


Rolling Out!



**Mobile Asphalt Technology Center
(MATC)
&
Asphalt Binder and Mixture Laboratory –
Implementation & Delivery
(ABML-ID)**

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Senior Asphalt Pavement Engineer
Federal Highway Administration – HQ
Office of Preconstruction, Construction and Pavements

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Acronyms

- AASHTO: American Association of State Highway and Transportation Officials
- ABML-ID: Asphalt Binder and Mixture Laboratory – Implementation Division
- AIDPT: Accelerated Implementation and Deployment of Pavement Technologies
- AIMS: Aggregate Imaging Measurement System
- AMPT: Asphalt Mixture Performance Tester
- ASTM: American Society for Testing and Materials
- BMD: Balanced Mix Design
- DO: FHWA Division Office
- DPS: Density Profiling System
- ETG: Expert Task Group
- FLH: FHWA Federal Lands Highway
- FTIR: Fourier Transform Infrared Spectroscopy
- GTR: Ground Tire Rubber
- HICP: FHWA Office of Preconstruction, Construction, and Pavements
- I-FIT: Illinois Fatigue Test
- MATC: Mobile Asphalt Technology Center
- NCHRP: National Cooperative Highway Research Program
- NDE: Nondestructive Evaluation
- PEM: Performance Engineered Mixtures
- PMS: Pavement Management System
- PRS: Performance-Related Specifications
- QA: Quality Assurance
- R&D: Research & Development
- RC: FHWA Resource Center
- SAPA: State Asphalt Pavement Associations
- SCB: Semi-circular Bend
- SMA: Stone Matrix Asphalt
- SSR: Stress Sweep Rutting
- TFHRC: Turner-Fairbank Highway Research Center
- TxOT: Texas Overlay Text
- UAS: Unmanned Aerial Systems
- XRF: X-Ray Florescence

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Agenda

MATC

- Status
- Future Vision
- Activities

ABML-ID

- Background
- Process
- Project logistics

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Mobile Asphalt Technology Center (MATC)

Program Goal

Innovative technologies and practices are implemented by agencies and industry to provide longer-lasting, safer, sustainable, and more cost-effective asphalt pavements on our nation's highways

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MATC - MISSION

Bridging the Gap...

Research Implementation

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MATC – Team Members

- Leslie McCarthy**
Federal Program Manager
- Brendan Morris**
Project Manager
Asphalt Design, Production, Field Operations, Quality Control / Testing
- James Barker**
Senior Laboratory Technician
Electro-Mechanical Mixture Design / Testing
- Ram Veeraragavan**
Project Engineer
Data Analysis Performance Testing
- Samantha Grove**
Marketing Specialist
Marketing, Communications Social Media
- Terry Burnell**
Materials Lab Technician
Lab Operations / Materials Testing
- Otto Arrieta-Cardenas**
Field Technician
Field Operations / Field Testing
- Michael Huner**
Subject Matter Expert
Materials and Construction Specifications

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MATC Objectives

- **Demonstrate emerging technologies & maintain focus on customer needs**
 - Tiered technical assistance and troubleshooting
 - Specification review and development
 - Equipment loan program
- **Deploy technology from TFHRC, Every Day Counts, other research & development (R&D)**
 - Workshop activities that yield measurable outcomes
- **Leverage the asset for whole Pavements program & increase MATC's impact**
 - Integrated more fully with FHWA R&D, Resource Center, Federal Lands Highway, and Division Offices

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MATC Mission Approach

Independent party with a national perspective

Project Site Visits

Test results and observations facilitates implementation

Customized Training Workshops

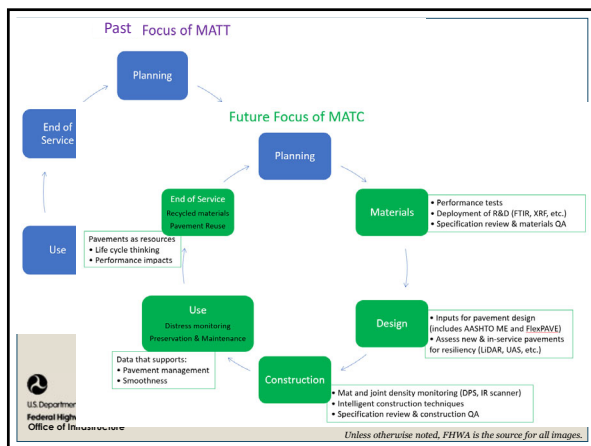
Loan equipment to partners to gain hands-on experience

Equipment Loan Program

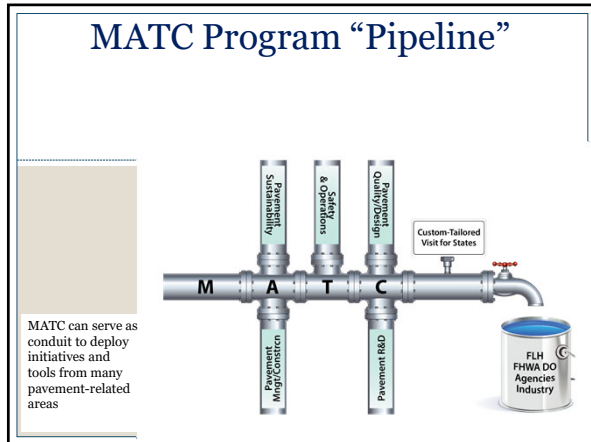
Topical guidance documents based on national trends

