FHWA Update
July 14-18, 2019

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TEAM LEADER, CONSTRUCTION MANAGEMENT
FEDERAL HIGHWAY ADMINISTRATION

AASHTO COMMITTEE ON MAINTENANCE
GRAND RAPIDS, MICHIGAN

Image: Wisconsin DOT
Overview

- Every Day Counts (EDC) Initiative
  - e-Construction
  - Pavement Preservation
  - Project Bundling
  - Unmanned Aerial Systems (UAS)
- Maintenance Leadership Academy (MLA)
- Building Information Modeling (BIM)
EDC-5 Market Readiness

Market-ready + Proven + Underutilized

Visit FHWA Website: https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/
EDC-4: e-Construction

- e-Construction is defined as the collection, review, approval, and distribution of highway construction contract documents in a paperless environment from project advertisement to acceptance.

- It includes:
  - Bidding and contract award
  - Project construction and management
  - Project inspection and testing
  - Project acceptance
  - Project close-out

Source: FHWA
• Best Practice Guide
  o Flexible-surfaced: Nevada DOT
  o Rigid-surfaced: Missouri DOT

• Peer-to-Peer Exchanges and Workshops - 18
  o Match lead States with exploring States

• Updated Pavement Preservation Checklist - 23

• Pavement Preservation Research Roadmap
  o Prioritized Research Needs
  o Report expected end of the year
EDC-4: Pavement Preservation Deployment Activities

- Web-based Training for Flexible Pavement
  - Microsurfacing
  - Chip Seal
  - Slurry Seal/Scrub Seal
  - Ultrathin Bonded Wearing Course
  - Completed: see link below

- Web-based Training for Rigid Pavement
  - Diamond grinding
  - Partial-depth repair
  - Full-depth repair
  - Dowel bar retrofit/cross stitching
  - JOINT SEAL (ADDED) – Under contract
The “Bridge Bundling Guidebook” Completed. See link below:
https://www.fhwa.dot.gov/ipd/pdfs/alternative_project_delivery/bridge_bundling_guidebook_070219.pdf

FHWA is currently gearing up for a 2 year EDC-5 Implementation initiative on “Project Bundling”

Development of the NHI bridge Construction Inspection courses (ILT plus prerequisite WBT) are going well with pilot courses anticipated by May 2020

Comments submitted by the T-4 committee regarding the report on “Quality Assurance Essentials for ABC” are currently being addressed
Unmanned Aerial Systems (UAS)

- FHWA is currently gearing up for a 2-year EDC-5 Implementation initiative on UAS

- What are they used for?
  - Structural Inspection
  - Construction Inspection
  - Emergency Response
UAS Benefits

- Improved Safety
- Increased Efficiency
- Increased Quality
- Reduced Costs

"An average cost savings of 40% over traditional inspection methods"
- Minnesota DOT

"Workforce was 45% more productive and the project was completed ahead of schedule"
- Utah DOT

"Reduced lane closures and increased safety for both workers and the traveling public"
- New Jersey DOT
Structural Inspection

- Bridge Inspection
- High Mast Lighting
- Confined Space Inspection
- Retaining Walls
- Tunnels

Source: Ohio DOT (both photos)

Source: Iowa State University
• Surveying
• Routing Inspection (e.g., erosion control)
• Construction Quantities
• Pre-Construction/Project Scoping
• Work Zone Traffic Monitoring

Source: Ohio DOT
Emergency Response

- Flooding Events
- Wind Events
- Earth Movement (landslides, mudslides, volcanoes)
- Fire Events
- Earthquakes

Source: North Carolina DOT

Source: Ohio DOT
NHI-134063 Maintenance Leadership Academy:
Course Overview

- A 12-week academy-style event comprising over 100 hours of training
- Supports workforce development
- Helps newer supervisors and top employees acclimate quickly to expanding maintenance leadership roles
- Improves decision-making, resource management, communication and technical knowledge
- Skills and knowledge can be applied on the job immediately
NHI-134063 Maintenance Leadership Academy (MLA) Course Updates

- 3 modules completed December 2018 (DEF)
  - Weather-Related Operations
  - Traffic Services, Safety, and Work Zones
  - Environmental Protection
- Remaining 3 modules (ABC) completed by May 2020
  - Maintenance Administration
  - System and Bridge Preservation
  - Roadside Maintenance and Drainage
- MLA Offering
  - Would like to have a regional offering of MLA in the Northeast.
    Contact Gay Dugan at gay.dugan@dot.gov
BIM: Building Information Modeling

What is BIM?
- A vague concept
- 3D Modeling
- Digital Data Workflow
- Data Integration
- Data Interoperability
- Data Standards
- Data Extraction
- Used in all phases...continues throughout lifecycle of asset

Source: FHWA
### Federal BIM Investment

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<thead>
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<th>FHWA BIM Activities</th>
<th>Amount ($)</th>
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<td>EDC: 3D Models</td>
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What does this number represent?

799
Nobody Knows What Lies Beneath New York City

Image: Michael Marriotti
Thank you!

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