



# OpenRoads Survey: WorkSet Creation

## Bentley CONNECTION Client

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CONNECTION Client

**Bentley**

Sign In

Email

eric.thomas@dot.ohio.gov

Password

Sign In

[Why sign in?](#)

[Forgot password?](#)

[New User? Register Now](#)

Bentley Connect licensing requires user to log into their Bentley account to secure a software license.

ODOT users should log in using your ODOT email address. The password is automatically applied using your ODOT password.

Contact your District CADD Administrator if you are unable to log into your Bentley account.



## Working in the ProjectWise Environment

### What is ProjectWise?

As ODOT migrates to OpenRoads Designer (ORD), all internal projects started using ORD will be housed in ProjectWise. ProjectWise, Bentley's engineering project collaboration software, is used to manage, share, and distribute engineering project content. ProjectWise integrates with Bentley applications and other products including Autodesk software and Microsoft Office.

### ProjectWise Explorer

ProjectWise Explorer is used to access project information stored in ProjectWise. The application is accessed using the desktop shortcut shown below.

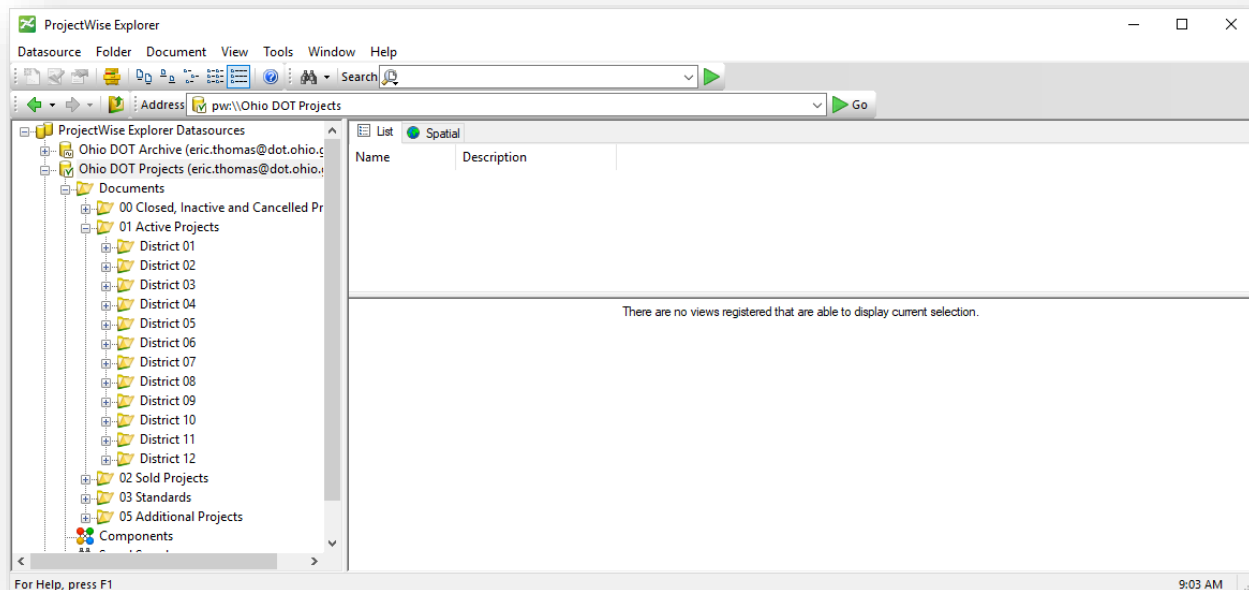


### Data Sources

ODOT's ProjectWise environment is configured with three main datasources as described below:

- Ohio DOT Archive
- Ohio DOT Projects
- Ohio DOT Training/Testing

Active projects are organized by District as shown below.





