



ASPHALT | INNOVATE | ENLIGHTEN | IMPLEMENT

The background of the newsletter cover is a photograph of a winding asphalt road through a desert landscape. The road curves from the foreground into the distance, flanked by dry vegetation and shrubs. In the far distance, snow-capped mountains are visible under a blue sky with scattered white clouds. A large, semi-transparent 'AIEI' logo is overlaid on the center of the image, serving as a backdrop for the text.

AIEI NEWSLETTER | JANUARY 2025

QUARTER ONE

MESSAGE FROM THE PROGRAM MANAGER

Progress and Focus for Year 2

As we advance into Year 2 of the AIEI Program, I'm excited to share updates on our progress and focus areas. Our efforts remain focused on innovation, sustainability, and practical solutions to meet the evolving needs of the asphalt transportation industry.

A major highlight is the Low Carbon Transportation Materials (LCTM) Grants Program. In November, FHWA announced the award of nearly \$1.2 billion in LCTM grants to 39 State Departments of Transportation (DOTs). These funds will empower States to develop and implement processes for qualifying, verifying, and utilizing LCTM in Federal-aid construction projects. Key activities include benchmarking environmental impacts, refining acceptance procedures, and updating specifications to integrate LCTM. For a full list of grant recipients and updates, follow the link to visit the LCTM Website: https://www.fhwa.dot.gov/lowcarbon/statedotgrants_fy22.cfm

In Year 2, AIEI continues to lead impactful implementation efforts in asphalt, with approved Statements of Work (SOWs) addressing:

- **Effective Practices for Use of Recycling Agents.**
- **Proven Strategies for High RAP Asphalt Mixtures.**
- **In-Place Recycling Quality Assurance Workshops.**
- **Benefits of Balanced Asphalt Mixture Designs.**
- **Carbon Credits Integration in Life-Cycle Cost Analysis of Asphalt Pavements.**

These initiatives, partially funded through the Inflation Reduction Act (IRA), are designed to meet industry challenges while promoting environmental stewardship and pavement longevity.

As of today, the AIEI has made significant efforts in supporting the advancement of Balanced Mix Design (BMD) practices across the nation. To date, we have successfully completed 24 BMD implementation workshops, engaging nearly 900 participants from across the country. In addition, we have released 20 webinars, attracting over 2,000 live participants and nearly 5,600 total visits.

The AIEI has also developed valuable instructional resources, including the Asphalt Mixture Performance Tester (AMPT) and the BMD Asphalt Performance Testing Video Series, which have collectively garnered over 22,000 views. You can access these resources on the University of Nevada-Reno (UNR) website by following this link: <https://www.unr.edu/wrsc/asphalt/dapt-publications>

Furthering collaboration, the AIEI facilitated 6 regional BMD peer exchanges and 1 lead states peer exchange, collectively involving participants from 46 State DOTs. These efforts are instrumental in sharing knowledge, fostering innovation, and driving improvements in asphalt pavement performance.

As we move forward, I encourage you to stay engaged with the AIEI program by participating in our webinars and peer exchanges, leveraging our products, and applying the acquired knowledge to advance innovative asphalt technologies. Together, we can make meaningful progress toward a more sustainable future for asphalt pavements.

Thank you for your continued dedication and support for AIEI's mission.



Elie Y. Hajj, Ph.D.

LOW CARBON TRANSPORTATION MATERIALS BREAKING NEWS!

Fostering Economic Growth and Sustainability through Low-Carbon Transportation Materials Nam Tran, AIEI Work Plan Coordinator and NCAT Research Professor

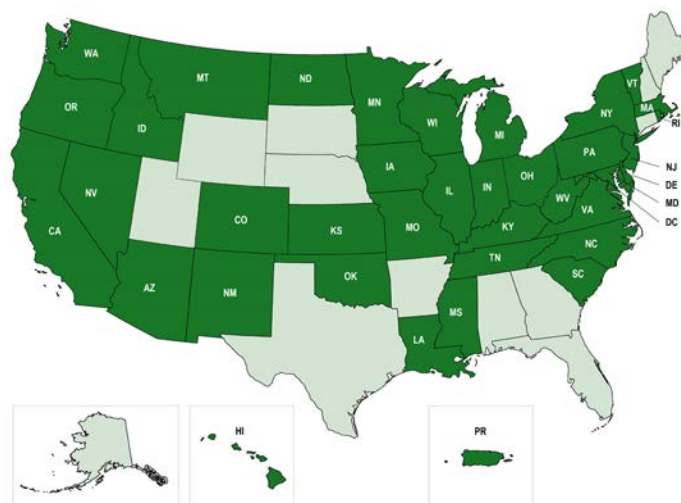
The Federal Highway Administration (FHWA) is leading the Low-Carbon Transportation Materials (LCTM) Grants Program, which aims to meet sustainability goals while enhancing the competitiveness of American industries. Funded through the Inflation Reduction Act, this program encourages the use of innovative, low-carbon construction materials—including asphalt, concrete, steel, and glass—across infrastructure projects nationwide.

