NCDOT OpenRoads Designer (ORD) Implementation Initiative

Training Guidelines

September 03, 2021

The purpose of this document is to compile a number of publicly available OpenRoads Designer (ORD) training links into one single location to facilitate the ability for users to navigate to the pertinent ORD related training materials.

If there are any questions regarding these training links, please contact:

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Table of Contents

NCLUG TECH TALK EVENTS

The link below provides the updates on all the latest ongoing and past recorded events to communicate the ORD development and challenges.

NCLUG - 2021 TECH Talks ORD Presentations

PAST EVENTS

July 27, 2021	• NCLUG TECH Talks - July 27
July 16, 2021	• NCLUG / NCDOT OpenX - S14 (Q&A Wrap-up)
July 16, 2021	• NCLUG / NCDOT OpenX - S13 (Division)
July 15, 2021	• NCLUG / NCDOT OpenX - S12 (Signals)
July 15, 2021	• NCLUG / NCDOT OpenX - S11 (Signing)
July 15, 2021	• NCLUG / NCDOT OpenX - S10 (Traffic Control)
July 14, 2021	• NCLUG OpenX Games
July 14, 2021	• NCLUG / NCDOT OpenX - S9 (EAU)
July 14, 2021	• NCLUG / NCDOT OpenX - S8 (Location & Surveys)
July 14, 2021	• NCLUG / NCDOT OpenX - S7 (Hydraulics, Erosion Control & Utilities)
July 13, 2021	• NCLUG / NCDOT OpenX - S6 (Rail)
July 13, 2021	• NCLUG / NCDOT OpenX - S5 (Geotechnical)
July 13, 2021	• NCLUG / NCDOT OpenX - S4 (Structure)
July 12, 2021	• NCLUG / NCDOT OpenX - S3 (Roadway)
July 12, 2021	• NCLUG / NCDOT OpenX - S2 (CADD Services)
July 12, 2021	• 2021 Bentley ProjectWise User Conference - July 12-16
July 12, 2021	• NCLUG / NCDOT OpenX - S1 (Overview)
July 12, 2021	• NCLUG / NCDOT OpenX Rollout Week Invite

BENTLEY LEARN SITES

The links below provide the OpenRoads Designer Bentley Video tutorials, Datasets, and documents. Use this link Choose an Account (bentley.com) to access the Bentley login page required to access the training material. These are Bentley training modules and not NCDOT specific training classes.

- **MicroStation Connect Edition Basics for Civil Designers**
    - The classes are focused on existing AUTOCAD users and new users to familiarize themselves with MicroStation Connect tools and features
    - View Learning Path (bentley.com)

- **ORD Feature Videos**
    - Short videos for all aspects of design tools ranging from basic OpenRoads drafting tools to quantity estimate, reports, subsurface tools and many more.
    - View Learning Path (bentley.com)

- **Best Practices**
    - Best Practice recommendations for organizing design files, project management and working in design files.
    - View Learning Path (bentley.com)

- **ORD CADD Administrator**
    - Setting up an OpenRoads Designer Workspace including migrating data from existing V8i Workspaces. Bentley specific workspace ONLY. NOT NCDOT workspace.
    - View Learning Path (bentley.com)

- **ORD Roadway Design & Modeling**
    - Standard Out of the Box Bentley Roadway Design tools and workflow. This is not NCDOT Roadway Training Modules. See NCDOT Roadway website or link in this document for Department specific training
    - View Learning Path (bentley.com)

- **ORD Survey**
    - Standard Out of the Box Bentley Survey tools and workflow. Hands-on courses and various Learn Conferences, Special Interest Group (SIG) and Bentley Tech Talk videos related to Survey.
    - View Learning Path (bentley.com)

- **ORD Drainage & Utilities**
    - Standard Out of the Box Bentley Hydraulics tools and workflow.
    - View Learning Path (bentley.com)

- **ProjectWise Explorer CONNECT Edition**
    - Standard Out of the Box Bentley ProjectWise tools and workflow.
    - View Learning Path (bentley.com)

NCDOT ORD SPECIFIC TRAINING GUIDES AND HELP DOCUMENTS

The links below provide NCDOT specific Training, guidelines and help documents for the ORD workflow and design process:

- **PHOTOGRAMMETRY UNIT TRAINING**
  - In Progress, link will be posted once finalized.

- **LOCATION SURVEY UNIT TRAINING**
  - In Progress, link will be posted once finalized.

- **UTILITIES UNIT TRAINING**
  - In Progress, link will be posted once finalized.

