

DDSG

PennDOT Digital Delivery Program

MARCH 19, 2026



Pennsylvania
Department of Transportation

WHERE DID IT ALL BEGIN?



Pennsylvania
Department of Transportation

What is Digital Delivery?



Building Deliverables for Computers and People

What is Digital Delivery?

- Use of digital data to deliver projects
- Transfer of relevant information from Design to Construction to Asset Management
- Method to offer new ways to view, understand and use project design in the field
- Way to capture as-built asset information during construction acceptance

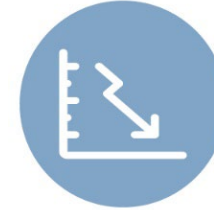


Benefits

Improved design quality



Reduced risk and project cost



Increased construction efficiency



Improved as-built records



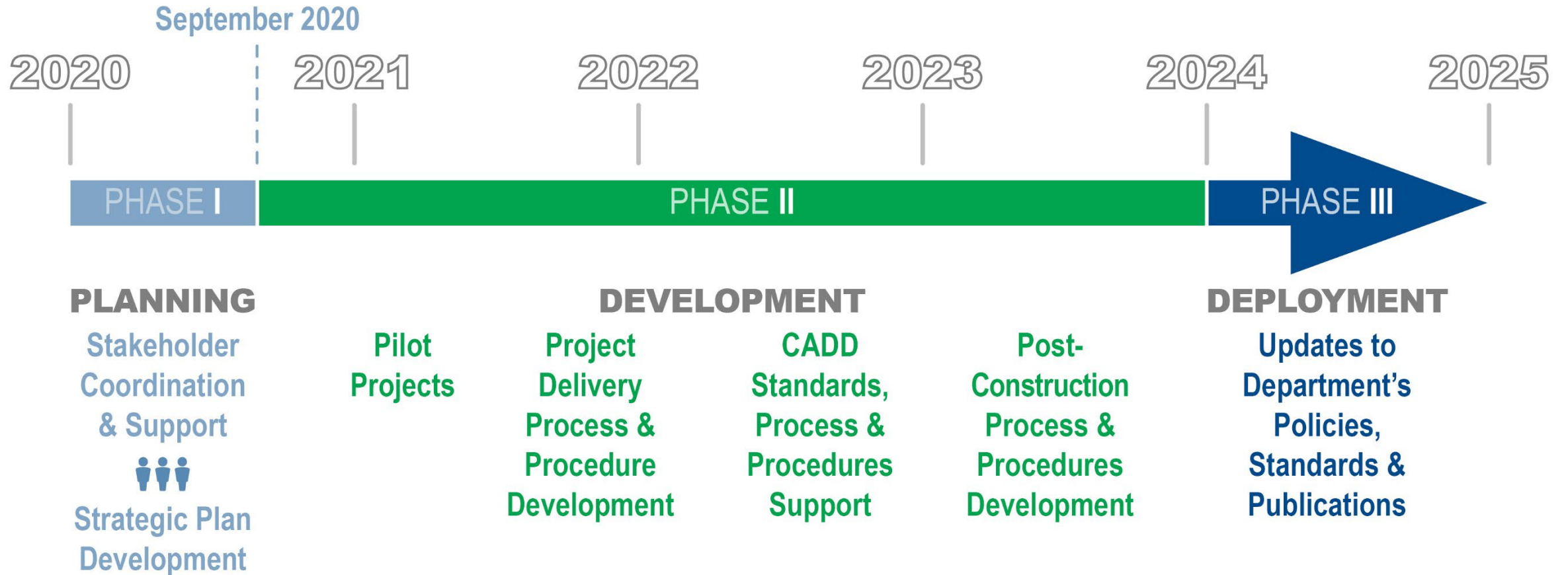
Vision Statement:

By 2025, construction projects will have the ability to be bid using 3D technology and will no longer be in a traditional construction plan format.

