



WSLS 2022 Survey Database Essentials

Survey database fundamentals

- Series of files external to any drawing
- Multiple survey jobs can be stored in a single survey database.
- A survey database can only have one projection assignment.
- There should be one survey database per project with the exception of multiple projections.
- Survey data must be inserted into a DWG to see it in Civil 3D.
- By default data inserted into a DWG is locked and can only be edited if the source survey database is
- Open for editing.
- Survey databases must be created in Civil 3D, but can only be deleted in Windows.

Survey object data types

- **Survey point:** Virtually identical to Civil 3D point. In the survey database, points have a Description (feature code) that is translated to layer and style information in the DWG.
- **Survey figure:** Very similar to Civil 3D feature line. It is a 3D linear object but it does support curve definitions. Survey figures do not have Description (feature code). Layer and style information can be set from the figure prefix. Survey figures have their own definition in the DWG.
- **Network:** A traverse. It contains all associated known control points, known directions, setups, and observations. Networks have their own definition in the DWG.
- **Additional survey database objects:** Groups can be built for all of the above objects. Survey databases also have Import Events that track how data came into the survey database.

Survey user settings

These settings are accessible from the top left button on the Toolbox tab.

WisDOT custom files must be installed prior to changing these settings. If WisDOT settings are not seen in Survey User Settings dialog box, import WisDOT user settings.

Important Survey user settings:

Survey Database Defaults

- Survey Database Settings – WisDOT_Survey Database Settings
- Extended properties definition - WisDOT_Survey Extended Properties
- Linework Processing Defaults
- Current linework code set - WisDOT

Import Defaults

- Default figure site - Field Survey



Survey interface in Civil 3D

- Toolspace... Survey tab
- Survey databases have a working folder. This can be changed, but only the survey databases in the active
- Working folder can be seen.
- Equipment databases: Only needed for working with networks.
- Figure prefix database: Use database starting with WisDOT.
- Linework code set: Use code set starting with WisDOT.

Setup Project

- Set Working Folder in project directory
- Copy blank SBD from Standards folder to project folder to populate query files. Rename Survey Database as appropriate.
- Use drawing from WisDOT Survey Template

File formats available to import

- ASCII point files (TXT, XYZ, CSV, etc.)
- Land XML files
- Autodesk FBK fieldbook files
- Other file types with special applications

Import Survey Database File

- Check Drawing Coordinate System
- Check Survey Database Coordinate System
- Check import settings (Figure Prefix Database, Linework Codesets)
- Do not import survey figures and points into drawing

Using Survey Queries

- Use Survey Query's to import survey points and figures
- Edit Point names/codes and survey figures
- Create Utility drawing, Existing Surface, and Existing base file drawings using Survey Queries
- Design should have access to survey database, Survey Queries used for Corridor targets

Key Takeaways

- Do not create a separate Survey Database for each import event
- Designers should have access to the complete survey database for targeting corridor
- Utilize the Survey Queries for surface creation and topo map display