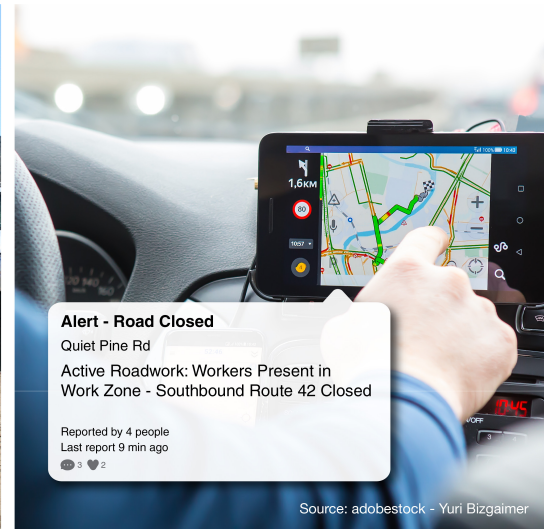
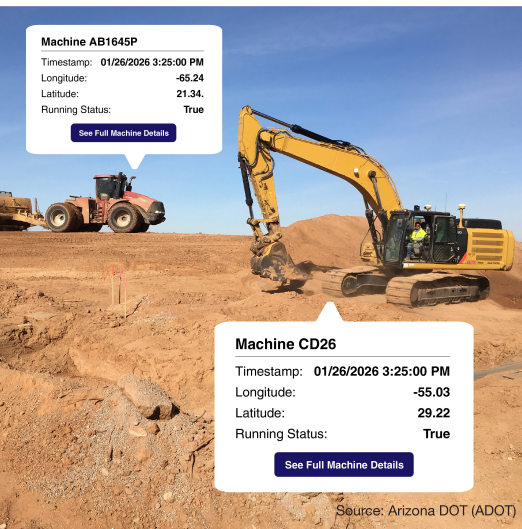


Integrated Digital Project Delivery

A streamlined setup that saves time, improves accuracy, and keeps everyone aligned.



Despite the widespread use of basic digital tools, many transportation projects still face delays and data gaps throughout the planning, development, and maintenance process. The current paper and PDF-based workflows require staff to manually re-enter the same information into multiple systems. This increases the risk of errors and slows down project updates. Important data for bridges, pavements, and utilities is often stored in separate databases, making it hard to find one shared, reliable source of information. In addition, many State agencies' software systems used for design, construction, and asset management, do not work well together, limiting the ability to share 3D models. Outdated survey and design manuals fail to reflect current tools and technologies like LiDAR, 3D modeling, and Unmanned Aerial Systems (UAS). The Integrated Digital Project Delivery initiative addresses these challenges by creating a connected, consistent approach to managing project data from early planning to long-term maintenance.

DIGITAL SYSTEMS THAT WORK TOGETHER

Through the Advanced Digital Construction Management Systems (ADCMS) program, this initiative focuses on connecting people, data, and tools across all phases of a transportation project. Instead of relying on disconnected systems, Integrated Digital Project Delivery allows information to move smoothly from survey and design into construction and asset management. When digital systems are aligned, project teams spend less time searching for information or re-entering data and more time making informed decisions. Using shared standards and open data formats helps ensure that project information remains usable over time, even as software tools change. This connected approach improves

coordination among designers, contractors, inspectors, and asset managers, resulting in fewer errors, faster problem-solving, and more reliable project outcomes.

APPLICATIONS

Integrated Digital Project Delivery uses shared digital models and data to improve how transportation projects are planned, built, and maintained. Projects move from 2D drawings to 3D models that serve as the official documents for bidding and construction. This helps reduce mistakes, lower risk, and improve construction quality. Cloud-based platforms are used to store all project files in one shared location, giving all stakeholders access to the same, up-to-date information throughout the project. Construction equipment, field data collection tools, and digital asphalt tickets send updates from the job site to project systems, allowing State agencies to confirm work and track progress faster and easier. Shared project file systems use open data formats, allowing digital models to be used in many different software tools, not just one vendor's system. As construction progresses, detailed 3D models of assets like bridges and signs are kept up to date and used to help State agencies maintain and manage assets more effectively long term.