In 2024, nearly \$1.2 billion in funding was awarded to 39 State Departments of Transportation (DOTs) to support state-led infrastructure initiatives. This allows states to prioritize projects that meet local needs while contributing to national sustainability objectives. The funding also emphasizes a commitment to controlling costs, improving efficiency, and creating quality jobs across various sectors, including manufacturing and construction.

Additionally, the LCTM program allocates \$800 million for non-state entities, such as metropolitan planning organizations, local governments, tribal governments, and Federal Lands Management Agencies. This expanded focus promotes local-level innovation, driving economic opportunities and ensuring that smaller communities and regions can actively participate in sustainable infrastructure development.

The program is a bipartisan effort that balances environmental goals with economic growth. By incentivizing the use of low-carbon materials, the program fosters clean manufacturing, enhances U.S. industrial competitiveness, and positions American businesses as global leaders in sustainable infrastructure solutions.

The LCTM program demonstrates how infrastructure initiatives can promote sustainability, enhance the economy, and foster the innovation of American industries.



Low-Carbon Transportation Materials Grants Program
State DOT Grant Award Recipients (FY22 Funding)

YEAR 2 SCOPES OF WORK (SOW)

A.2.1 Jhony Habbouche | Documenting Practices for the Use of Recycling Agents in Asphalt Mixtures

Objective: *This project aims to support DOTs in the effective use of recycling agents (RAs) in asphalt mixtures containing recycled materials. It will synthesize lessons learned, best practices, and limitations related to RAs, building on previous studies, to guide DOTs in enhancing binder performance and longevity. Tasks include reviewing relevant literature, conducting virtual visits with DOTs using RAs, documenting implementation practices and challenges, and identifying strategies for improved RA integration. The work will include a Tech Brief, presentation, and webinar to share findings, with progress tracked through material engagement and training participation.*

B.1.2 Adam Hand | Tech Snapshot on Strategies for Using High RAP Mixtures

Objective: *This project aims to develop a Tech Snapshot to guide DOTs on implementing high RAP asphalt mixtures in a staged approach, focusing on sustainability and performance. It will distill key techniques from the FHWA-HIF-22-003 report, introduce the concept of Reclaimed Binder Availability (RBA), and outline methods like grade bumping and corrective optimum asphalt content (COAC) to enhance durability. The work includes condensing the FHWA report, adding RBA considerations, and developing a marketing 1-Pager. At its conclusion, a concise, accessible Tech Snapshot and marketing document to support DOTs in adopting high RAP mixtures.*

B.3.2 Jason Wielinski | CIR/CCPR Quality Assurance Workshop

Objective: *This project focuses on developing a workshop to improve Quality Assurance (QA) practices for Cold In-place Recycling (CIR) and Cold Central Plant Recycling (CCPR) asphalt pavement techniques. The workshop will cover key QA procedures, construction methods, and acceptance criteria, using real-world examples from multiple projects across multiple states. Initial tasks include reviewing current QA standards, gathering field demonstrations, and creating a pilot workshop for feedback. The final workshop will educate DOT and industry stakeholders, promoting standardized QA practices for CIR and CCPR pavements.*

C.1.5 Elie Hajj | Documenting Benefits of Balanced Mix Design of Asphalt Mixtures

Objective: *This project will develop a Tech Brief summarizing the benefits of implementing Balanced Mix Design (BMD) for asphalt mixtures, using case studies from state DOTs to showcase its advantages in pavement performance and cost savings. Key tasks include reviewing existing studies, identifying relevant case studies, gathering quantitative performance data, and preparing a Tech Brief. The work from this project will support wider BMD adoption by illustrating its effectiveness and helping standardize best practices across the industry.*

YEAR 2 SCOPES OF WORK (SOW)

