



2017 Spring VAA Meeting

April 27, 2017

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State Materials Engineer

Materials Division

VDOT Materials Division

**Technology Initiative – AASHTOWARE Project
(Materials Module)**

Implementation of “MEPDG”

Specifications and Quality

VECAT Thoughts

VDOT Materials Division Technology Initiative

In 2016;

CO Lab only:

over 9000+ lab tests performed
where there is an
accompanying test report
issued and filed

Statewide:

Hot Mix Asphalt – 11, 800
Contractor Tests, 2950 VDOT
tests

Central Mixed Aggregate –
7800 Contractor Tests, 1800
VDOT Tests.



Materials Technology Initiative

Technology Initiative – AASHTOWare Materials Software Implementation

Implementation Objectives-

- Automate material acceptance records generation
- Improve data mining capability
- Reduce materials data transfer from entity to entity, system to system
- Reduce paper copy generation

Tentative timeline; (Pending approval of VDOT's Technology Investment Board)

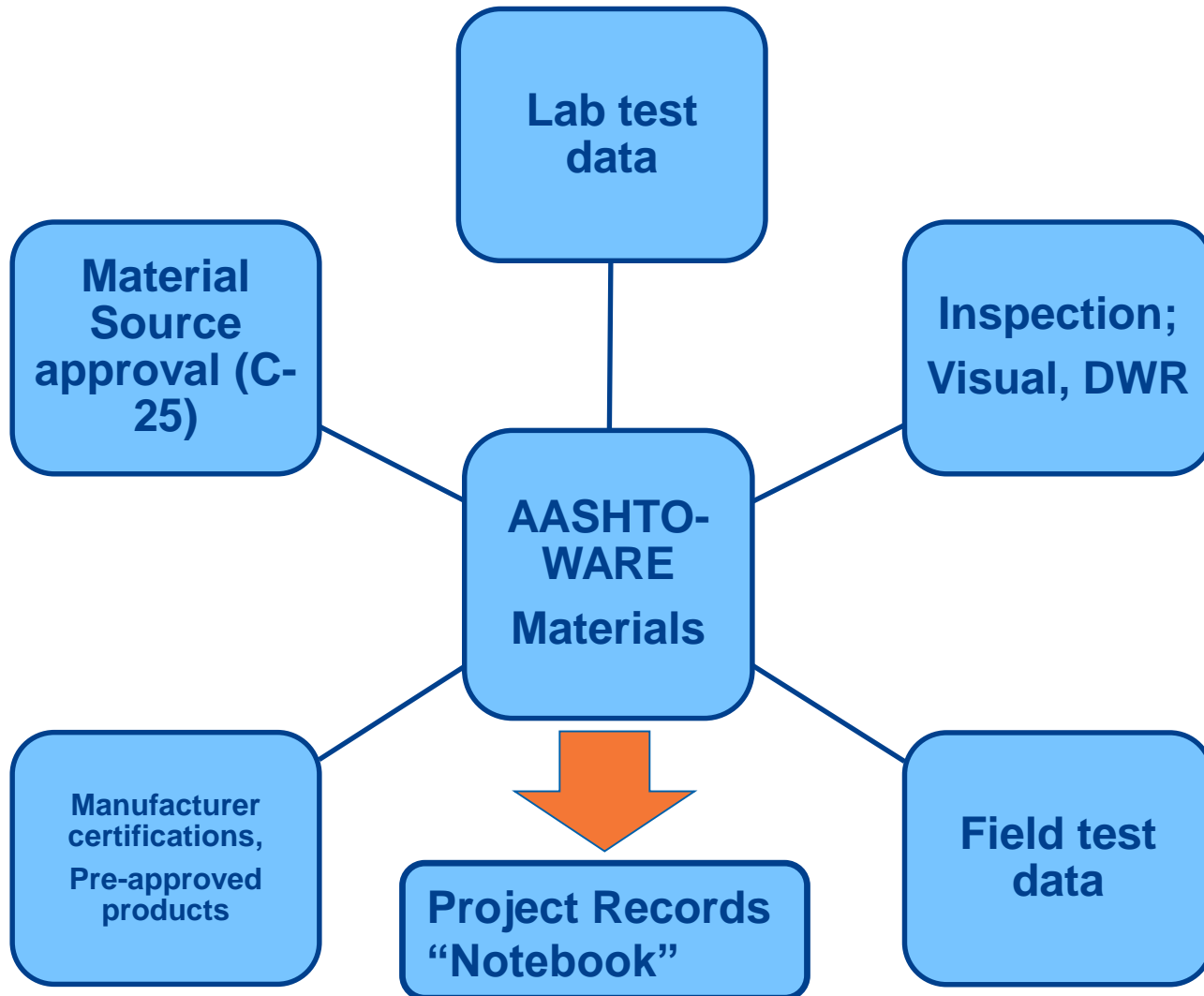
- System configuration plan complete – Aug 2017
- System configuration and implementation complete – Spring 2019 ?

