Attach a Shapefile (.SHP) as a Reference to Your Project Data
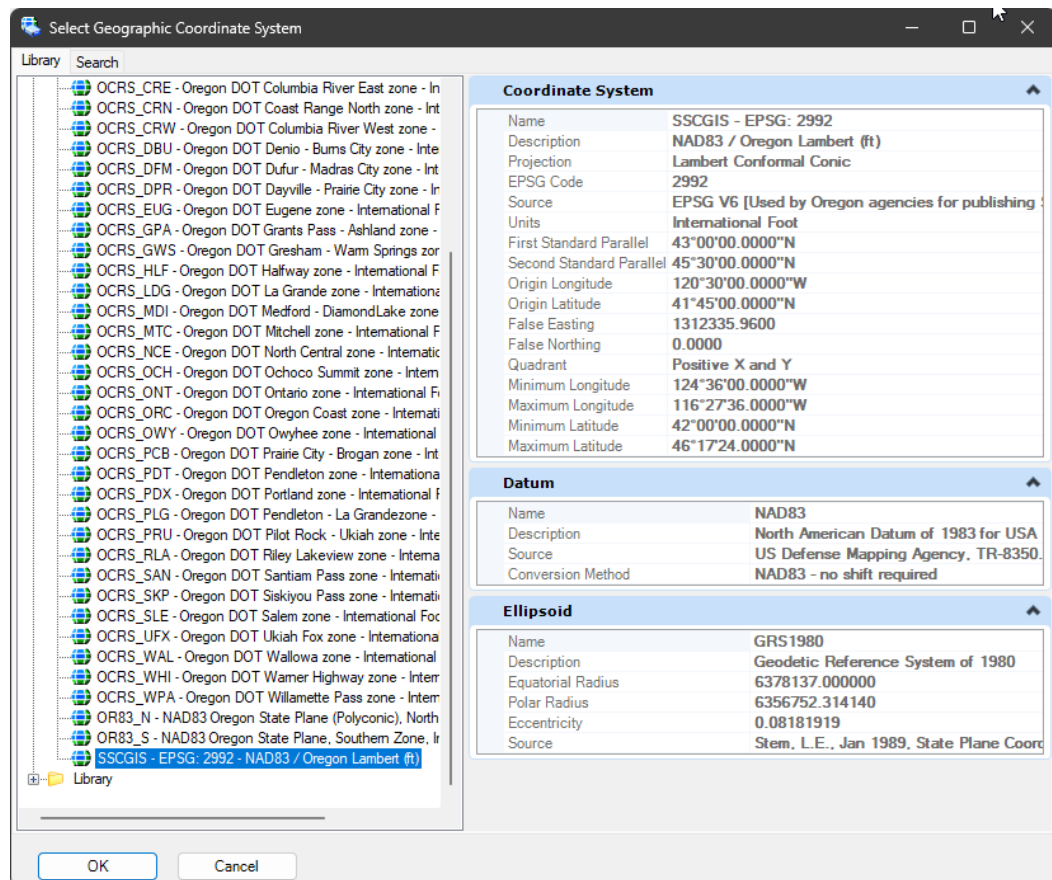
This document will show you the few quick steps to attach a shapefile (.shp) as a reference to a DGN with a geographic coordinate system attached. The result will be a DGN file that you can attach as a reference to your project data. We will take the steps to merge the shapefile into a DGN because you only get one geographic reprojection. With this scenario, the reference geographic reprojection will be from a DGN to a DGN.

Why would you want to? Sometimes you will receive the outline of an area of potential impact from a GIS viewer and you need to show that outline on an exhibit that you are preparing in a DGN file. Maybe the shapefile is from the NFHL Viewer (National Flood Hazard Layer). The instructions are the same for MicroStation, OpenSite Designer, and OpenRoads Designer.

Create a DGN file with the Shapefile Coordinate System – Merge the Shapefile

The .prj file in the group of files provided as an export from a GIS Viewer shows the "NAD_1983_Oregon_Statewide_Lambert_Feet_Intl" geographic coordinate system and the "Lambert_Conformal_Conic" projection as what is used for the shapefile in this example.