## CADD Standards

ODOT's CADD Standards for Bentley CONNECT products are housed within ProjectWise in the following location:

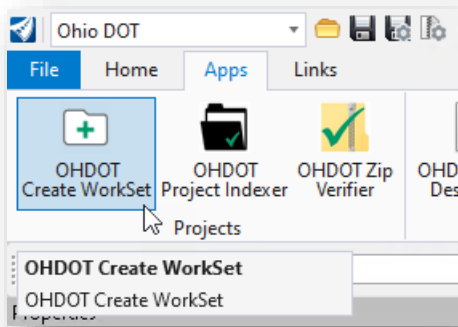
- **Ohio DOT Projects\Documents\03 Standards\CADD Standards\CONNECT\_Config\WorkSpaces\OHIODOTCEvo1\Standards**

The CADD standards are maintained by the Office of CADD and Mapping Services.

## WorkSet Creation

A WorkSet is used to define the folder structure for a project as well as project specific configuration variables, Seed design files, and other project specific information. ODOT provides a custom application that is used to create new Worksets. The application is used to create WorkSets both within ProjectWise, or outside of the ProjectWise environment.

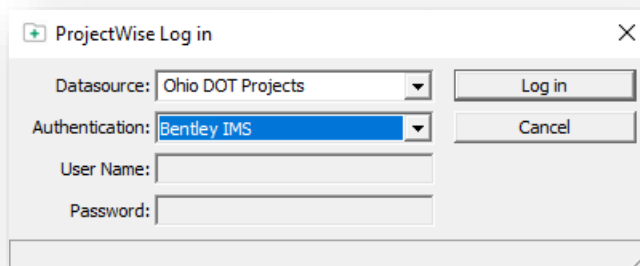
The application is available from the OHIO DOT WorkFlow within ORD, as shown at below



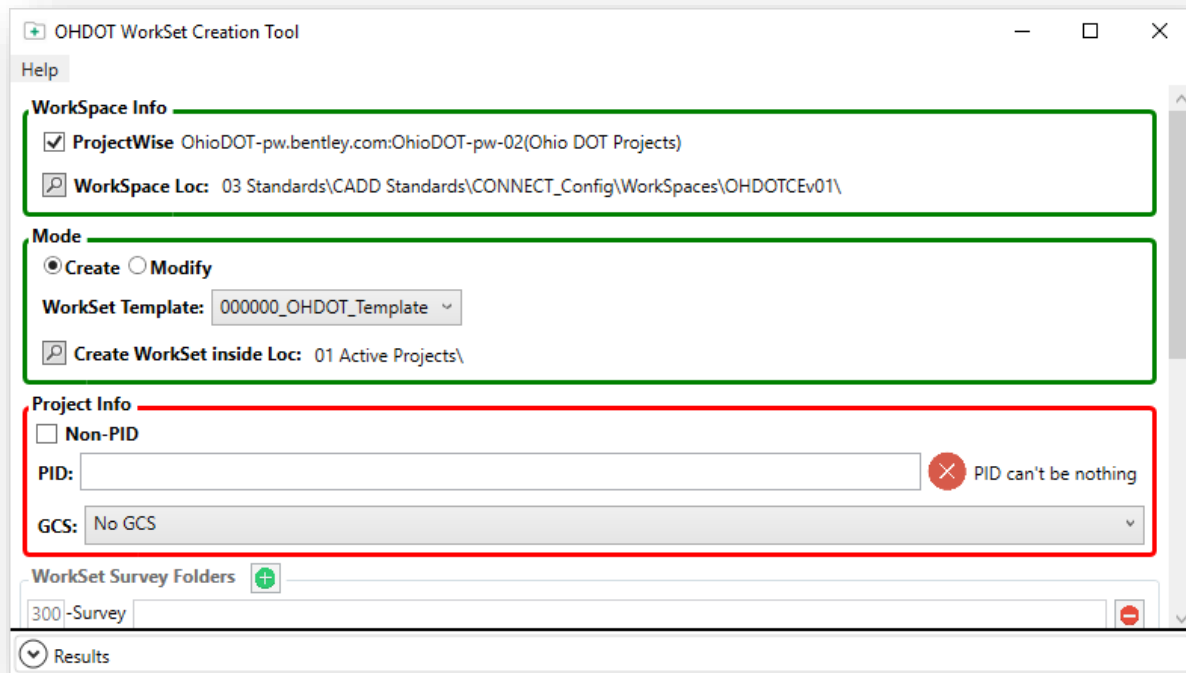
The application can also be accessed from the OHDOT CADD Standards in the following location within ProjectWise:

**Ohio DOT Projects\Documents\03 Standards\CADD Standards  
\CONNECT\_Config\WorkSpaces\OHIODOTCEvo1\Standards\Applications\  
OHDOTCreateWorkSet.exe**

When the application is started, the dialog shown below is opened if you are running the application within ProjectWise.