AASHTOWare Project™: Construction & Materials

- **Manages contract data from award through contract finalization**
 - Field based data collection
 - Administration of contract records
 - Contractor payments
 - Materials management
 - Laboratory information management (including material and lab administration with sampling and testing workflow management)



AASHTOWare Materials Module



Pavement Design - “MEPDG”

Pavement Design Methodology Change

VDOT is currently in the process of implementing the new AASHTO Pavement ME software and methodology

- Used for Interstates and Primary Routes
- Replaces AASHTO '93 method and software
- Greater flexibility in design to incorporate field performance
- Accepted design method starting Jan 2018

For Secondary Roads and Subdivision Streets;

- VDOT will continue to use VDOT's Secondary & Subdivision Pavement Design Guide & Procedures on Secondary & Subdivision streets

MEPDG Implementation

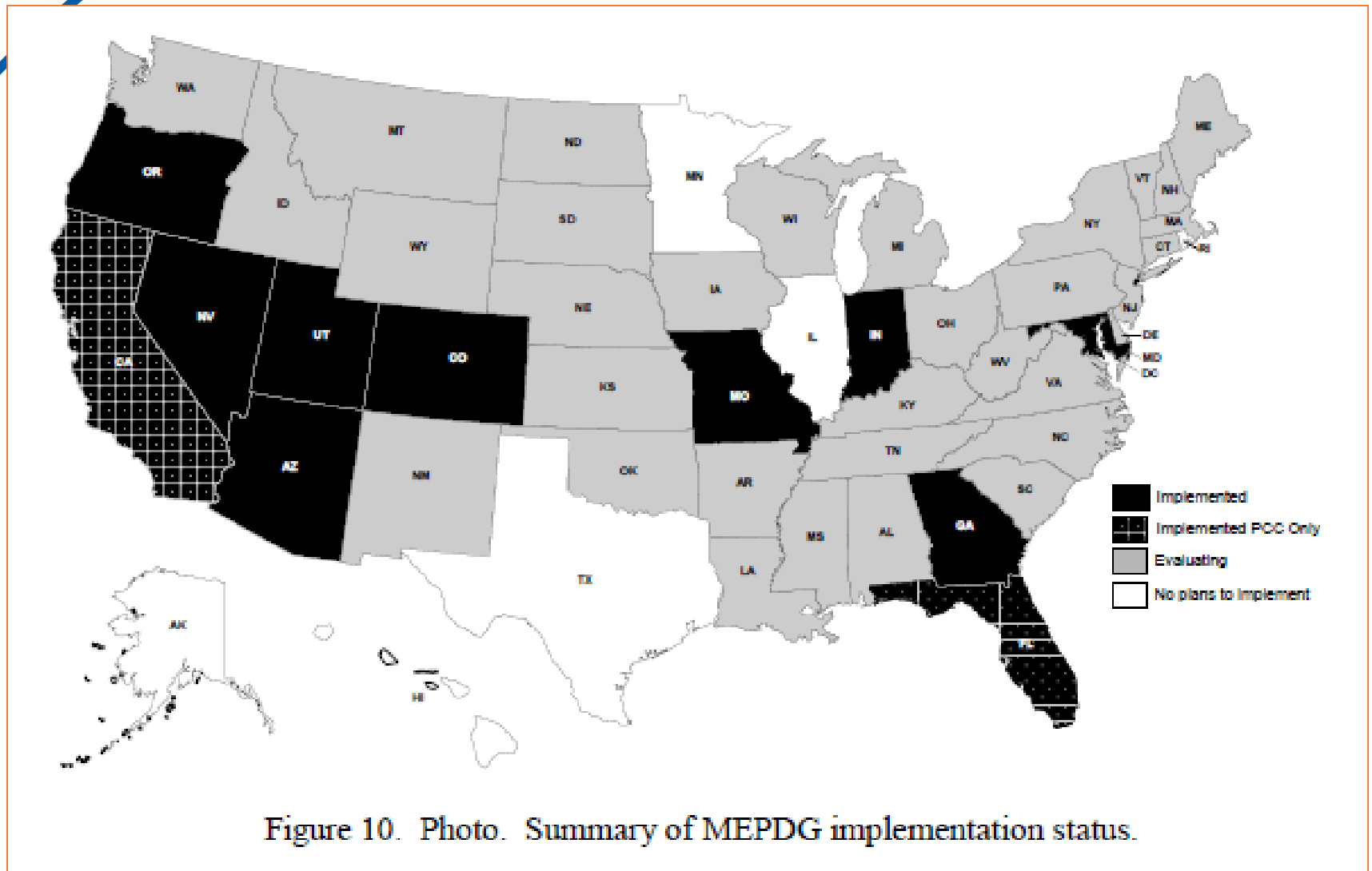


Figure 10. Photo. Summary of MEPDG implementation status.

MEPDG Implementation

2017 - Key Activities

- Finalization of MEPDG User Manual – **June 2017**
- Updating of Manual of Instructions (policy) – **October 2017**
- Training – **Summer and Fall 2017**
- Provide VDOT standard input parameters (e-files) for design community – **September 2017**
- Implement – **January 2018**

Specifications and Quality

Where are we now based on collaborative work in 2015 and 2016?

