

Innovations In FHWA's Pavements and Materials Program

68th Annual Asphalt Paving Conference

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U.S. Department of Transportation
Federal Highway Administration



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FHWA Agenda

- Key FHWA Agency Updates
- FHWA Asphalt Pavements Website
 - Current Asphalt Projects and Activities
- FHWA Pavements and Materials Programs
- FHWA Accelerating Innovation Programs
 - Every Day Counts (EDC)
 - Accelerating Innovation Demonstration (AID Demo)
 - Accelerated Implementation and Deployment of Pavement Technologies (AID-PT)



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FHWA Asphalt Pavements Website

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

Resources

- Current projects and activities
- Pavement materials information and publications
- FHWA Pavement & Materials email notification list

Source: FHWA

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Pavements

Design & Analysis Materials Quality Assurance Sustainability Pavement Management & Performance **Pavement & Materials**

Asphalt Concrete Aggregates Materials

Trailer In-place Pavement Density Analysis MATC


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Asphalt Pavements

The Asphalt Pavement Program is an integrated, national effort to improve the long-term performance and cost effectiveness of asphalt pavements. Managed by the Federal Highway Administration through partnerships with state highway agencies, industry and academia the program's primary goals are to reduce congestion, improve safety, and foster technology innovation. The program was established to develop and implement guidelines, methods, procedures, and other tools for use in asphalt pavement materials selection, mixture design, testing, construction, and quality control.


Current Projects and Activities

Asphalt Mixture Design and Balanced Mix Design



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Asphalt Pavement Design and Construction



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Email Notification

- [Join the FHWA Pavement & Materials Email List to receive updates about the Program](#)

More Information

- [Pavement Materials](#)
- [Pavement Publications](#)

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Current FHWA Asphalt Projects and Activities



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- Asphalt Mixture Design and Balanced Mix Design
- Asphalt Pavement Design and Construction
 - *FHWA Demonstration Project for Enhanced Durability through Increased In-place Pavement Density*
- Asphalt Binder
- Recycling
- Warm Mix Asphalt
- Quality Assurance for Asphalt
- Mobile Asphalt Technology Center
- Sustainability
- Targeted Overlay Pavement Solutions
- Cooperative Agreement Materials
- Videos
- Training

Pavement & Materials Program Overview

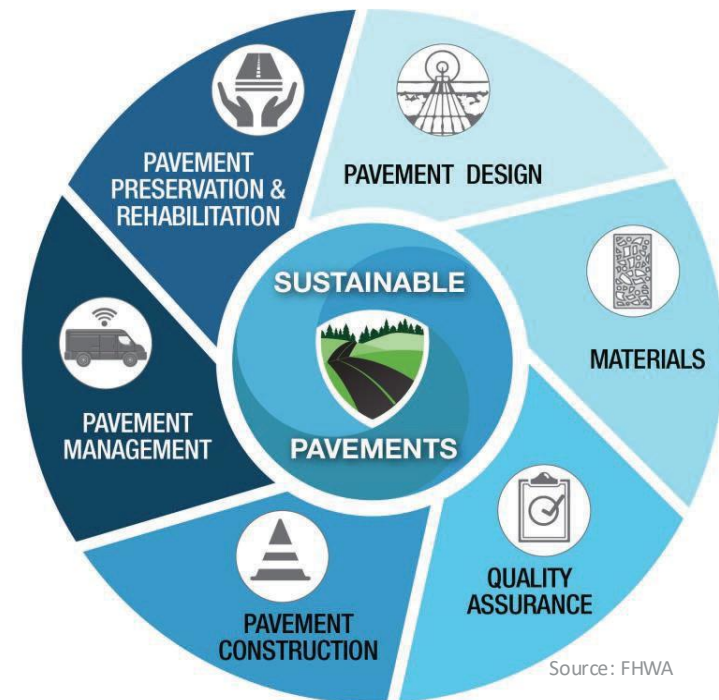


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Objectives

- Improve existing technologies and develop practices and tools for practitioners which improve longevity, safety, and sustainability of pavements.
- Address stakeholder needs by building strong research- and deployment-focused partnerships.
- Deliver technologies and tools to address stakeholder needs.