- **HYDRAULICS UNIT TRAINING**
  - In Progress. Training Material will be posted soon on the website linked below:
    - https://connect.ncdot.gov/resources/hydro/Pages/ORD-Drainage-Resources.aspx

- **STRUCTURES MANAGEMENT**
  - Use the link below to access the website where you can find the **zip file that contains the manual and the dataset**:
    - https://connect.ncdot.gov/resources/Structures/Pages/default.aspx

- **ROADWAY DESIGN UNIT TRAINING**
  - The NCDOT Roadway Design Unit OpenRoads Designer Roadway training manuals and dataset are uploaded to the Roadway website as they are being finalized in zip format.
  - The training is strategically separated into 17 modules that focus on individual roadway design stages and guide the user with the necessary tools for each focus area. Some modules are in progress and may be combined as deemed appropriate as they are being finalized.
  - Navigate to NCDOT Roadway Design webpage and look for training modules listed in the "Resource Type: Training" sidebar as shown in the screenshot below:

    - https://connect.ncdot.gov/projects/Roadway/Pages/Technical-Resources.aspx

Training Files

Find a file 🔍

Name		Resource
▷ **Resource Type : Excel Spreadsheets (1)**		
▷ **Resource Type : Guidelines (2)**		
◢ **Resource Type : Training (31)**		
Add Exterior Boundary	⋯	Training
AdvancedCM_1	⋯	Training
Applying End Condition Exceptions Dataset	⋯	Training
Module 1 - File Management	⋯	Training
Module 10 - Intermediate Corridor Modeling	⋯	Training
Module 2 - Existing Terrain Model	⋯	Training
Module 3 - Horizontal Alignment	⋯	Training
Module 4 - Vertical Alignment	⋯	Training
Module 6 - Initial Corridor Modeling	⋯	Training
Module 7 - Plan Geometry	⋯	Training
Module 8 - Superelevation	⋯	Training
ORD Civil Geometry	⋯	Training

- Appendix B - Project Conversion Guidelines
- Module 1 - File Management
- Module 2 - Existing Terrain Model
- Module 3 - Horizontal Alignment
- Module 4 - Vertical Alignment
- Module 5 - (TBD) ORD Templates
- Module 6 - Initial Corridor Modeling
- Module 7 - Plan Geometry
- Module 8 - Superelevation
- Module 9 - (TBD) Resurfacing Grades
- Module 10 - Intermediate Corridor Modeling
- Module 11 - Detailed Modeling
- Module 12 (TBD) - Interchange Design
- Module 13 - Sheeting
- Module 14 - ORD Hearing Map Production
- Module 15 - (TBD) Quantities & Cost Estimates
- Module 16 - (TBD) Plan & iTwin Review
- Module 17 - (TBD) Construction

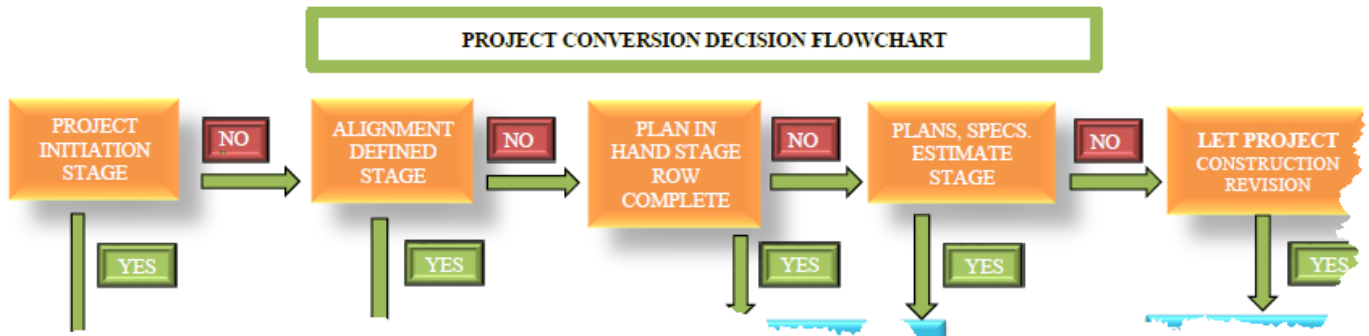**Draft list of modules. Some modules may be combined as they are being finalized.**
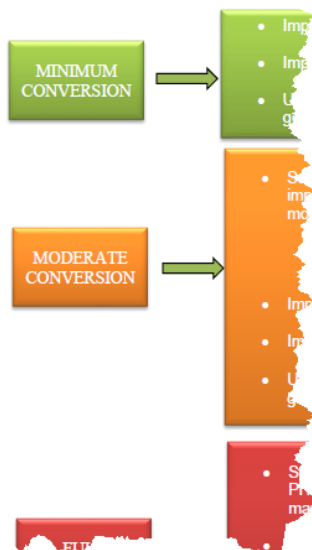
- **PROJECT CONVERSION GUIDELINE AND DECISION**
  - o The purposes of this document is to help Project Managers identify the best solution to convert or begin a Project in OpenRoads Designer or keep the project in SS2/SS4 version.
  - o This document also helps the designer identify the different levels of conversions that are possible and the process of converting the designs from SS2 version to the OpenRoads Designer.
  - o Navigate to NCDOT Roadway Design webpage and look for training modules listed in the "Resource Type: Training" sidebar as shown in the screenshot below:

    - https://connect.ncdot.gov/projects/Roadway/Pages/Technical-Resources.aspx