Select **Bentley IMS** for the **Authentication** parameter. Choose the **Log In** button. The main dialog for the program is opened as shown below.

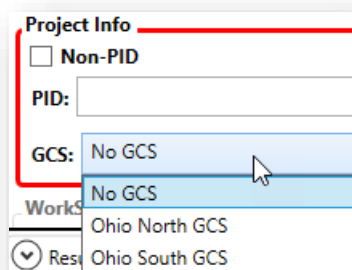


- WorkSets for projects that have been assigned an ODOT Project Identification Number (PID) are stored created within ProjectWise in the **Ohio DOT Projects\01 Active Projects\Documents\01 Active Projects\District XX\County\** folder.
- Projects that do not yet have a PID number assigned, but may be assigned a PID number at a future date, are created in the **Ohio DOT Projects\Documents\05 Additional Projects\District XX\County\** folder

See the application documentation for more information.

### Geographic Coordinate Systems

When a new WorkSet is created, it is necessary to establish the Geographic Coordinate System (GCS) requirements for the project. The **OHDOT Create WorkSet** application provides options to define the GCS for the new WorkSet as shown below.



#### No GCS

Select this option when the project data scaled to ground. The Custom Coordinate System must be defined in the Seed files for the WorkSet before any other work is done on the project

#### Ohio North/South GCS

Select the appropriate coordinate system for projects mapped using State Plane Coordinates.

When the new WorkSet is created, the GCS is assigned to the seed files for the project. See the next chapter for details to define a custom GCS for projects mapped to ground coordinates.



## Project Folder Structure

All ODOT projects use a standard folder structure. An Excel file detailing the intended usage for each folder can be found in the ODOT Standards in the following location:

Ohio DOT Projects\Documents\03 Standards\CADD Standards\CONNECT\_Config\WorkSpaces\OHIODOTCEvo1\Standards\OHDOT Utilities\Documentation\CONNECT\_Project\_Folders.xlsx

A summary of the Survey related folders is included below.

### 000-Admin

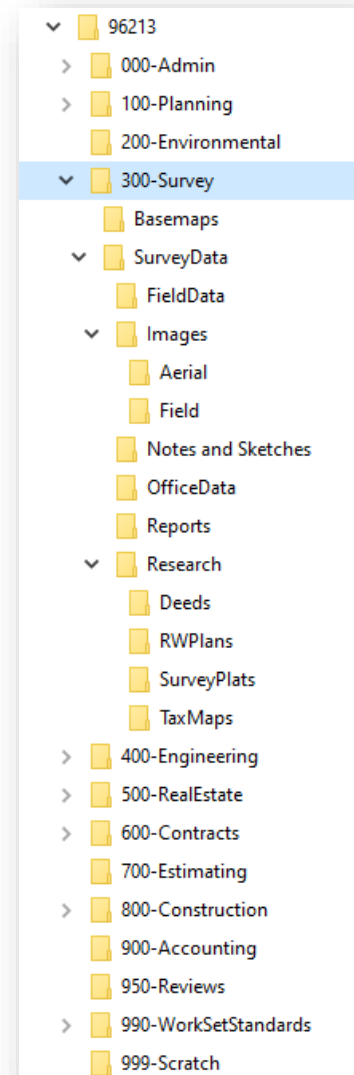
- 000-Admin\OUPSInfo\

### 300-Survey

- 300-Survey\Basemaps\  
Used to store survey and existing basemap design files.  
DGN Files:
  - BA - Aerial Mapping
  - BC - Aerial and Ground Combined
  - FB - Ground Survey Basemap
    - No Alignments
    - No Right-of-Way
    - No Parcels
    - No Exceptions!
  - FD - New file for field terrain models
  - PC - New file for Point Cloud dataRetired Files:
  - BE - No longer used for ORD Projects

### Notes:

- By default, ODOT's Roadway personnel have read-access to the 300-Survey folder and sub-folders
- Designers will reference the Survey information. Any changes that are required by the design personnel must be coordinated with Survey
- New folders can only be created at the bottom level folders.