BENEFITS

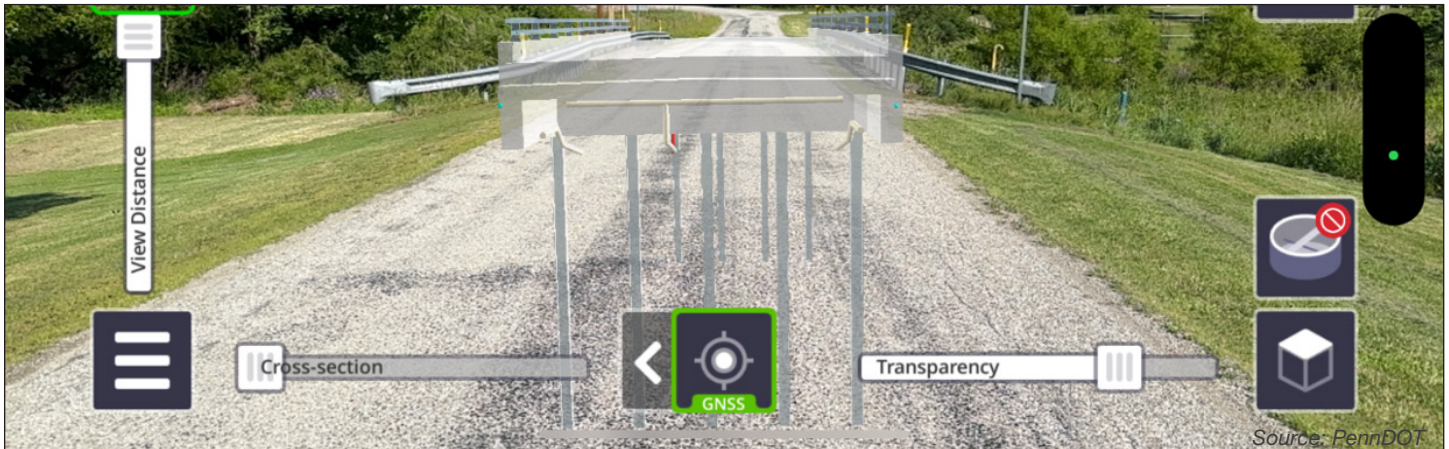
Improved Safety. Reduces the time staff spend working in dangerous areas to collect measurements.

Lower Costs. State agencies report cost savings by using less paper, avoiding rework, and getting more accurate measurements.

Faster Processes. Reduces the need for staff to enter data by hand and gives leaders up-to-date snapshots of project progress.

Longer-Lasting Assets. Uses detailed digital project data to preserve bridges and roads proactively, avoiding issues before they arise.

Public Transparency. Sends automatic work zone notifications so drivers can stay informed.



PennDOT D01 US 6 French Creek Bridge #3 designed by MBI. Image of model deliverable in the construction application. Viewer combines data from multiple disciplines (contractual bridge IFC files, road model DGNs, and survey point cloud of the existing structure) and can be used for survey and location activities in the field.

STATE OF PRACTICE

Leading State DOTs are putting Integrated Digital Project Delivery into action through several key strategies:

- ▶ **State-Level Digital Delivery Plans:** Arizona, Oklahoma, and Utah have developed multi-year plans to make digital project delivery consistent across all types of projects.
- ▶ **Updating Manuals:** Illinois and Arizona are completely rewriting their survey and design manuals to include modern software and drone workflows, as well as coordinate systems.
- ▶ **Pilot Projects:** Pennsylvania and Iowa are testing 3D model-based project delivery on complex bridge projects to improve data sharing between different software systems.
- ▶ **Working Together Across Agencies:** State agencies are participating in peer exchanges and programs to share best practices and software methods between States.

RESOURCES

[ADCMS - Digital Technologies for Construction Management](#)

[Advance Digital Construction Management Systems \(ADCMS\) Grant](#)



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