1. Create a new DGN file from a 2D seed, e.g. API Shapefile.dgn
2. Open the Geographic Coordinate System tools from the **Drawing>Utilities>Geographic>Coordinate System** button.
3. Select the **From Library** icon.
4. Expand the ODOT_Favorites, select **SSCGIS – EPSG:2922 – NAD 83** from the bottom of the list and click **[OK}**.
5. Save the settings.

6. Attach the shapefile as a reference Coincident World. To select the shapefile, you may need to set the filter on Files of Type: to All Files (*.*) or Shapefiles (*.shp).
7. In the References dialog, select the reference and choose **Tools>Merge Into Master**, left click in the view, and click [OK] on the Alert dialog.
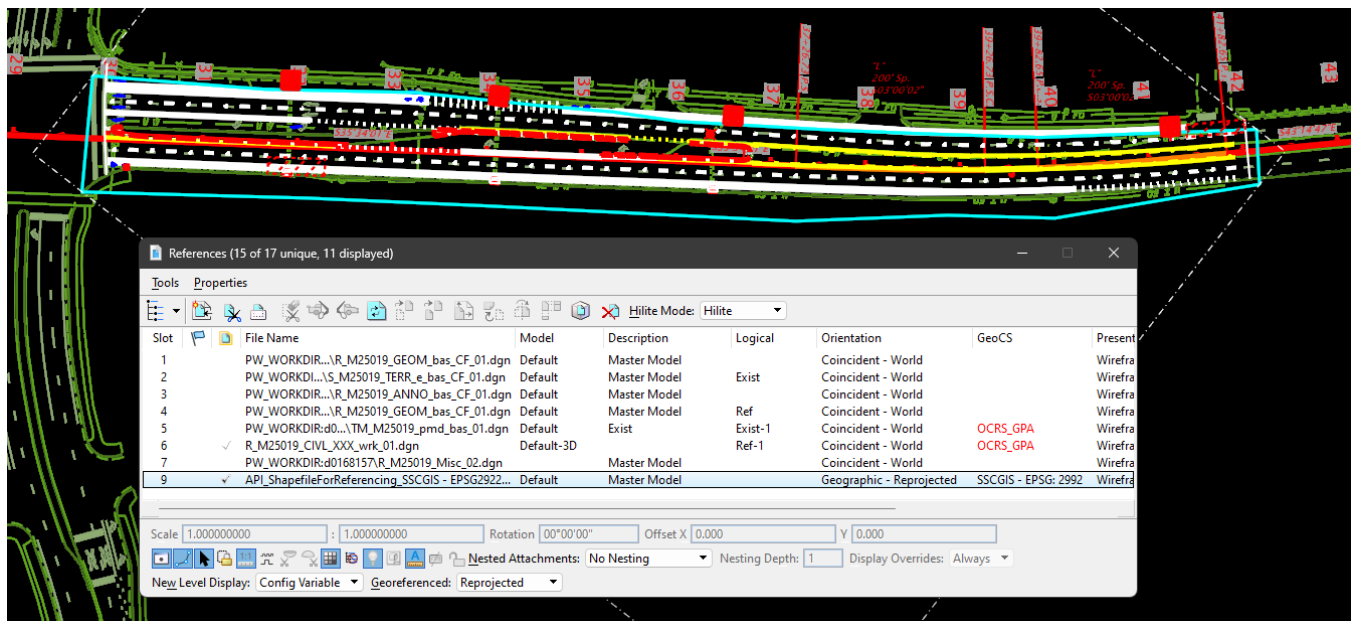
Geographically Reproject the Shape (DGN) onto Project Data (DGN)

You now have a DGN file with a geographic coordinate system attached and a simple MicroStation shape drawn in it. The shapefile (.shp) is no longer needed. Give the shape whatever properties for color, linestyle, and weight that you would like.

To display the shape from the GIS Viewer in your project:

1. Open your project data or the DGN file in which you are creating your exhibit (must have a GCS attached).
2. Attach the API Shapefile.dgn as a reference, using Geographic-Reprojected.

This will reproject the shape that uses the SSCGIS geographic coordinate system onto your project data using an OCRS geographic coordinate system.

Please note that neither shapefiles, nor survey data will line up perfectly with Bing Map backgrounds. You should expect to see the Bing Map background misalign by up to 10 feet. The reason is the Bing Map background cannot be reprojected well into SSCGIS or any OCRS geographic coordinate system.