Mix Design:

- Minimum AC Content for surface mixes
- $N_{\text{design}} = 50$ gyrations paired with volumetric changes
- Incentives for AC content variability of 5% unit price

Field Density:

- Cores used for acceptance
- Incentives for achieving lot Density above threshold; of 5% unit price

Specifications and Quality

Smoothness (Rideability):

- Expanded use of Incentive only specifications for challenging sites

Tack Coat:

- Made a separate pay item
- Emphasized importance in workshops

What is next?

Monitor effectiveness of these changes on quality...



Statewide & district co-ops

Current issues of interest & collaboration:

- **Density** – clarifying 2017 specification requirements for average daily rice & QC nuclear density testing requirements.
- **Ride spec.** – cooperated to revise the specification to ensure proper communication and approval from the Engineer before corrective action(s) are taken. **For use in 2018 contracts.**
- **Subdivision mixes** – a co-op subcommittee has been formed to recommend ways to address Chief Engineer concerns for “dry, brittle” mixes that are underperforming in subdivisions.
- **Mix testing round-robin** – VDOT’s participation TBD

Workforce Development Initiatives

Materials Certification classes – In 2015 VDOT partnered with Virginia Community College System to deliver the classes under the oversight and guidance of VDOT, the certifying body.

- **Germananna Community College – all Asphalt related certifications as an element of the Virginia Education Center for Asphalt Technology (VECAT)**
- **Community College Workforce Alliance (J. Sargent Reynolds and John Tyler Community College) – all non-asphalt related certifications, inspector apprenticeship**

Virginia Community College System – VECAT and CCWA

Opportunities

- **Flexible class schedules; enhanced ability to meet transportation sector demands**
- **Improved ability for data mining; identify knowledge gaps, content adjustments, exam trends, etc.**
- **Community college campuses create an element of exposure to students....potential future workforce**
- **VDOT, VAA, and Germanna currently performing “After Action Reviews” for 2017 VECAT courses. Intent to identify the successes and what can we improve on for 2018.**

Virginia Community College System – VECAT and CCWA

Challenges

- **Managing cost of credentialing program**
- **Change in workforce development direction; higher ed vs. credentialing programs**
- **Transportation sector shift to performance type requirements...what credentials will be needed?**

For Materials Certification School information; <http://www.virginiadot.org/business/matschools.asp>

The screenshot shows the Virginia.gov website with the following elements:

- Header:** Virginia.gov logo, Agencies | Governor, Search Virginia.Gov
- Navigation:** About | Jobs | Contact | Maps | 511 | SMART SCALE Dashboard; REPORT A ROAD PROBLEM; 800-FOR-ROAD (800-367-7623)
- Breadcrumbs:** Home > Business > Materials Certification Schools
- Menu:** Travel Center | Newsroom | Info Center | Business Center | Programs | Projects & Studies
- Image:** A blue car driving through a tunnel.
- Search:** Search this site
- Left Column:**
 - Traffic Information:** 511 offers real-time traffic info. Anytime you need it, anywhere you are. Includes VDOT 511 logo.
 - SMART SCALE Dashboard:** Funding the right transportation projects. Includes SMART SCALE DASHBOARD logo.
 - Virginia Roads:** Your one-stop source for VDOT maps, data and project info. Includes VIRGINIA ROADS logo.
- Main Content:**
 - VDOT Materials Certification Schools**
 - Important Changes to Note for Materials Certification Schools in 2017**
 - Text:** In 2017 VDOT will no longer be the provider for the Materials Certification Schools. These courses will now be delivered through a partnership between the Virginia Department of Transportation (VDOT), the Virginia Education Center for Asphalt Technology (VECAT) with Germanna Community College (GCC) and the Community College Workforce Alliance (CCWA).
 - Text:** The Virginia Education Center for Asphalt Technology (VECAT) through Germanna Community College (GCC) is hosting the **Asphalt Field Level 1 and Level 2, Asphalt Plant Level 1 and Level 2, Asphalt Plant Mix Design/Aggregate Properties, Slurry Surfacing and Surface Treatment** courses which are now available either online or in a traditional (instructor-led) setting. For more information on VECAT courses and registration [CLICK HERE](#) or contact Dave Laraway at (540) 937-2902 and for information on the VECAT program, contact Carter Iseman at (804) 288-3169.
 - Text:** The Community College Workforce Alliance (CCWA) is hosting the **Soils & Aggregates Compaction, Concrete Field, Concrete Plant, Central Mix Aggregate Plant, and Pavement Marking** courses which are now available in a traditional (instructor-led) setting. For more information on CCWA courses and registration [CLICK HERE](#) or contact CCWA at 804-523-2292.
 - Text:** Students will now be required to register for classes online at the GCC and/or CCWA site(s). **Access to test grades and certification credentials will ONLY be available through VDOTU/VC**, so all students must have a valid account on VDOTU. Grades and certifications are issued within 15-30 business days after the testing date.
 - Text:** For questions or concerns regarding MCS grades or certification status, please contact Farrah Pinckney-Semere at (804) 328-3158 or MaterialsCertification@vdot.virginia.gov.

**Congratulations Richard Schreck!
God bless and enjoy the next
chapter.**

Thank you.