FHWA P&M Program Areas



FHWA Accelerating Innovation Programs



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- **Every Day Counts (EDC)**
 - Market-Ready, Proven, Underutilized Technologies
 - Stakeholder Driven
 - Well-established
- **Accelerating Innovation Demonstration (AID Demo)**
 - Incentive to accelerate implementation and adoption of innovation
 - Offsets risk of trying an innovation
- **Accelerated Implementation & Deployment of Pavement Technologies (AID-PT)**
 - Designated program focused on advancing pavement innovations

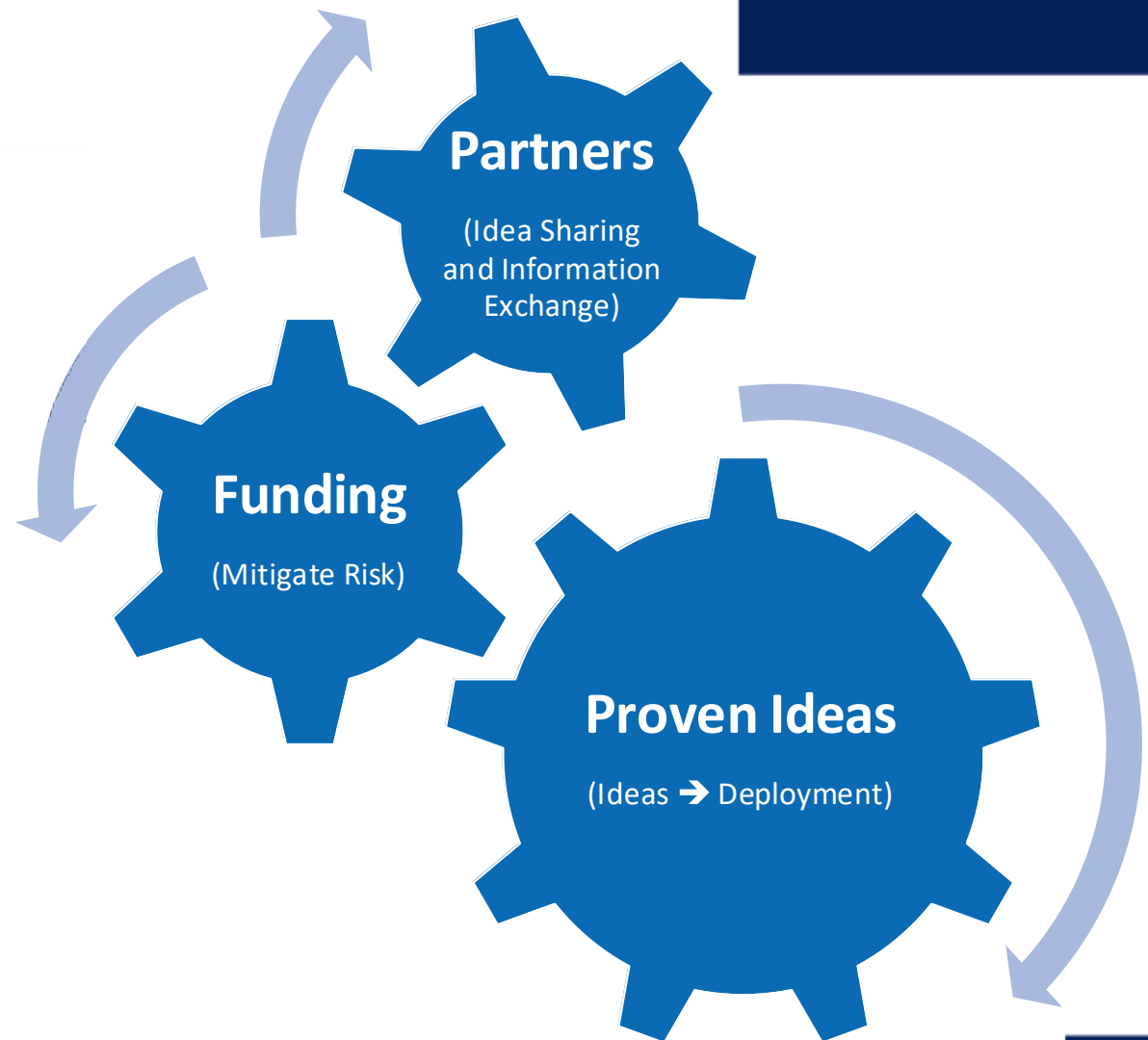
FHWA Innovation Programs



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FHWA Innovation Programs all work together...

