

- ### ADCMS Project
- IOWA | DOT
- Objectives**
1. Proof of Concept for TPF-5(372) Phase I Deliverables
IDM, IDS, bsDD
 2. Assess the use of IFC based Model as the Legal Document (MALD) by stakeholders downstream of design.
 3. Encourage integration of IFC4x3 into various software platforms for both model authoring and construction
 4. Collaborate with TPF-5(523) Phase II and PennDOT ADCMS teams
- E-CONSTRUCTION

ADCMS Project

<https://iowadot.gov/digital-delivery>

Digital Delivery

The Iowa DOT is updating how it works by using Digital Delivery. Instead of printing physical plans and designs, we now use 3D models with detailed information. This helps with construction, makes maintenance easier, and helps manage assets over time.

Digital Delivery enhances our ability to share information seamlessly, improves asset management, and provides greater value to all users, including construction contractors and suppliers.

Why Digital

Our vision for digital delivery.

Our Plan for Digital Delivery

How we plan to achieve the vision.

Grants & Funding

Grants and funding for digital delivery.

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<https://iowadot.gov/digital-delivery>

Developing a Road Map for Digital Delivery

We are transforming the way we exchange information to move robust and sustainable roadways that leverage digital workflows. Our key goals:

- Use 2D and 3D modeling technology to develop project models that can be used as legal documents.
- Leverage existing technology and explore new tools to support specific uses.
- Engage data collection to manage assets by developing digital models that represent as-built conditions.
- Develop and implement data management processes aligned with data management goals.

Big changes take careful planning. The shift to digital delivery is already in motion, starting with pilot projects and rolling out in phases over the next decade. Want to see the full roadmap? Check out [Developing a Roadmap for Digital Delivery](#) for key goals, objectives, and tactical steps shaping the future.

Strategic Plan for Digital Delivery

Developing a Road Map for Digital Delivery

Digital Delivery

- Why Digital
- Our Plan
- Events
- Grants & Funding
- Glossary of Terms
- Contact Us

ADCMS Project

The Bridge – US59 over IA92

- 199'-0" x 44'-0"
- Three-Span Prestressed Beam
- Multi-Column Piers
- Integral Abutment
- Zero Skew
- No Aesthetics
- No Staging

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Location

- Hwy 59 and 92 Interchange

Schedule


- Sept. 2024 – Project Kickoff
- Sept. 2025 – Advertisement
- Oct. 2025 – Letting
- Post Letting Model Support
- April 2026 – Late Start Date



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Software Use During Construction/Inspection


- Assessing downstream software critical



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Software Use During Construction/Inspection

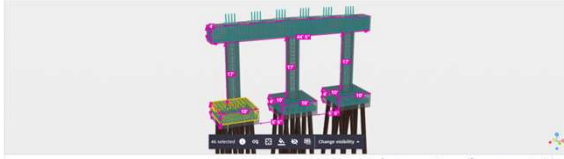
- Assessing downstream software critical



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Bar Name	Bar ID	Count	Name	Material	E1 Bar No.	E2 Bar No.	E3 Bar No.	Bar Length	Bar Diameter	Bar Type	Bar Shape	Bar Size
3 101-10	2454-777000	1	Reinforcing Bar	A570M 60% 475L 400E	Defined	1	60	1000	16	N/A	201-101	Bar 1
3 101-10	2454-777000	1	Reinforcing Bar	A570M 60% 475L 400E	Defined	1	60	1000	16	N/A	201-101	Bar 1
3 101-10	2454-777000	1	Reinforcing Bar	A570M 60% 475L 400E	Defined	1	60	1000	16	N/A	201-101	Bar 1
3 101-10	2454-777000	1	Reinforcing Bar	A570M 60% 475L 400E	Defined	1	60	1000	16	N/A	201-101	Bar 1
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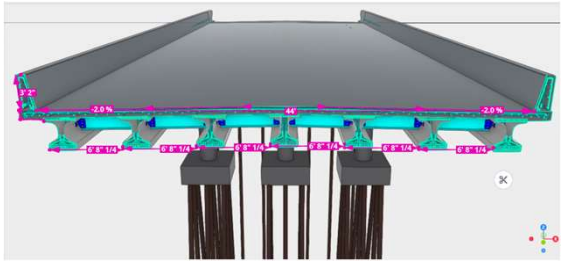
Model View from Trimble Connect