Achieving the Vision

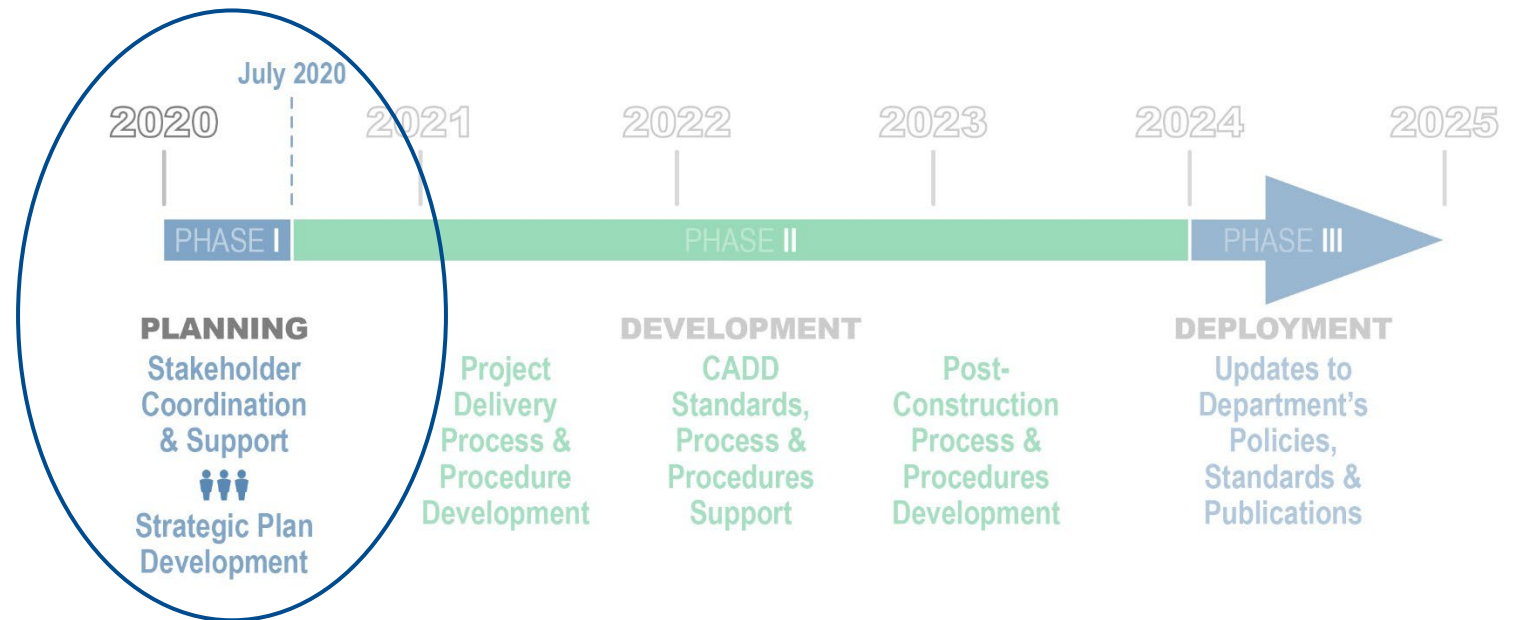


Activities and Timeline



Phase I: Planning

- Stakeholder Involvement Activities
 - 1-hr webinar
 - Regional Workshops
 - Strategic Planning Workshop
- Statewide 1-hr Webinar
(March 26 @ 1pm)



Phase I: Planning

- Regional Workshops
 - Central Office on April 21-22, 2020
 - Central Office (Commonwealth Keystone Building)
 - Eastern Region (District 4, 5, 6) on April 23-24, 2020
 - PennDOT Engineering District 6-0
 - Central Region (Districts 2, 3, 8, 9) on May 12-13, 2020
 - PennDOT Engineering District 9-0
 - Western Region (Districts 1, 10, 11, 12) on May 14-15, 2020
 - PennDOT Engineering District 12-4

Phase I: Planning

- Strategic Planning Workshop
 - June 10-11, 2020
 - PennDOT Riverfront Office Center

- Who should attend?
 - Attendees will be identified during regional workshops

Digital Delivery Directive 2025 ROADMAP



2025

Digital Delivery Implemented

- Standardized Digital Delivery Process

2024-25

7 Drainage and Utility Modeling

8 Priority Assets Digital As-Builts

2023-24

5 Bridge Modeling

6 3D Coordination and Design Reviews

2022-23

3 Roadway Modeling

4 Construction Inspection

2021-22

1 Guiderrail Digital As-Builts

2 Single Project PDF

2020

Strategic Plan

- Stakeholder Workshops
- Implementation Plan
- Digital Delivery Web Page
- Communication Plan

Our Vision

By 2025, construction projects will be bid using 3D technology and no longer be in a traditional construction plan format

