FHWA Update

2017 AASHTO Subcommittee on Maintenance Annual Meeting
Providence, RI

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https://www.fhwa.dot.gov/construction/
Overview

- FHWA Law, Regulation, Policy and Guidance
  - Preservation
  - Transportation Performance Management
  - Asset Management Plan
- Proven Technologies:
  - Intelligent Compaction – EDC-2
  - 3D Engineered Models – EDC-2D & 3D, 4D (Schedule), 5D (Cost), and Post Construction
  - e-Construction – EDC-3 & 4
  - Construction Partnering – EDC-4
- Market Readiness
  - Unmanned Arial Systems (UAS) or Drones
  - Bridge Bundling
FHWA Update

Review of FHWA Law, Regulation, Policy & Guidance

• Section 1103 of MAP-21 added preservation to the definition of construction in 23 U.S.C. § 101

• 23 U.S.C. § 116 (b) – Requires direct recipients of federal funds to perform Routine Maintenance

• 23 U.S.C. § 116 (e) – Allows for funding Preventative Maintenance

• Guidance on Highway Preservation And Maintenance Date: February 25, 2016
Routine Maintenance

23 U.S.C. § 116 (b) – Requires direct recipients of federal funds to perform Routine Maintenance

• Routine Maintenance is not eligible for Federal Aid Funds
• Work Performed in Reaction to:
  – An event
  – A season
  – Overall deterioration
• Common Routine Maintenance Activities:
  – Snow Removal
  – Damaged Sign Replacement
  – Sediment and Trash Removal
Preventative Maintenance

23 U.S.C. § 116 (e) – Allows for funding Preventative Maintenance

• Preventative Maintenance may be eligible for Federal Aid Funds
• Work Performed must be certified by Division Administrator as:
  – “a cost-effective means of extending the useful life of a Federal-aid highway”
• Potential Preventative Maintenance Activity:
  – Settled Catch Basin
• Decisions are case by case and state by state
• Certification Process should prevent scope creep into Routine Maintenance activities
• No requirement for FHWA to approve requests
Preservation

Section 1103 of MAP-21 added preservation to the definition of construction in 23 U.S.C. § 101

- Preservation is now by default eligible for Federal Aid Funding
- Must either be done to maintain or return an asset to a state of good repair
- Common Preservation Activities:
  - Chip Seal
  - Dowel Bar Retrofit
  - Microsurfacing
- Preservation Activities that require more discussion:
  - Patching
  - Crack Sealing
### FHWA TPM Rulemaking: Status

<table>
<thead>
<tr>
<th>TPM Related Rules</th>
<th>Final Rule Published</th>
<th>Rule Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway Safety Improvement Program</td>
<td>March 15, 2016</td>
<td>April 14, 2016</td>
</tr>
<tr>
<td>Statewide and Non-Metropolitan Planning: Metropolitan Planning</td>
<td>May 27, 2016</td>
<td>June 27, 2016</td>
</tr>
<tr>
<td>Highway Asset Management Plans for NHS</td>
<td>October 24, 2016</td>
<td>October 2, 2017</td>
</tr>
<tr>
<td>Pavement and Bridge Condition Measures</td>
<td>January 18, 2017</td>
<td>May 20, 2017</td>
</tr>
<tr>
<td>Performance of the NHS, Freight, and CMAQ Measures</td>
<td>January 18, 2017</td>
<td>May 20, 2017*</td>
</tr>
</tbody>
</table>

*Except for portions of the rule related to the percent change in CO2 emissions from 2017 (GHG measure). Those portions are delayed and FHWA will be publishing an NPRM in the Federal Register pertaining to this measure.*
FHWA Update

Asset Management Plan Requirement

- Each State is required to develop a risk-based asset management plan for the National Highway System (NHS) to improve or preserve the condition of the assets and the performance of the system. (23 USC 119(e)(1), MAP-21 § 1106).
Risk-based Asset Management Plan

Plan Contents:
1. Pavement and bridge inventory and conditions on the NHS.
2. Objectives and measures.
4. Lifecycle planning
5. Risk management analysis.
7. Investment strategies.
Asset Management Plans Due Date?

- Not later than **April 30, 2018**, the State DOT must submit to FHWA a State-approved *initial* Asset Management Plan.

- Not later than **June 30, 2019**, the State DOT must submit to FHWA a current State-approved (a “fully compliant”) Plan that meets all the requirements of 23 USC 119 and 23 CFR Part 515.
Construction Management Team: What We Do

The Vision and Mission statements listed below reflect the program areas we are undertaking and how technology drives our program of activities.

Our Vision...
• To minimize the impact of construction on the public

Our Mission...
• Collaborate with our partners to:
  - lead the advancement of highway and bridge construction
  - identify & implement innovative construction practices & technologies
  - improve quality, efficiencies, and safety for construction
What is *Every Day Counts* (EDC)?