- *Partners*
- *Funding*
- *Proven Ideas*





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FHWA Everyday Counts (EDC) Innovations for Pavements

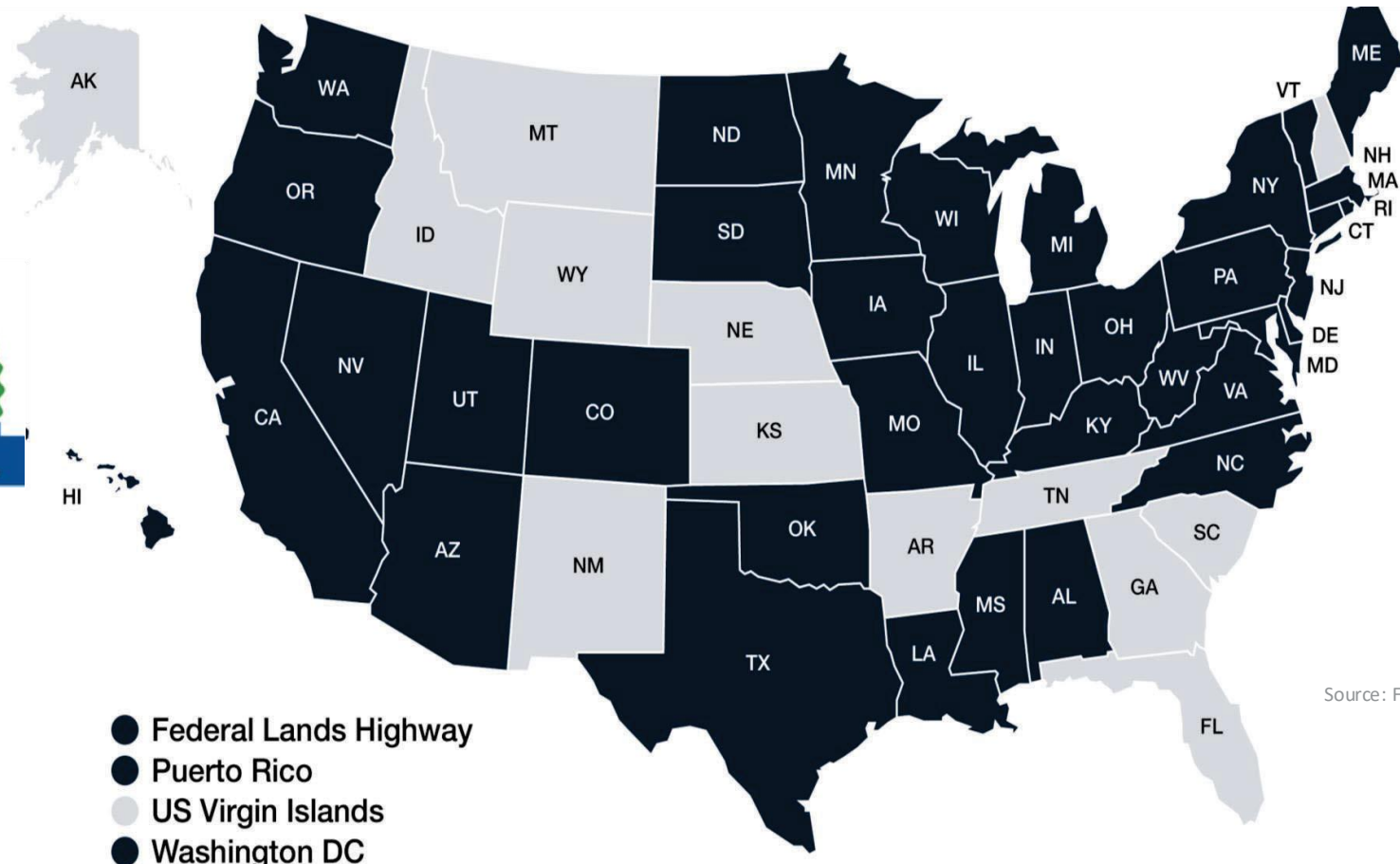
- **EDC-1: Warm Mix asphalt (WMA)** can be placed successfully in cooler weather versus HMA, extending the paving season and making night paving more feasible.
- **EDC-4: Pavement Preservation** treatments applied at the right time, on the right project, with quality materials and construction is a critical investment strategy for optimizing infrastructure performance.
- **EDC-6: Targeted Overlay Pavement Solutions (TOPS)** help ensure safer, longer-lasting roadways by employing innovative overlay procedures that improve pavement performance, lessen traffic impacts, and reduce the cost of pavement ownership.