Our Mission

To support the digital transformation of project development within PennDOT developing modeling requirements, processes, and workforce development to enable improved asset information transfer by using 3D data-rich information models

Goals

- Implement 3D Technology**
- Advance the Use of Accessible Digital Processes and Tools**
- Capture Data-Rich Asset Models**

Keys to Success

- Manage Pace of Change
- Help People Perceive Progress
- Create Safe Space for Experimentation
- Empower Pilot Project Teams
- Use Construction Partnering

Strategic Approach

- Assess Stakeholder Needs, Desires and Priorities
- Align Technical Solutions with Stakeholder Input
- Advance Technical Solutions Incrementally

Email: RA-PDDIGITALDELIVERY@pa.gov
 Webpage: <https://www.penndot.gov/ProjectAndPrograms/3D2025/Pages/default.aspx>

2020-2024

Initial Pilots

- Existing Ground Confidence Level (EGCL)
- Bridge
- Drainage and Utilities



2025-2027

Advanced Pilots

- Model as the Legal Deliverable (MALD)
- Advanced Digital Construction Management System (ADCMS) IFC Bridges



2027-2030

Digital Delivery Projects Advertised

- In 2027 – 2 projects per District
- In 2028 – 3 projects per District
- In 2029 – 4 projects per District
- In 2030 – 5 projects per District



2029-2030

Projects Starting Preliminary Design (MALD)

- In 2029, all integral abutment bridges < 90' in length
- In 2030, all new construction or reconstruction

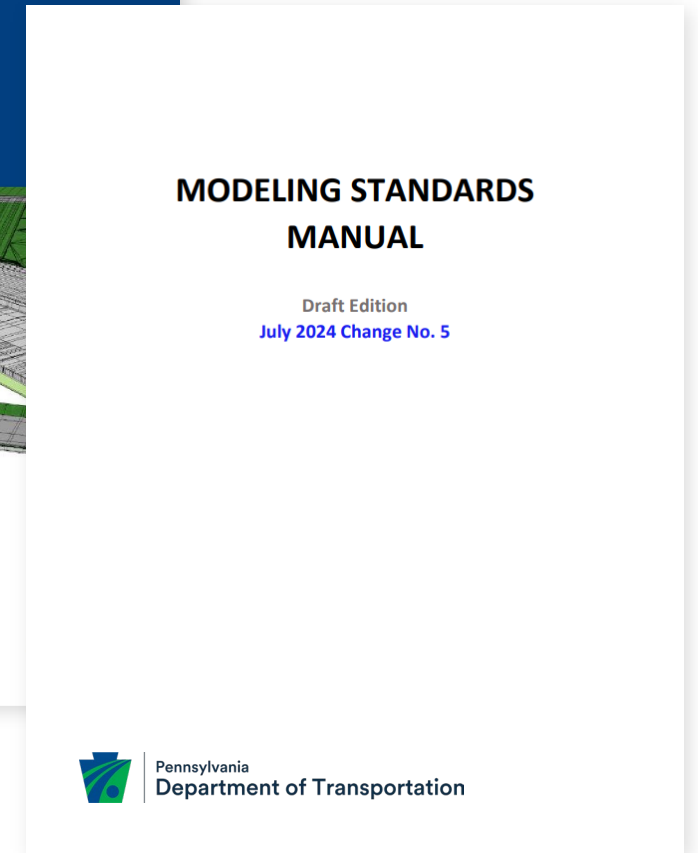
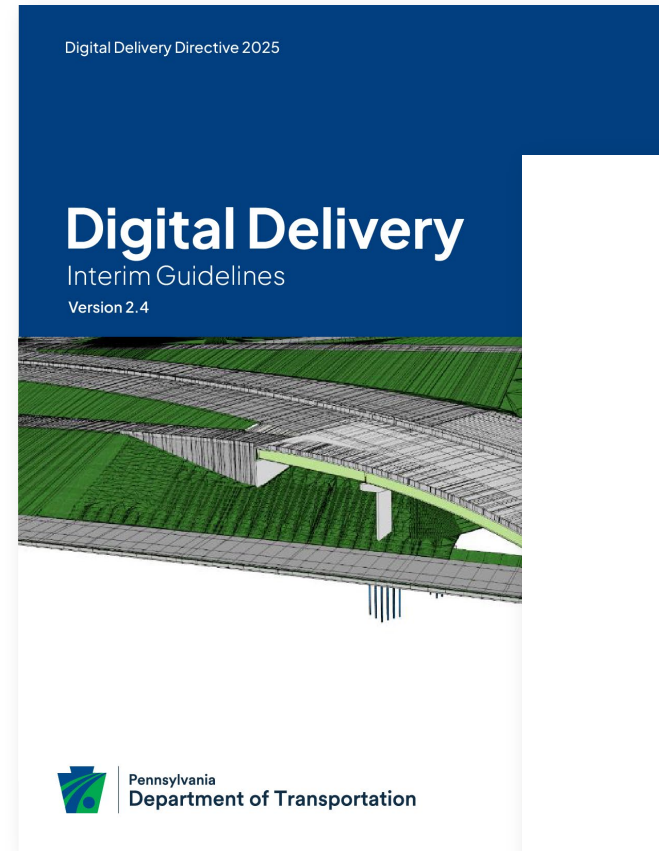