### 400-Engineering

Each discipline specific folder in the 400-Engineering folder has three sub-folders as shown at right.

Existing alignments are stored in the following file:

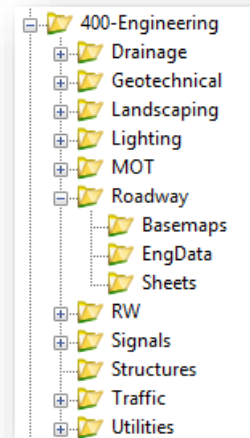
- BK – Geometry Basemap, located in the **400-Engineering\Roadway\Basemaps** folder

Right-of-Way and Parcels:

- BR – Right-of-Way Basemap, located in the **400-Engineering\RW\Basemaps** folder

Notes:

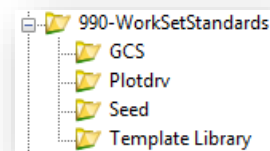
- ODOT's Surveyors have Write access to the 400-Engineering folder and sub-folders



### 990-WorkSetStandards

CADD Standards specific to a project are stored in the 990-WorkSet Standards folder. When a new project is created in ProjectWise, WorkSet specific CADD Standards are placed in these folders as detailed below:

- GCS
  - This folder contains the DTY file defining the Geographic Coordinate System in the case where a custom scale factor is defined for the project. The DTY file is copied from the OHDOT CADD Standards and is named “#####\_Custom.dty” using the PID number for the project.
- Plotdrv
  - This folder contains the PSET file for the WorkSet. The file is copied from the OHDOT CADD Standards into this folder. The copied file is renamed “#####.pset” using the PID number.
- Seed
  - Seed files are copied from the OHDOT CADD Standards and renamed using the PID number for the project.
  - These seed files are defined using the appropriate Geographic Coordinate System when the WorkSet is created.
  - The Design seed files are renamed with the ODOT PID Number.
  - The Drawing and Sheet seed files are not renamed with the PID number. It is necessary to maintain generic names for these two seed files for the ORD sheet clipping process
- Template Library
  - The OHDOT\_Templates.itl file is copied from the OHDOT CADD Standards into this folder. The copied file is renamed “#####\_templates.itl” using the PID number.





## Checking Files out/in in ProjectWise

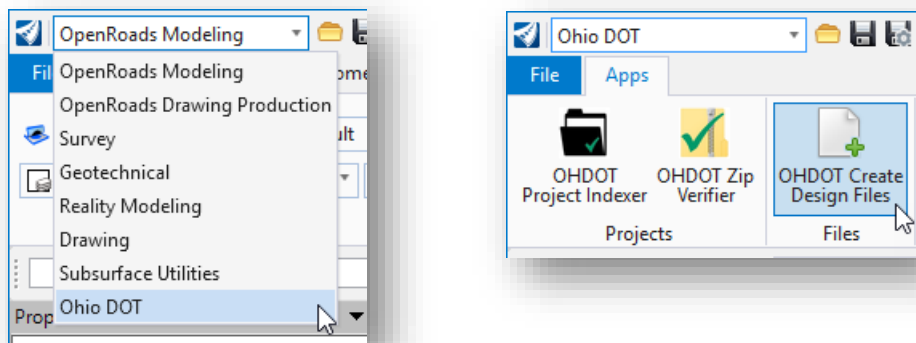
When a file is opened from *ProjectWise Explorer*, the file is copied to your local computer and is locked on the server. Other users can view the file but cannot edit the file while it is checked out by another user.

Changes to the file are not reflected on the server copy until one of the following actions is preformed:

1. The file is closed and checked back in to the server
2. The server copy is updated by choosing **File> Update Server Copy** in ORD

## Creating MicroStation DGN Files

New Design Files are created within ORD by use of the OHDOT Create Design Files application. The application is accessed from the **OHDOT** Workflow by selecting the **OHDOT Create Design Files** icon as shown below.