And...EDC-7 Environmental Product Declarations (EPDs) for Sustainable Project Delivery & Climate Challenge

39 States, 2 local agencies & Federal Lands



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Source: FHWA



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Accelerated Innovation Deployment (AID) Demo Innovations

Total grant funds awarded: \$ 103,437,928

Total number of awards: 136

Pavement Related Innovations

- Cape Seals for Pavement Preservation
- Hot In-place Recycling
- Warm Mix Asphalt
- Compacted Concrete Pavement
- Fiberglass Reinforced Asphalt
- Pavement Geotextile



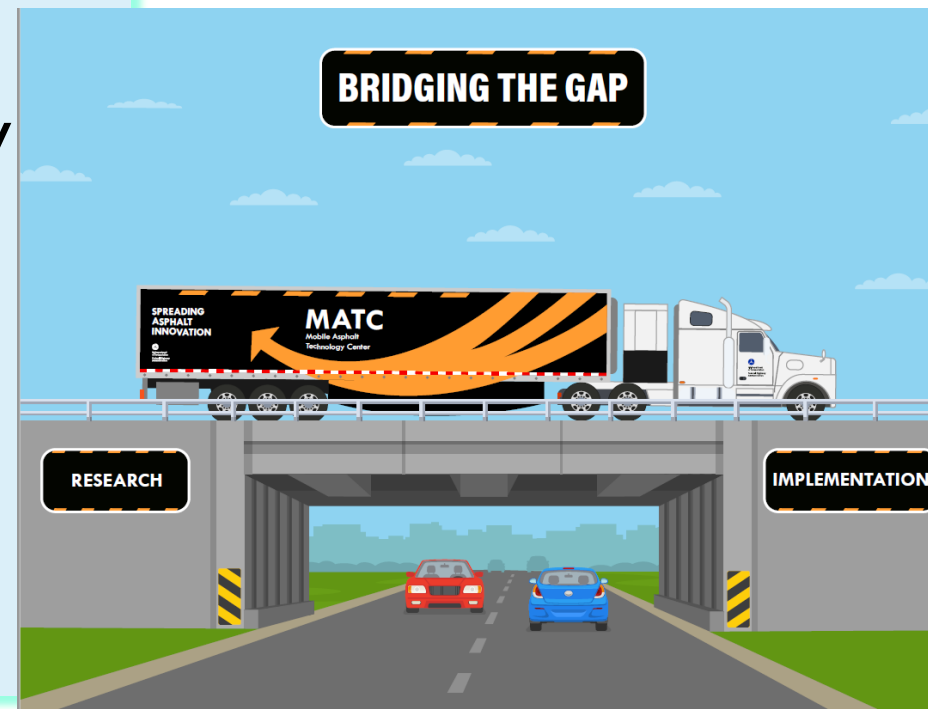
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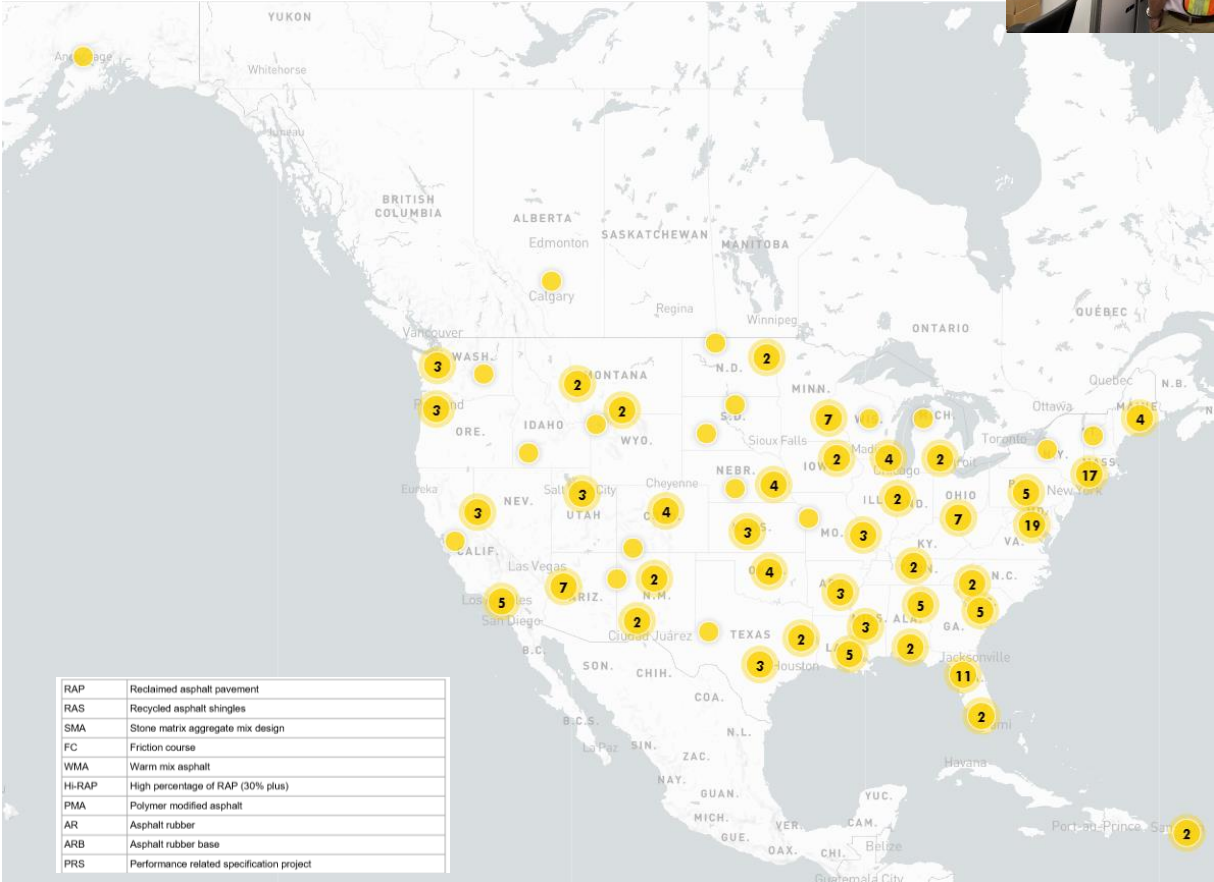
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Mobile Asphalt Technology Center (MATC) Program

- Implement new & under-used asphalt lab and field evaluation technologies
- Demonstrate benefits of performance specifications in both agency quality assurance (QA) programs & industry quality control (QC) applications
- Advance asphalt programs in US via assistance:
 - Specification reviews
 - Technical assistance
 - Training
 - Troubleshooting unique challenges



MATC Site Visits (178 visits since 1988)



4 Site Visits to
Kansas
between
1989 and 2022.


Current Key Asphalt Initiatives



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- **Balanced Mix Design**
 - Supporting efforts for responsible BMD implementation
 - Implementation workshops delivered to 23+ States (and counting!)
- **Higher Reclaimed Asphalt Pavement (RAP) Mixes**
 - TechBrief for responsible use of RAP
 - Lessons learned from successful agencies being combined for future workshop
 - Potential avenue to achieve lower embodied carbon mixtures

BMD workshops can be scheduled!