State-based model to identify and rapidly deploy proven but underutilized innovations to:

- Shorten the project delivery process
- Enhance roadway safety
- Reduce congestion
- Improve environmental sustainability

**EDC Rounds:**
- 2-year cycles

**To date:**
- 3 rounds, 35 innovations

**Initiating 4th Round**
- (2017-2018)
- 11 innovations

Source: FHWA & FAST Act, Sec. 1444
Intelligent Compaction EDC-2

https://www.fhwa.dot.gov/pavement/ic/
Schedule (4D) and (5D) Modeling

As-found Survey Data

Post-construction Survey Data

Image Sources: Walsh, Caltrans, FHWA

3D, 4D, 5D, and Post Construction Modeling
https://www.fhwa.dot.gov/construction/3d/
EDC-3: e-Construction is the collection, review, approval, and distribution of highway construction contract documents in a paperless environment

- Electronically capturing construction data
- Electronic submission of all construction documentation
- Increased use of mobile devices
- Increased automation of document review and approval
- Essential use of electronic signatures by all parties throughout the process
- Secure document and workflow management accessible to all stakeholders on any device

Leader: Chris Schneider, christopher.schneider@dot.gov
## E-Construction: In-Person / Virtual Peer Exchanges

### Exploring States and Lead State Hosts

<table>
<thead>
<tr>
<th>Exploring State</th>
<th>Lead State Host</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>Florida</td>
</tr>
<tr>
<td>Arkansas *</td>
<td>West Virginia</td>
</tr>
<tr>
<td>Illinois</td>
<td>Missouri</td>
</tr>
<tr>
<td>Montana</td>
<td>Texas</td>
</tr>
<tr>
<td>North Dakota</td>
<td>Iowa</td>
</tr>
<tr>
<td>Maine</td>
<td>Florida (Virtual)</td>
</tr>
<tr>
<td>Colorado</td>
<td>Missouri</td>
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<tr>
<td>California</td>
<td>Michigan</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Arkansas *</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Florida &amp; West Virginia</td>
</tr>
<tr>
<td>Ohio</td>
<td>Iowa</td>
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*Arkansas became a Lead State*

### Planning for Future Exchanges

Exploring States:
- Maryland
- Mississippi
- Tennessee
- Alabama
- Nevada
## e-Construction Regional Workshops

<table>
<thead>
<tr>
<th>Host</th>
<th>Date</th>
<th>e-Construction Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utah DOT Host</td>
<td>March 1 &amp; 2, 2016</td>
<td>e-Construction and 3, 4, 5, and xD</td>
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<tr>
<td>Michigan DOT Host</td>
<td>2016</td>
<td>e-Construction</td>
</tr>
<tr>
<td>Virginia DOT Host</td>
<td>Fall of 2016</td>
<td>e-Construction and 3, 4, 5, and xD</td>
</tr>
</tbody>
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Construction Partnering
https://www.fhwa.dot.gov/construction/partnering/

- Identify best practices
- National Workshop to Highlight Best Practices – April of 2017
- Demo
  - https://www.youtube.com/watch?v=y_9XCy2lQ2w
e-Construction & Partnering Activities and Products

- Regional e-C&P Demonstration Workshop
  - Identifying two host states
  - Spring and Fall/2018

- EDC Education Connection thru YouTube videos
  - Target: technical & trade schools and high school students
  - Winter 2018

- Technical Documents
  - Case Studies, ‘How-to’ Guidance and Specifications
  - Spring 2019
Pavement Preservation
When, Where, and How*

➢ Selected as one of 11 technologies
➢ 7 Regional and 2 Virtual Summits
  • Feedback developed Implementation Plan
  • Two year delivery of Implementation Plan

*Applying a pavement preservation treatment at the right time (when), on the right project (where), with quality materials and construction (how) is a critical investment strategy for optimizing infrastructure performance.

Leader: James Gray, james.gray@dot.gov
Pavement Preservation “How”
Quality Construction and Materials

- **Flexible Surfaced Pavements**
  - Microsurfacing
  - Chip Seal
  - Slurry Seal/Scrub Seal
  - Ultrathin bonded wearing course

- **Rigid Surfaced Pavements**
  - Diamond grinding
  - Partial-depth repair
  - Full-depth repair
  - Dowel bar retrofit/cross stitching
Market Readiness: Bridge Bundling

➢ FAST ACT Section 1111
  • Encourages States to bundle multiple bridge projects as 1 project to save cost and time

➢ FHWA Implementation Activities
  • RFP to “Develop Bridge Bundling Guidebook” was advertised
  • Proposals received on July 21, 2017
  • Host Bridge Bundling Webinars in August/Sept
  • Conduct 2 to 4 peer exchanges in Fall of this year
  • Develop Bridge Bundling Website “Go-To”

Leader: Romeo Garcia, romeo.Garcia@dot.gov
Market Readiness: Unmanned Aerial Systems (UAS)

• Created a US DOT Working Group
• Research Activities:
  • Geospatial Data in Construction – contracted
  • UAS data quality for inspection – funded
  • Technology brief – funded
• Deployment Activities:
  • Monthly Webinar series – under way
  • Domestic scan – AASHTO approved and under development
  • Regional technology workshops - unfunded

Leader: James Gray, james.gray@dot.gov
Training Activities

Developing 4 module WBT series for Constructing Pavements using pavement preservation treatment for PCC

• Four 90-minute modules on:
  • Full-Depth Patching
  • Partial-Depth Patching
  • Diamond Grinding
  • Dowel Bar Retrofit (DBR)/Cross-Stitching

• All Modules will be available also in Spanish
• Will be hosted by NHI
• Schedule completion date June 2018
Training Activities

- Updating the NHI Maintenance Leadership Academy (MLA)
  - Will be contracted by NHI
  - Three of the six modules will be updated
    - Module D - Weather-related Operations
    - Module E - Traffic Services, Safety & Work Zones
    - Module F - Environmental Protection
  - Completion date Early 2018
Join Us in Spokane, WA, for the first Pacific Northwest Regional Session of the Maintenance Leadership Academy!

Maintenance Leadership Academy in Washington State has Openings!

Join maintenance professionals from multiple state departments of transportation such as Washington, Alaska, Idaho, and Montana, along with county public works departments.

August 7- November 3, 2017
Local Coordinator: Susan Neff (360) 705-7715
Thank You!

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