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Model View from Trimble Connect

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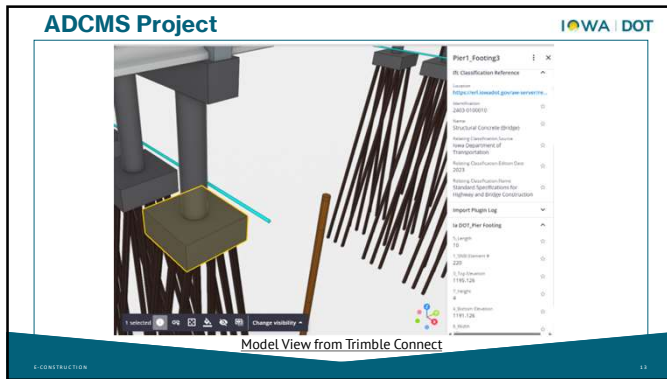
IOWA DOT



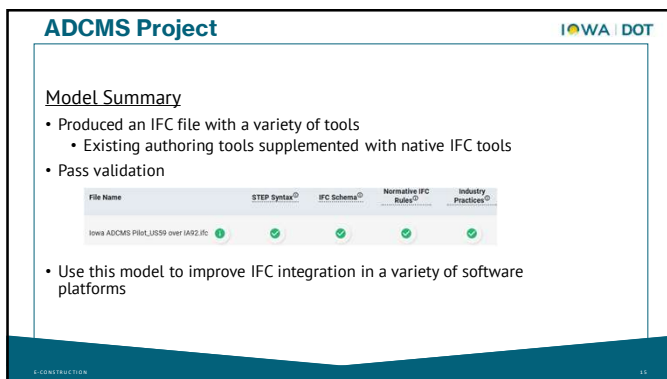
Model View from Trimble Connect

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Not all Digital Delivery content is a 3D model.
Effective digital project delivery includes a variety of formats tailored to the needs of different stakeholders and project phases.

Common Digital Delivery Formats

- 3D Models** – BIM, LandXML, IFC for design visualization and clash detection
- 2D CAD Drawings** – Traditional plan sheets still used for field clarity
- Spreadsheets (Excel)** – Tabular data like quantities, elevations, and schedules
- PDFs** – Annotated plans, specifications, and markups
- Geo-tagged Photos** – Visual documentation for inspections and as-builts
- E-Tickets** – Digital material delivery and inspection records

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Contractor Engagement

- Leveraging IFC to address past challenges
 - During Construction
 - Unfamiliar software
 - Product costs
 - Inconsistent data from design
 - After Construction
 - Scattered as-built data
- Use Model as the Legal Document (MALD) to encourage use

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Contractor Engagement

- Historic challenges led to Iowa AGC resistance to MALD
- Ultimately switched to For Information Only (FIO) during final design

Advantages

Less Contractor Risk

More Flexibility for Future Model Enhancements

Disadvantages


Potential for limited Contractor and Fabricator Engagement

No Longer Pushing through Advertisement & Letting

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FIO model


- How do you get engagement with an FIO model from the contractor?
- Give them a carrot.
- Added bid item for 3D model collaboration and enhanced Field Office for meetings.



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Field Operations

- Augmented Reality testing.
- Inspector involvement.
- Field coordination Meetings



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Conclusions

- Still work to be done.
- Contractors need help along the way.
- Immediate benefits are going to be visualization & digitizing material schedules to suppliers.
- More benefit currently for the owner than the builder.
- Progress is being made.

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Thank You - Questions?



*for electronic
contact information*

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