anomalous absorption behavior and raising questions about whether the 20-hour long-term protocol is appropriate for these mixtures.

KEY FINDINGS & WHY IT MATTERS



ABSORPTION

All three mitigation strategies reduced absorption effects, but none matched the benefit

of using a less absorptive aggregate. Warm mix showed the greatest reduction under short-term aging, while lime and polymer remained effective under long-term aging.



CRACKING

All three treatments improved cracking resistance relative to the untreated absorptive

mix under unaged and short-term-aged conditions. After long-term aging, polymer and hydrated lime increased CT_{Index} by 50.0% and 48.9%, respectively, compared with the untreated absorptive mix.



PERFORMANCE

Polymer was the only treatment to improve all measured properties and delivered the best

rutting resistance among the mitigation strategies evaluated. In the Hamburg test, the highly moisture-susceptible gravel caused stripping-driven failure across all mixtures, but polymer performed best overall by offering the strongest resistance to deformation.

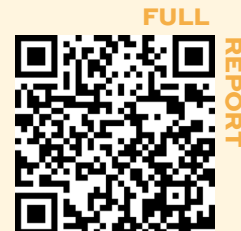


TAKEAWAY

Adding binder alone is not enough to solve the performance challenges of highly

absorptive aggregates. Polymer modification provided the most complete improvement across the measured properties, while lime and warm mix also offered benefits. Even so, material selection remains the most important factor.

Go deeper into this research by scanning or clicking the QR code.



FULL
REPORT



UPCOMING EVENTS

**APR.
2027**

Spring Meeting

Indianapolis, IN.

*Registration details
coming soon!*



CAPRI Chats

RESEARCH CONVERSATIONS
FOR REAL WORLD IMPACT

Watch Recent CAPRI Chats

Explore past CAPRI Chats webinars featuring industry experts and timely topics on research on our website.
capriasphalt.us/webinars



CAPRI FORUM

Q:

Which of the recently completed CAPRI research projects will be the most impactful when it is implemented?

Q:

Which of the ongoing CAPRI projects is of the most interest to you?

Q:

What existing research has been completed that you would like to see implemented quicker?



Let us know!

Scan or click the QR code to view the response options and cast your selections.



SUBMIT

RESPONSE



MEMBER SPOTLIGHT

Jason Blomberg has been with the Missouri Department of Transportation (MoDOT) for 28 years and is currently working part-time as an engineering professional for MoDOT. He has served as Chair for the Technical Evaluation Sub-committee since the beginning of CAPRI and finished his chair leadership in 2025. His leadership helped kick-off several research projects to advance innovations in asphalt pavements.

“Due to the collaboration between state agencies, industry, and research entities, CAPRI has brought many innovative asphalt technologies up to the forefront for practical implementation. CAPRI has been an incredible resource for quick action research findings that can immediately be used to move forward with new technologies, and I feel grateful to be a part of a forward-thinking group within CAPRI.”