C.4.1 **Nam Tran | Quality Assurance Practices for Validation and Incentives**

Objective: *This project will focus on two quality assurance (QA) efforts by supporting state DOTs and contractors in validating quality control (QC) data and implementing incentive programs effectively. It will compile information on validation processes and incentive programs from various states, analyzing advantages and drawbacks, particularly of the F-test and t-test methods for QC data. This work includes two Tech Briefs summarizing best practices for data validation and incentive programs, with supporting training materials, webinar, and one-pagers. These resources will assist DOTs in adopting practices that improve construction quality while balancing costs.*

C.5.2 **Travis Walbeck | Thick Lift Paving**

Objective: *This project will support DOTs and contractors in understanding and implementing thick lift paving, a method offering durability and cost efficiency, particularly valuable in rapid road repairs after natural disasters or where traffic interruptions have greater impacts. It will compile case studies, project data, and existing specifications, and develop training materials and technical resources to share best practices and benefits. The work will produce presentations, a video overview, Tech Briefs, and specification language examples for adoption by interested agencies.*

C.5.3 **Amma Agbedor | Examples of State Practices for Improving Joint Performance**

Objective: *This project aims to enhance the performance of asphalt pavement longitudinal joints (LJs), which are prone to early deterioration. Through literature review and virtual consultations with selected State DOTs, the study will document effective practices in specification, construction, and quality control to improve LJ durability. The project will provide a Tech Brief, training material, and a webinar to share findings and promote adoption of best practices. These resources will provide practical examples from DOTs that have successfully implemented innovations in LJ construction, contributing to longer-lasting pavements.*

BALANCED MIX DESIGN WEBINAR SERIES

The AIEI team will present its Balanced Mix Design (BMD) webinar series starting in February this year. This series consists of five sessions hosted by Tim Aschenbrener and Derek Nener-Plante of FHWA and AEIE Program Manager Elie Hajj. They will discuss important items learned for efforts to advance BMD nationally in recent years.

Topics focus on BMD implementation tasks that will address areas cited as challenges in recent peer exchanges.



Tim Aschenbrener



Derek Nener-Plante



Elie Y. Hajj, Ph.D.

FEBRUARY 4, 2025 | IMPLEMENTATION PLAN

How to create an effective BMD implementation plan and why it's important. This includes essential actions with insights from lead states and actionable best practices.

Register Here: <https://unr.zoom.us/meeting/register/Re6iWwl1SVC8lwizluscSg>

MARCH 4, 2025 | VALIDATION FOR BMD: WHY IT'S IMPORTANT AND HOW TO DO IT

Learn the importance of validation to the responsible implementation of BMD. Examples of approaches used successfully by agencies.

Register Here: https://unr.zoom.us/meeting/register/UczvE6GNSbq_FGXEAySlGg

APRIL 7, 2025 | BMD SPECIMEN FABRICATION

Discussion of key items learned across the country regarding specimen fabrication for BMD. Learn considerations for lab operations to reduce variability and the latest on efforts to quantify effects of lag and down time on BMD results.

Register Here: <https://unr.zoom.us/meeting/register/Mln2wSU-TC-C81hlLm0HFA>

MAY 6, 2025 | BMD TESTING CONDITIONS: AGING & TEST TEMPERATURES

Discussion of two key considerations for BMD testing: mixture aging and testing temperature. Topics include need for aging for cracking evaluation, different aging methods, and the impact of test temperature on rutting evaluations

Register Here: https://unr.zoom.us/meeting/register/p_9t4b4-SU6JZ8EvLisl6A

JUNE 3, 2025 | BMD TESTING CONDITIONS: AGING & TEST TEMPERATURES

What to consider when incorporating BMD tests into production and quality assurance (QA). Many agencies start with implementing BMD into mix design specifications but also consider BMD in QA. Learn about important challenges and considerations for plans using BMD in QA.

Register Here: <https://unr.zoom.us/meeting/register/MfBuV7mATRCma6Qhs6KXmw>

Be sure to follow AIEI on LinkedIn (click on this link to access AIEI LinkedIn page: <https://www.linkedin.com/company/aiei-asphalt-innovate-enlighten-implement>) for webinar registration links and updates!

