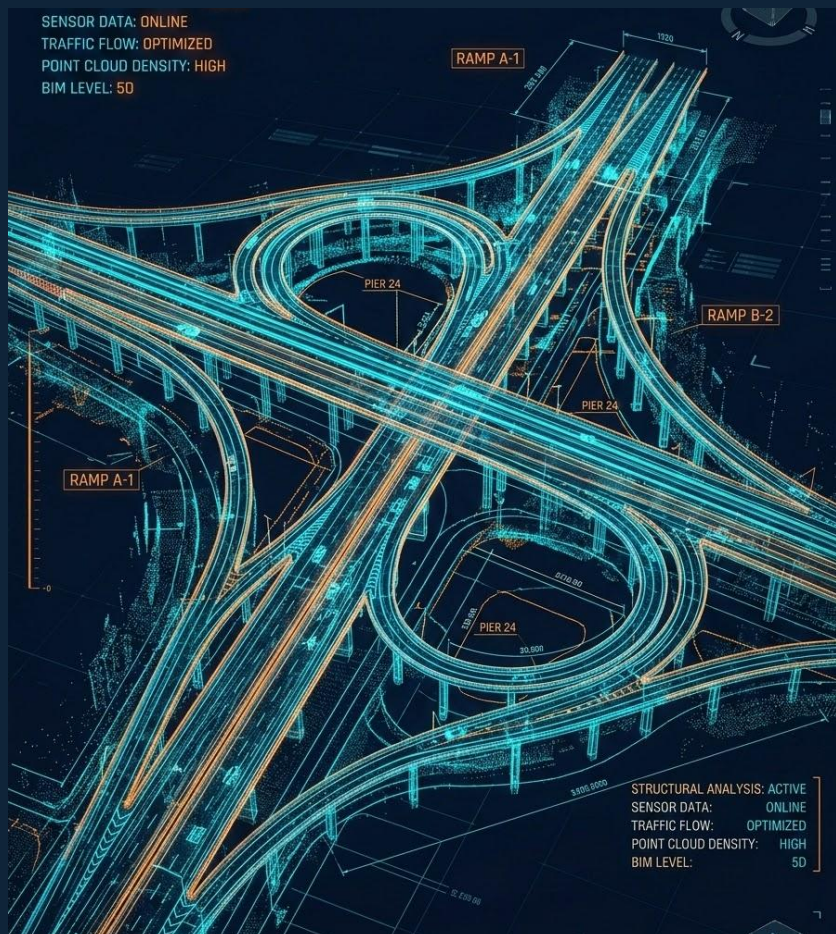




September 2026 DDSG Workshop | Day 2, Workshop Block 2A

DIGITAL DELIVERY APPLICATIONS

State ADCMS Pilot Use Cases: Tools, Workflows, and the Unmet Requirements for Scalability.

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As designed. As built.

**Better than
expected.**

Design > Build > Operate

Digital Project Delivery

Why Digital Project Delivery?

Effective construction management requires turning vast amounts of data into action. Digital project delivery (DPD) helps you do just that. DPD is the use of digital data to plan, design, construct, inspect, and record as-built conditions during the delivery of a construction project—improving teamwork and outcomes at every stage. The resulting data helps you better manage your assets for performance and cost-effectiveness across the lifecycle.

Stay on schedule & on budget

With real-time visibility into project progress, teams can make needed adjustments to maximize productivity and efficiency, delivering your projects on time and within budget.

Improve decision-making

With data that is accessible and actionable across the project lifecycle, every stakeholder can make better-informed decisions. This leads to higher-performing assets and longer asset lifespans.

Ensure long-term success

Having a single source of up-to-date information sets up future teams for data-driven operations and maintenance—saving time and money across the asset lifecycle.

ADCMS after three rounds

What project evidence reveals about the data that survives construction

Where does the data go next?

1. Short-Term Value

A useful pilot changes the field decision.

Drives immediate operational impact during active construction by putting real-time insights into the hands of field crews.

2. Long-Term Value

A durable program preserves the fact for the next project and the asset owner.

Establishes persistent data lineage and structured handoffs across the full lifecycle from construction to asset management.

The federal roadmap spans the lifecycle

FHWA BIM roadmap supports ADCMS grant program; highlighted in 2024 report to Congress



BIM roadmap

Organizes information across planning, design, construction and asset management. Calls for structured exchange, governance and agency capability.



ADCMS grants

Fund demonstrations of digital construction management. Award descriptions show standards work, field deployment, workforce preparation and handoffs.



Report to Congress

Calls for field testing and a roadmap to measure impact.

37 / 42

DOTs reported ADCMS use in active construction.

Round 1 established the connective ecosystem

FY 22–23: 10 projects in 10 states, \$33.9 million awarded



Minnesota

NiceConnect

MnDOT maps 70+ asset classes using lighting as proof of concept across design, construction, and QA/QC.

70+ / 9

Asset classes · Use cases



Pennsylvania

PennDOT

PennDOT advances enterprise digital delivery, linking BIM design software directly to construction handoffs.

BIM / 2025

Digital delivery mandate



Illinois

CORS

IDOT reports 57 new CORS sites constructed to anchor physical location and spatial positioning.