The dialog is shown below. See the application help for more information.



Create Design Files

Parent Folder: pw:\OhioDOT-pw.bentley.com\OhioDOT-pw-01\Documents\01 Active Projects\District 06\_D06\ethomas\Survey\_Training\96213

Filters:

Defaults: Engineering Fok: 400-Enginee, Structure Folder: Roadway\, PID: 96213, 001, Default Comme, Survey Folder: 300-Survey\, Wall Folder: Roadway\

Create	Category	Type	Description	Code	# of Files	Base Folder	Folder	File Name	File Suffix	Comments	Scale	Seed
<input type="checkbox"/>	Roadway	Basemap	3D Modeling	KM	0	400-Engineering\	Roadway\Basemaps\	96213_KM		Default Comment	1:20	96213_DesignSeed2d.dgn
<input type="checkbox"/>	Roadway	Basemap	Digital Terrain Model	KD	0	400-Engineering\	Roadway\Basemaps\	96213_KD		Default Comment	1:20	96213_DesignSeed3d.dgn
<input type="checkbox"/>	Roadway	Basemap	Geometry	BK	0	400-Engineering\	Roadway\Basemaps\	96213_BK		Default Comment	1:20	96213_DesignSeed2d.dgn
<input type="checkbox"/>	Roadway	Basemap	Superelevation	KS	0	400-Engineering\	Roadway\Basemaps\	96213_KS		Default Comment	1:20	96213_DesignSeed2d.dgn
<input type="checkbox"/>	Roadway	Basemap	Aerial Mapping	BA	0	400-Engineering\	Roadway\Basemaps\	96213_BA		Default Comment	1:20	96213_DesignSeed3d.dgn
<input type="checkbox"/>	Roadway	Basemap	Aerial and Ground Combined	BC	0	400-Engineering\	Roadway\Basemaps\	96213_BC		Default Comment	1:20	96213_DesignSeed3d.dgn
<input type="checkbox"/>	Bridge	Basemap	Bridge	BS	0	400-Engineering\	Roadway\Basemaps\	96213_BS		Default Comment	1:20	96213_DesignSeed2d.dgn
<input type="checkbox"/>	Bridge	Basemap	3D Model	KB	0	400-Engineering\	Roadway\Basemaps\	96213_KB		Default Comment	1:20	96213_DesignSeed2d.dgn
<input type="checkbox"/>	Bridge	Sheet	Site Plan	SP	0	400-Engineering\	Roadway\Sheets\	96213_SP		Default Comment	1:20	OHDOT_SheetSeed2d.dgn
<input type="checkbox"/>	Bridge	Sheet	General Plan	SG	0	400-Engineering\	Roadway\Sheets\	96213_SG		Default Comment	1:20	OHDOT_SheetSeed2d.dgn
<input type="checkbox"/>	Bridge	Sheet	General Notes	SN	0	400-Engineering\	Roadway\Sheets\	96213_SN		Default Comment	1:1	OHDOT_SheetSeed2d.dgn
<input type="checkbox"/>	Bridge	Sheet	Estimated Quantities	SQ	0	400-Engineering\	Roadway\Sheets\	96213_SQ		Default Comment	1:1	OHDOT_SheetSeed2d.dgn
<input type="checkbox"/>	Bridge	Sheet	Staged Construction Details	SC	0	400-Engineering\	Roadway\Sheets\	96213_SC		Default Comment	1:1	OHDOT_SheetSeed2d.dgn
<input type="checkbox"/>	Bridge	Sheet	Removal	SV	0	400-Engineering\	Roadway\Sheets\	96213_SV		Default Comment	1:1	OHDOT_SheetSeed2d.dgn
<input type="checkbox"/>	Bridge	Sheet	Foundation Plans	FO	0	400-Engineering\	Roadway\Sheets\	96213_FO		Default Comment	1:1	OHDOT_SheetSeed2d.dgn