Technical Guidance

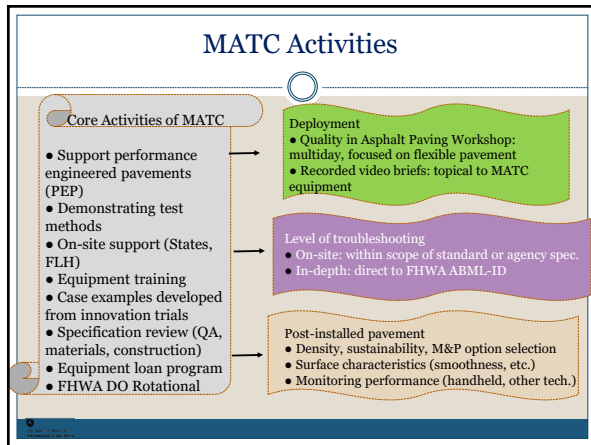
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Slide 12

MD(18) Are you obtaining a chamber for conditioning ITC specimens?
Mensching, David (FHWA), 10/17/2019

Slide 14

MD(19) A little thing that I never got around to, but it'll probably be better in the future if the circle for Puerto Rico is replaced with the actual outline of the island.

Mensching, David (FHWA), 10/17/2019

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Asphalt Binder and Mixture Laboratory – Implementation and Delivery (ABML-ID)

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(202) 493-3232
David.Mensching@dot.gov

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What Led Us to ABML-ID?

- The Mobile Asphalt Testing Trailer had operated the Asphalt Binder Testing Laboratory for 25+ years
 - Primarily housed at TFHRC
 - Recently housed at AAT in Kearneysville, WV
- Critical review conducted by D. Mensching in 2017/18
 - Need for revamp of binder lab location and resource identified
 - Summer/Fall 2018 – determination made within FHWA to move to TFHRC, operate under ABML with AIDPT funding

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The “Deeper Dive” Concept

ABML-ID
 Troubleshooting; customer support
 Specification review (binder)
 Contribution to test refinement
 In-depth support (SHA, FLH)
 Innovation case studies (materials, data, sensitivity analyses)
 Inform TFHRC product development (validation, stakeholder needs)

MATC
 Demonstrating test methods
 On-site support (SHA, FLH)
 Equipment training
 Case example developed from innovation trials
 Spec. review (mix, post-install/eval)
 Equipment loan program
 FHWA DO Rotational

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Purpose and Resources

- Purpose:
 - Create active support mechanism for implementation-focused activities of FHWA – **PRODUCT-DRIVEN LABORATORY**
 - Lead advancement of HRDI products into field evaluation and deployment
 - Engage internal stakeholders to actively respond to State/FLH concerns in short-order
- Staffing:
 - 1 full-time engineer, 1 half-time technician
- Testing capabilities:
 - Mixture, binder, aggregate, chemistry through TFHRC
 - NDE under discussion, also through TFHRC

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Process

- What would be an ideal requested project?
 - High-impact (multiple States and FHWA interest)
 - Short-duration (less than 6 months to completion)
 - Will generate multiple products that can be broadcast to national audience
- How do I request a project?
 - Send a request form to D. Mensching via FHWA Division Office P&M engineer
 - Form is available now
 - Potential products identified upfront
 - Follow-up discussion with requestor possible

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Project Logistics

- Ideas received and added to ABML-ID Master Tracker
- Panel will meet quarterly to select projects
 - Office of Infrastructure Research and Development – David Mensching
 - HICP – Leslie McCarthy
 - Office of Technical Services – Chris Wagner (**replaced by new hire in 2020**)
 - Division – Matt Daly (WV) – 1-year rotation
 - FLH – Mohammad Elias (Eastern Fed Lands) – 1-year rotation
- Requests from active MATC field projects do not undergo panel selection

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Project Coordination

- Regular status update meetings on ABML-ID projects
- Monthly sharing of ABML-ID Master Tracker
- Quarterly panel meetings
 - Review project requests and make selections
 - Discuss internal/external research products to be evaluated by ABML-ID
 - Brainstorm implementation plan to move through agency to deployment

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ABML-ID Sample Scenario: SMA Performance (ID-19003)

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ABML-ID Sample Scenario: SMA Performance (ID-19003)

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MATC Service Request: OK16106 XRF and FTIR (ID-19004)

- Identified need for further analysis
- Coordination with TFHRC Chemistry Lab
- Save data for regional/national trend monitoring
- *Completed within 3 weeks*
- REOB content is 1.5%
 - Research conducted at TFHRC suggests this level of REOB content does not impact mixture performance


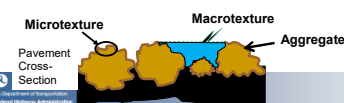
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Macrotexture on Dense-Graded Asphalt (DGA) (ID-19005)

- To identify systems for evaluating DGA macrotexture in lab using “more routine” geometry
- Device investigation is underway to determine feasibility for lab and field use on cores
- Follow-up with MATC field testing of Circular Track Meter to further inform recommendations

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Closing

- MATC and ABML-ID are agency resources
- ABML-ID: High-impact, short-duration “deeper dives”
- ABML-ID: Requests made through FHWA staff
 - Can come from anywhere within Discipline!
 - Project selection panel meets quarterly
- These are intended to be dynamic elements of FHWA’s technical “catalog”
 - Feedback always welcome!

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Contact Us

Ideas on Technologies or Practices to Deploy? Trends that you've observed?
Let us know!

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