57 Sites

New CORS constructed



Synthesis

The findings

Software structures define data meaning, while hardware anchors physical position in the field.

"Test whether field facts retain both when accepted."

Round 2 prompted CDE adoption

FY24: 8 projects in 8 states, \$16.65 million awarded



New Mexico

\$1.86M Award

NMDOT's four-year award targets a shared workflow across survey, design, construction, planning and asset management. Completion is planned for October 2029.

Oct 2029

Target Completion · 4-Year Grant



Execution Status

Concrete work

Mx90 and LiDAR drone procurement, setup and training were reported in June 2026. State Kit development, test collection, CDE pilot and GIS integration upcoming.

June 2026

Procurement & Setup Reported



Synthesis

Why it matters

The intended chain is mobile LiDAR and point-cloud extraction, structured design data, a CDE pilot and GIS geodatabase delivery. Its full data handoff is still to be tested.

"Full data handoff across the lifecycle is still to be tested."

The three-round learning curve

A synthesis of award descriptions and Round 3 applicant work, not an FHWA evaluation



Round 1

Foundations

NiceConnect maps asset data across the CMS; Illinois CORS establishes trustworthy positioning for field observations.

Information & Location

CMS mapping · CORS positioning



Round 2

Lifecycle

New Mexico tests workflows from survey and LiDAR through digital as-builts into asset management.

Survey → Assets

LiDAR & Digital As-Builts



Round 3

Evidence

Applicants must explain outcomes under four merit criteria. The opportunity is to attach those outcomes to verifiable lifecycle events.

4 Merit Criteria

Verifiable Lifecycle Events

What schema means in this conversation

FHWA has a roadmap for information exchange; it has not imposed one universal ADCMS data model



3D & BIM

IFC / openBIM

Industry Foundation Classes expresses objects and relationships. IFC 4.3 expands infrastructure coverage; a usable exchange still needs a defined view and validation rules.

Objects & Relations

Defined View & Validation Rules



GIS & Alignment

Civil & Geospatial

LandXML and geospatial standards address different geometry and location needs. Coordinates need a declared datum, epoch, units and uncertainty.

Geometry & Location

Declared Datum, Epoch & Units



Enterprise Data

DOT Records

Asset inventories, pay items, inspection records and construction events require stable identifiers and mappings. File-format compliance alone cannot reconcile them.

Stable Identifiers

Requires Mappings Beyond Files

FHWA's BIM roadmap is the relevant bridge

The roadmap treats information management as an agency operating capability



Step 01

Use Case

The exchange specification begins with a use case: what decision will the receiving party make?

Decision First

Define Receiving Needs



Step 02

Info Specs

Information requirements specify objects, attributes, ownership and timing before selecting a file format.

Pre-Format

Objects, Attributes & Timing



Step 03

Workflow

A receiving workflow needs validation, exception handling and a system of record.

Operations

Validation & System of Record



Clarification

Program Lens

Roadmap alignment is a useful program lens. It is not evidence that FHWA adopted IFC 4.3 as an ADCMS grant mandate but it is additive.

Program Lens

Not an IFC 4.3 Grant Mandate

The most revealing metric is handoff

Outcome measures gain explanatory power when failures are tied to the actual receiving step



PILOT 01 — MINNESOTA

Lighting Assets

Count lighting assets accepted by TAMS/GIS out of eligible assets, plus rejected records and repair minutes.

TAMS/GIS Acceptance



PILOT 02 — ILLINOIS

Field Correction

Report usable correction availability for a specified task and share of field records meeting coordinate contract.

Coordinate Contract



PILOT 03 — NEW MEXICO

Feature Extraction

Count extracted features that pass State Kit validation and reach geodatabase with identity intact.

State Kit Validation



SYNTHESIS — ALL PILOTS

Exception Log

Retain the exception log to identify where federal investment should improve the next exchange profile.

Continuous Profile Improvement

Round 3 measures outcomes; handoff workflow validation

Four merit criteria can support stronger evidence without rewriting the NOFO



MERIT CRITERIA

NOFO Evidence

Innovation/adoption; safety and infrastructure; economic competitiveness; American families. Select a baseline, denominator and comparable task.

Outcome Baselines

Comparable Task & Denominator



DATA HANDOFF

Embedded Data

At each handoff record schema version, asset ID, mandatory attributes, coordinate reference, provenance, validation errors and receiving steward.

Schema & Attributes

Provenance & Validation



EVALUATION

The Joint Test

Did the new workflow improve a public outcome, and did an accepted fact remain usable by the next responsible organization?

Workflow Success

Usable Facts Across Handoffs

Alignment for National Scalability

Solving the Interoperability Gap

Funding Re-allocation Strategy

Consultant Overhead

High Friction & Siloed

Ready-to-go Tech Projects

Scalable Automated Pipelines

Goal: Shift capital from repetitive manual handoffs to integrated digital infrastructure.

The Scalability Curve

Maturity Trajectory & Targets

2024

Siloed Pilots &
Manual Handoffs

2029 TARGET

Model-Based Asset
Management & MALD

CURRENT

EDC-8 Institutionalization
(Addressing Interoperability)

Key Takeaway

Surviving the data handoff is the primary reauthorization metric. Scaling success requires transitioning from exploratory pilots to institutionalized, automated data pipelines.

Thank you!