Create Files





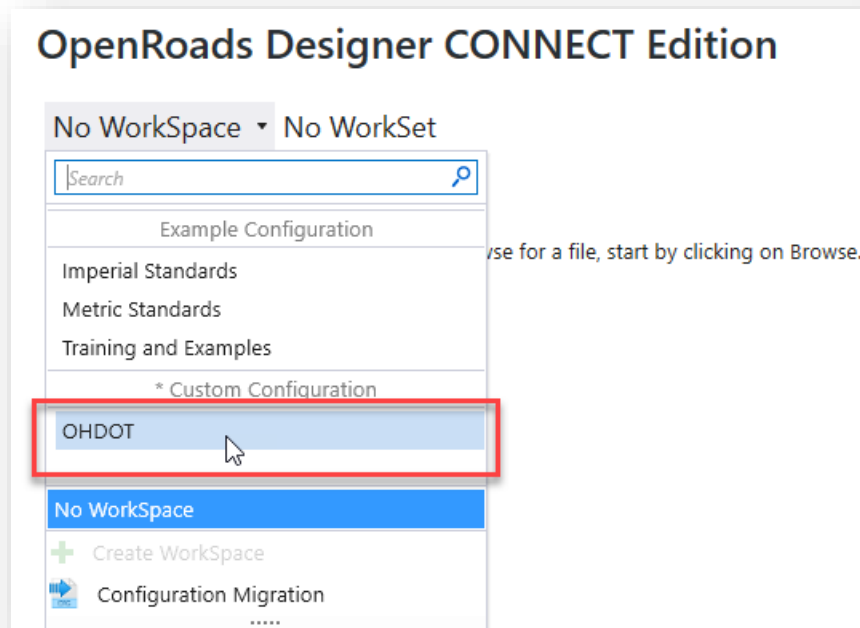
## OHDOT Standards and WorkSets Outside the ProjectWise Environment

This section is provided for users external to ODOT who are not working in the ProjectWise environment.

### The OHDOT WorkSpace

An OpenRoads WorkSpace is used to define a set of standards specific to a design agency or organization. Out of the box, Bentley provides **Example Configurations** as shown below.

The OHDOT WorkSpace is defined as a **Custom Configuration** as shown in the example below. The OHDOT WorkSpace defines the various CADD Standards for a typical ODOT project.



### OHDOT WorkSpace Installation and Configuration

ODOT's CADD Standards are download from the Ohio Department of Transportation website:

[http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD\\_Services/Standards/Pages/Files.aspx](http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD_Services/Standards/Pages/Files.aspx)

Unlike other ODOT publications that are updated quarterly, or semi-annually, the OHDOT CADD Standards are updated frequently. An application has been developed to help users external to ODOT keep the CADD Standards in sync with ODOT.

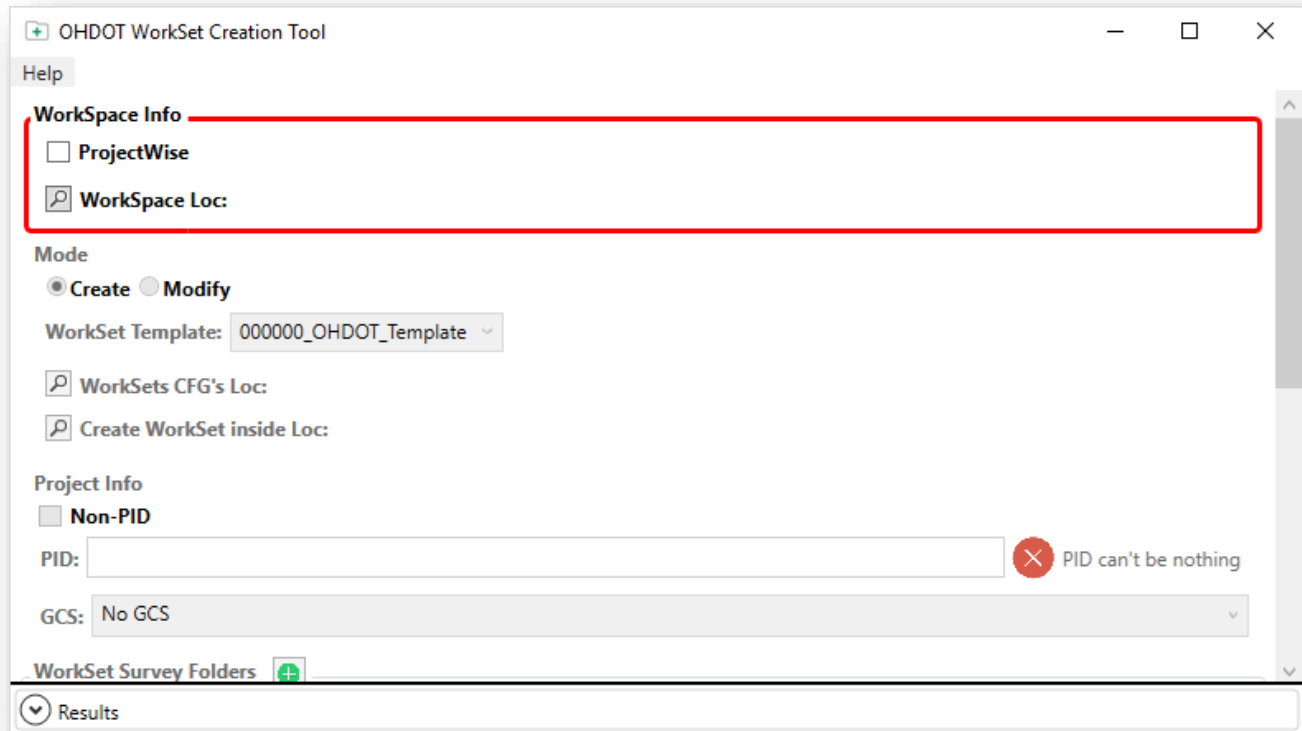
Details for the installation and configuration of the OHDOT CADD Standards are available from the link listed above.