UPCOMING PRESENTATIONS BY TEAM MEMBERS

a. Tim Aschenbrener

Presentation for Arizona State University

January 22, 2025 | Tempe, AZ

Introduction and Development of the Hamburg Wheel-Track Test

**b. Elie Hajj, Tim Aschenbrener,
Derek Nener-Plante (C.1)**

**FHWA Balanced Mix Design Workshop:
Moving Forward with Implementation**

February 11 – 12, 2025 | Phoenix, AZ

c. Grover Allen

**South Carolina Asphalt Pavement
Association Winter Conference**

February 13, 2024 | Columbus, SC

High Polymer Success Stories

d. Tim Aschenbrener

Mid-Atlantic Quality Assurance Workshop

February 18-20, 2025 | Baltimore, MD

*Implementation of Asphalt Targeted Overlay
Pavement Solutions*

e. Dave Johnson (C.5.3)

Utah Asphalt Conference

February 19 – 20, 2025 | Salt Lake City, UT

Longitudinal Joint Best Practices

**f. Elie Hajj, Tim Aschenbrener,
Derek Nener-Plante (C.1)**

**FHWA Balanced Mix Design Workshop:
Moving Forward with Implementation**

Week of February 24, 2025 | Billings, MT

g. Adam Hand

**Asphalt Pavement Association of Michigan
Annual Paving Conference**

February 26, 2025 | Mount Pleasant, MI

Why RAP?

Recycling Agents: What to Know

h. Dave Johnson

Montana Asphalt Conference

February 27, 2025 | Helena, MT

The Importance of Compaction

i. Adam Hand

World of Asphalt

March 25 – 27 | St. Louis, MO

*Sustainable Asphalt Solutions: Best Practices in
In-Place Recycling (3/25/25)*

*Practical Guidelines for Using Recycling
Agents (3/25/25)*

j. Travis Walbeck

World of Asphalt

March 25 – 27 | St. Louis, MO

*Recycled Products in Pavement Preservation
(3/25/25)*

*Leveling Up Your Staff: Keys to Employee Training
Programs (3/26/25)*

RECAP OF RECENT EVENTS

Reed Ryan, Named Asphalt Institute President

Changing of the Guards at the Asphalt Institute: The start of 2025 saw a change in leadership at the Asphalt Institute as Peter Grass, who served as president for 24 years, retired. The incoming president of both the institute and the Asphalt Institute Foundation is Reed Ryan. Reed has a strong background from serving on staff for a senior US Senator working on infrastructure policy and funding. He then was the first executive director of the Utah Asphalt Paving Association, that he grew to become a very active organization.

Reed then took the executive director role at the Asphalt Pavement Alliance (APA) in 2024. His strong leadership, forward-thinking, and passion for the asphalt industry is a great fit.



Reed Ryan

Click on the link to view full article:

<https://www.asphaltmagazine.com/ryan-named-aipresident/>



Reed Ryan



Reed Ryan and Peter Grass

RECAP OF RECENT EVENTS

Balanced Mix Design Implementation Workshop Delivered to Pennsylvania | Derek Nener-Plante, Pavement and Materials Engineer, FHWA

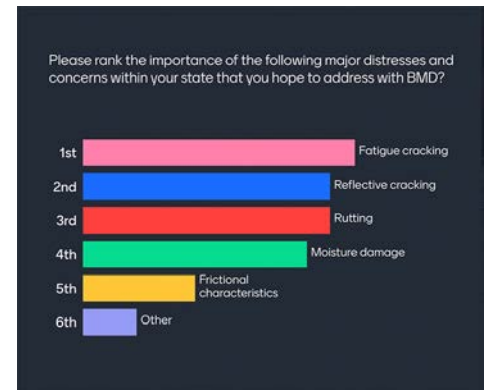
In December, members of the AIEI team delivered the Balanced Mix Design (BMD) Implementation Workshop to the Pennsylvania asphalt community, including representatives from the Pennsylvania Department of Transportation (PennDOT), Penn State University (PSU), and the Pennsylvania Asphalt Paving Association (PAPA). Hosted at PennDOT's central laboratory in Harrisburg, the workshop attracted over 40 attendees and was led by Tim Aschenbrener (FHWA), Derek Nener-Plante (FHWA), and Dr. Elie Hajj (UNR).

The workshop focused on strategies for agencies and contractors to implement BMD, which requires significant effort but yields long-term benefits. Attendees engaged in robust discussions, identifying key hurdles they may face while exploring solutions based on the experience of other agencies.