CREATING DIGITAL DELIVERY GUIDANCE

The guidance documents provide standardized processes for stakeholders to use to produce consistent deliverables.

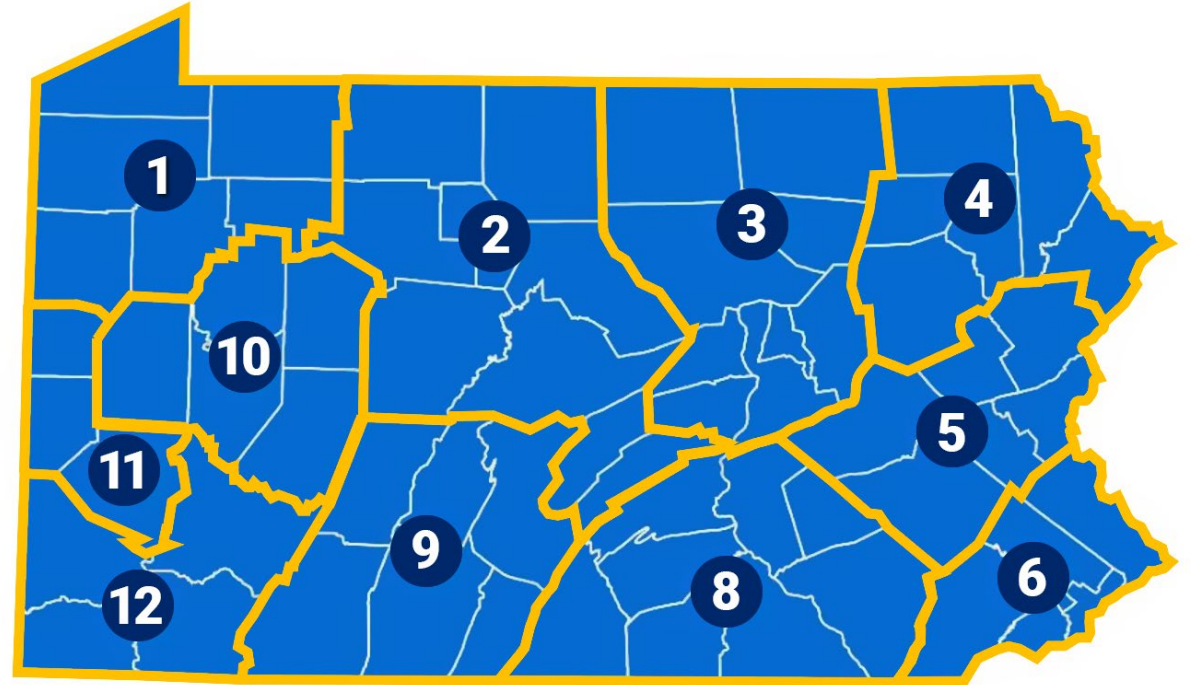
Digital Delivery documents:

- Digital Delivery Interim Guidelines
- Modeling Standards Manual
- Model Element Breakdown Structure



PILOT PROJECT PROGRESS

- 6 projects constructed using digital deliverables
- 6 projects in construction
- Over 75 projects current in design or advertised
- Developed workflows to add pay items to each model element to run quantity and location reports



The pilot project program provided the opportunity to manage the pace of change, making stakeholders feel empowered, which has led to the institutionalization of digital delivery throughout PennDOT

QUESTIONS



Digital Delivery

PennDOT Digital
Delivery Website



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