## Creating WorkSets

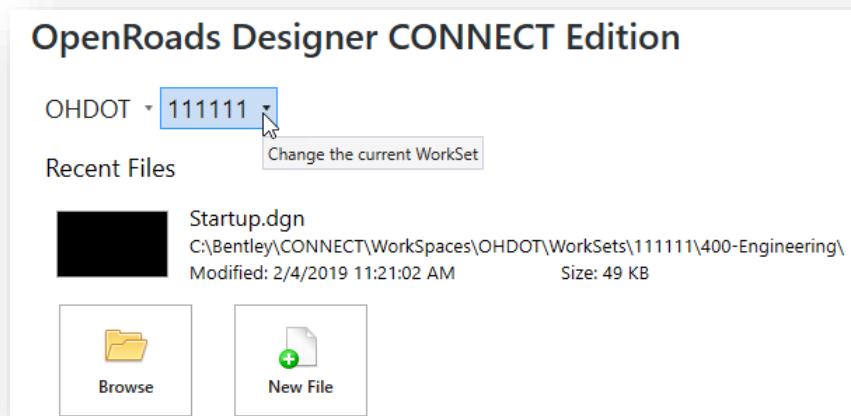
WorkSets are created using a custom application, available in the OHDOT Standards in the following location:

`..\OHDOT\Standards\Applications\OHDOTCreateWorkSet.exe`



See the application's support documentation for more information.

After the WorkSet has been created, it is accessed by starting ORD and selecting the current WorkSet using the **Change Current WorkSet** list as shown below.





## WorkSet Design Files

### Seed Files

The new WorkSet does not contain any design files other than the Seed files, which are in the following folder for the WorkSet:

`\990-WorkSetStandards\Seed\`

Be sure to review the seed files to ensure the correct Geographic Coordinate System is defined as described earlier in this document.

### Creating Design Files

Open one of the seed files as the starting point for creating new design files for the WorkSet. New design files are created using OHDOT Create Design Files application. The application is accessed from the **OHDOT** Workflow by selecting the **OHDOT Create Design Files** icon as described earlier in this document.



## OpenRoads Software Version

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This document was prepared using the following software version:

OpenRoads Designer CONNECT Edition – 2020 Release 2 Update 8 – Version 10.08.00.88

## Contacts

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For any questions, suggestions, or problems with this document please contact the ODOT Office of CADD and Mapping Services by use of the following form on the ODOT website:

[https://odot.formstack.com/forms/cadd\\_servicerequest](https://odot.formstack.com/forms/cadd_servicerequest)

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