



Texas Department of Transportation
Digital Delivery Program

Digital Delivery PS&E QC Checklist
Overview & Instructions

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DIGITAL
Delivery Program

This documentation is in draft form and is currently being piloted by TxDOT's Digital Delivery Program.
For any questions, comments, or feedback please send to digital-delivery@txdot.gov.



Digital Delivery PS&E QC Checklist

Background

As the Texas Department of Transportation transitions towards digital project delivery with model as the legal document (MALD) projects, the Digital Delivery Program (DDP), will define expectations for deliverables, model development, and model review. As an incremental step, applicable projects will begin to submit model files in the summer of 2025 as “for-information-only” for contractors to use during letting and construction.

The Digital Delivery PS&E QC Checklist and the supporting instructions serve as guidance on which model files should be delivered and the expectation for QC. This document is intended to be used by final-design PS&E projects with models as identified in TxDOT’s Expectation of Use of OpenRoads Designer (ORD) memo, <https://ftp.txdot.gov/pub/txdot/des/ord/expectation-of-use.pdf>, as well as Digital Delivery pilot projects.

This guidance was developed in conjunction the 2024 TxDOT PS&E Prep Manual revisions and input from TxDOT’s internal plan reviewers, designers, managers, and external stake holders through ACEC and AGC work groups. Refer to the *TxDOT DDP QC Process* document on [TxDOT’s Digital Delivery website](#) for detailed guidance on roles, responsibilities and procedures including best practices for model management.

Overview

The [Digital Delivery PS&E QC checklist](#) is located on [TxDOT’s Digital Delivery website](#) and provides a list of deliverables and quality control (QC) measures related to the project development and deliverables. **The list of deliverables covers most situations; however, it is not all inclusive and not all files will be needed on all projects.**

The Digital Delivery PS&E QC Checklist is broken into two (2) main sections:

1. **Deliverable Plans** which define the list of common deliverables and their applicable milestone review.
 - a. Overall Deliverable Plan
 - b. Model Deliverable Plan
2. **Detailed QC Checklists** provide in depth requirements for:
 - a. Model Review
 - b. Design Criteria
 - c. Discipline Specific Rollplots
 - d. Estimate
 - e. Specifications

Expectation of Use

A project specific QC checklist should be maintained throughout the project and submitted as supporting documentation at each milestone review. Project specific information should be documented by completing the following:



- remove deliverables that are not applicable given the specific project scope,
- provide an accurate record of QC performed,
- and ensure QC checks are completed by a third party that is qualified and did not directly perform the design.

The TxDOT plan reviewers, should ensure all required deliverables and QC checks are completed at the appropriate milestone. The TxDOT DDP is evaluating 3D review technology to support to model QC outlined in this document.

Terminology

For a complete list of terms related to TxDOT's Digital Delivery Program, see the [TxDOT Digital Delivery Glossary of Terms](#).

- **Annotation** - model files that contain text, or callouts, describing plan view design elements specific to a given discipline. Annotation files may be the same files that are used in Digital Delivery Roll Plots and iModels.
- **Container model files** - contain references of multiple DGNs for the purpose of organization and file delivery. Container files are also known as a federated model. Container Files can be curated to serve as connectors to Bentley's ICP. See TxDOT's Digital Delivery website for more information on using ICP for review.
- **Deliverable** - documents or files that contain project data required for construction, reporting, review, and any other business processes that require project data. Some deliverables may be used for review or record keeping purposes only (i.e. Form 1002).
- **Design layout model files** - that contain proposed linework for a given discipline. As the project complexity increases, these model files may be broken into subdiscipline files for ease of design and file transfer.
- **iModel** - Bentley term for the federated review model that users create in Bentley Infrastructure Cloud Platform (ICP) through the synchronization and linking between the cloud-based platform and Bentley's ProjectWise. Digital Delivery utilizes the iModel for 3D model review. See Bentley's website for additional iModel description: <https://developer.bentley.com/apis/imodels-v2/overview/>.
- **Model** – this document uses the term model to refer to design files developed during preconstruction to develop the construction plan, perform analysis, and develop the engineers estimate.
- **Milestone review** – design development phases in preconstruction that are defined by interim submittals periods prior to the final project completion. Milestone review phases are broken into:
 - **Initial** phase commonly referred to as 30%.
 - **Detailed** phase commonly referred to as 60%.



- **Final** phase commonly referred to as 90% or 95%.
- **Sealed** phase commonly referred to as 100%. Submittal package is sent to the district for final approval.
- **Ready-to-let (RTL)** phase is when the submittal package is sent to the PS&E Processing section within Design Division This submittal is performed by the district.
- **Roll plot** - used in Digital Delivery pilots to substitute traditional 11x17 plan-view sheets. The use of Roll Plots does not eliminate the need for supporting details and sheets such as standard and project specific details, Estimate and Quantity (E&Q) and summary sheets.

Instructions

The Digital Delivery PS&E QC Checklist is located on TxDOT's Digital Delivery website, www.txdot.gov/digital-delivery. Instructions below are based on the individual sections within the checklist. Each section consists of check boxes for tracking progress during the QC process, click the box to mark it as complete.

Deliverable Plan

This section provides a comprehensive list of deliverables, the deliverable file format, and which milestone they should be included. Project teams should verify all deliverables are included in each milestone review package and document new or omitted.

The Deliverable Plan does not define the level of completeness or detail that should be met at each milestone. The design team should refer to the corresponding QC tabs for additional details.

- Roll plots may be used to replace sheets traditionally used for plan and profile views on Digital Delivery pilots.
- Model Files are not broken down in the overall Deliverable Plan.

Model Deliverable Plan

The Model Deliverable Plan provides a comprehensive list of model deliverables, the deliverable file format, and which milestone they should be included. Project teams should:

- Verify all model deliverables are included in each milestone review package and document new or omitted.
- Ensure the file formats for the digital design files are submitted according to the designated format outlined in deliverable execution tab: DGN, XML, etc.

For traditional projects, model files shown on the Ready-to-Let (RTL) milestone submittal should be included in the submission to Design Division's PS&E Processing section. These files will be posted as "For Information Only" for contractor use, unless otherwise specified.

For Digital Delivery pilots, all model files included in the Sealed milestone may be included as MALD in the RTL submittal.



Model Review

This section identifies elements that need to be reviewed with in model files as it related to CAD standards, model completeness and expectation.

Digital Delivery pilots should evaluate model details using 3D review tools, including the native design authoring software. Project teams should communicate how comments will be tracked, and model versions will be documented.

The Model Completeness section provides a list of common model elements for TCP, roadway, drainage, and bridge. Each item may not be applicable to every project and the PM should check the N/A box to communicate to the reviewers not to check for it.

- Verify design intent matches what is show on roll plots, project details, and estimate.
- Model files may be broken out into separate files as needed based on the size of the project, complexity, and other factors.

Design Criteria

The review of the design criteria should be performed on the model files when possible. The same digital design files should be used to create the roll plots, details, estimates and other supporting documentation.

Digital Delivery projects should evaluate design criteria through the use of 3D review tools. Project teams should communicate which software platform(s) will be used to review design files and how comments will be tracked.

- Verify that the appropriate design criteria were used. See the Roadway Design Manual (RDM), November 2024 edition for more information on specific design criteria.

Discipline Specific Roll Plots

Discipline specific sections are provided to define the typical requirements for plan sheets and details. Digital Delivery pilots will utilize annotation model files and roll plots to communicate design information that was traditionally on plan and profile sheets. These sections should be used to ensure all design information is conveyed consistently to the contractor.