The workshop not only provides agencies and their asphalt communities a blueprint for tackling BMD implementation but also fosters discussions among participants. These discussions provide an understanding of the broader impact of BMD implementation and how it can benefit the entire community. The eight tasks for BMD implementation, outlined in a recent FHWA Tech Brief (*click on the link to access the tech brief*): <https://www.fhwa.dot.gov/pavement/asphalt/pubs/hif22048.pdf>, serves as a roadmap for initiating or advancing BMD implementation efforts.

To date, 24 BMD workshops have been completed nationwide, involving nearly 900 participants from agencies, industry, and academia. These workshops have successfully equipped agencies with essential knowledge and practical examples to support BMD implementation, drawing from in-depth case studies of key State DOTs.

Whether your state is at the early stages of considering BMD or looking to refine and optimize existing practices, these in-person workshops serve as a valuable resource for growth and learning. To learn how to schedule a workshop for your state, contact Derek Nener-Plante at derek.nenerplante@dot.gov. For further information, click on the link to access the BMD Virtual Workshop summary report: <https://scholarwolf.unr.edu/server/api/core/bitstreams/3b630a21-059c-4afb-b7b5-e06c03d2fb23/content>



Plot from interactive poll in the PA workshop showing cracking is their primary concern.



Photo from the PA workshop.

RECAP OF RECENT EVENTS

2024 BMD Implementation Workshop | Jon Young, HAPI Executive Director

An introductory workshop for agencies and industry was conducted by the workshop planning committee on October 29th and 30th. The committee members are Kristi Grilho (HDOT), Brandon Lima (HDOT), Fan Yin (NCAT), Tom Harman (NCAT), and Jon Young (HAPI).

Implementation co-chairs Jon Young and Kristi Grilho opened the workshop. Jon stated that the key to success is collaboration between agency and industry. Kristi followed by stating HDOT's goal is to implement BMD for non-standard mixes that relate to sustainability. She also noted that HDOT lab has similar challenges that a lot of the contractors may be concerned about with this implementation – limited lab space, budget, and manpower for the additional testing.

About twenty people attended from HDOT Highways Division, HDOT Harbors Division, County of Kauai, the UH College of Engineering, independent asphalt labs, and of course asphalt producers.

The remainder of the workshop was presented by Fan Yin and Tom Harman. Harman emphasized that the implementation process shown below is not a sprint, but a marathon that would likely take five to seven years to complete.

Topics covered by Fan and Tom included:

- What is Balanced Mix Design (BMD) and Why?
- BMD Implementation – National Perspective
- BMD Implementation Guide (*Click on the link to access the guide*):
<http://hawaiiasphalt.org/wp/wp-content/uploads/Guide-for-Implementing-BMD-Specifications-rev-40402023.pdf>
- Overview of the BMD Implementation Guide
- BMD Performance Tests for Mix Design / Acceptance
- BMD Shadow Projects
- Field Validation of BMD Test Criteria

The workshop ended with everyone having a chance to provide their comments about the workshop. Co-chair Jon Young stated that the implementation of BMD will be orderly, organized, and doable and that it will be done collaboratively between agency and industry. He acknowledges two key takeaways from the workshop:

1. BMD implementation is a marathon and not a sprint estimated implementation time is about seven years.
2. The key to success is collaboration – HDOT and HAPI are the co-chairs of the implementation.



Photo from the HAPI workshop.



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CATCH US ONLINE!

Tech Briefs: REOB + PPA Overview

REOB: To access the FHWA-HIF-23-043 2023 Tech Brief:

https://www.fhwa.dot.gov/pavement/recycling/apiprt/HIF_Rerefined_Engine_Oil_Bottoms_Report.pdf

PPA: To access the FHWA-HIF-23-005 2023 Tech Brief:

https://www.fhwa.dot.gov/pavement/asphalt/HIF_Polyphosphoric_Acid_Modification.pdf

To access DAPT Webinars:

<https://www.unr.edu/wrsc/asphalt/webinars>

To access the Cutback Report:

<https://scholarwolf.unr.edu/items/ea201ac9-9e6b-4583-bc5d-d8bdb830c976>



Connect with us on our [LinkedIn](#) page to keep current with all team member events and program progress!

For other cooperative agreements materials, information or technical assistance, please visit:

<https://www.fhwa.dot.gov/pavement/asphalt/coopmaterials/>

<https://www.unr.edu/wrsc/tools/asphalt>

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