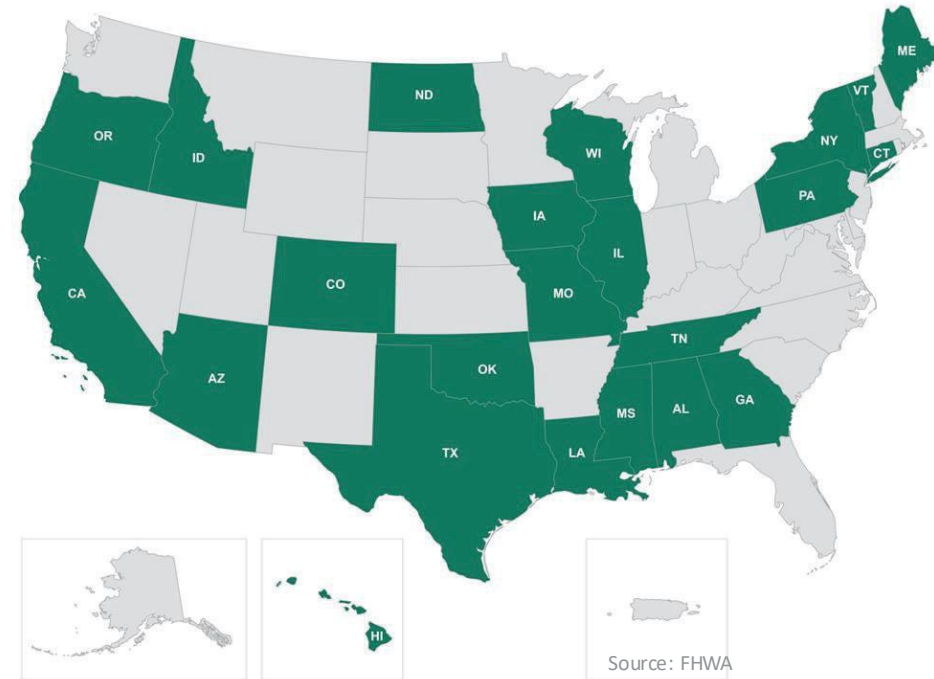
Accelerated Implementation & Deployment of Pavement Technologies (AIDPT) Program



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Demonstration to Advance New Pavement Technologies Pooled Fund Study

- Aims to implement and deploy pavement technologies, practices, performance, and benefits to advance management of pavement assets
- Provides funding and technical assistance in support of State DOT administered projects
- Topics include balance mix design, pavement management, pavement foundations, sustainability, and resilience



Low Carbon Transportation Materials Grants Program (LCTM)



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LCTM awards announced November 15, 2024.

- Kansas Department of Transportation received \$31.93 million grant award.

Website: www.fhwa.dot.gov/lowcarbon/

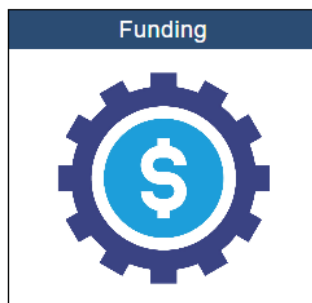
Email: FHWALowCarbonMaterials@dot.gov

Website resources:

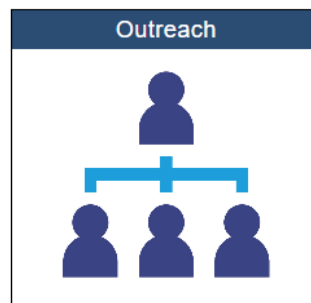
- ✓ Informational videos
- ✓ FAQs
- ✓ Fact Sheets
- ✓ Link to EPA Interim Determination
- ✓ Technical Resources



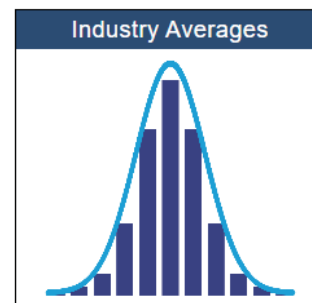
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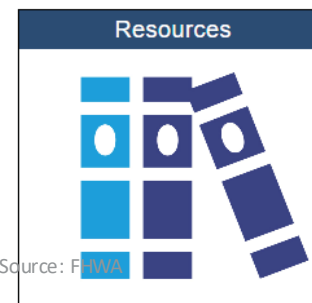
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Questions?

Thank You!