

EXPORTING POINTS FROM CIVIL 3D 2016 FOR USE IN ARCMAP

This help sheet covers the process of exporting points from Civil 3D 2016 as a .SHP file for use in ArcMap. It is assumed the points to be exported are already part of an existing drawing with an assigned coordinate system.

For instructions on starting a new drawing, refer to Wisconsin NRCS help Sheet “Starting a New Drawing”:

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=stelprdb1264843>

For instructions on creating points in Civil 3D, refer to Wisconsin NRCS Help Sheet “Creating Points”:

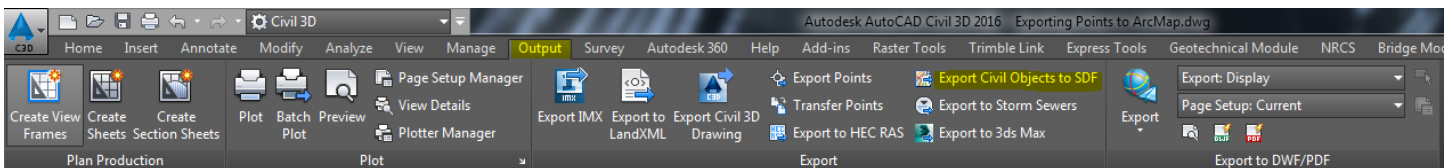
<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=stelprdb1264843>

Exporting Civil 3D point data is a three-step process.

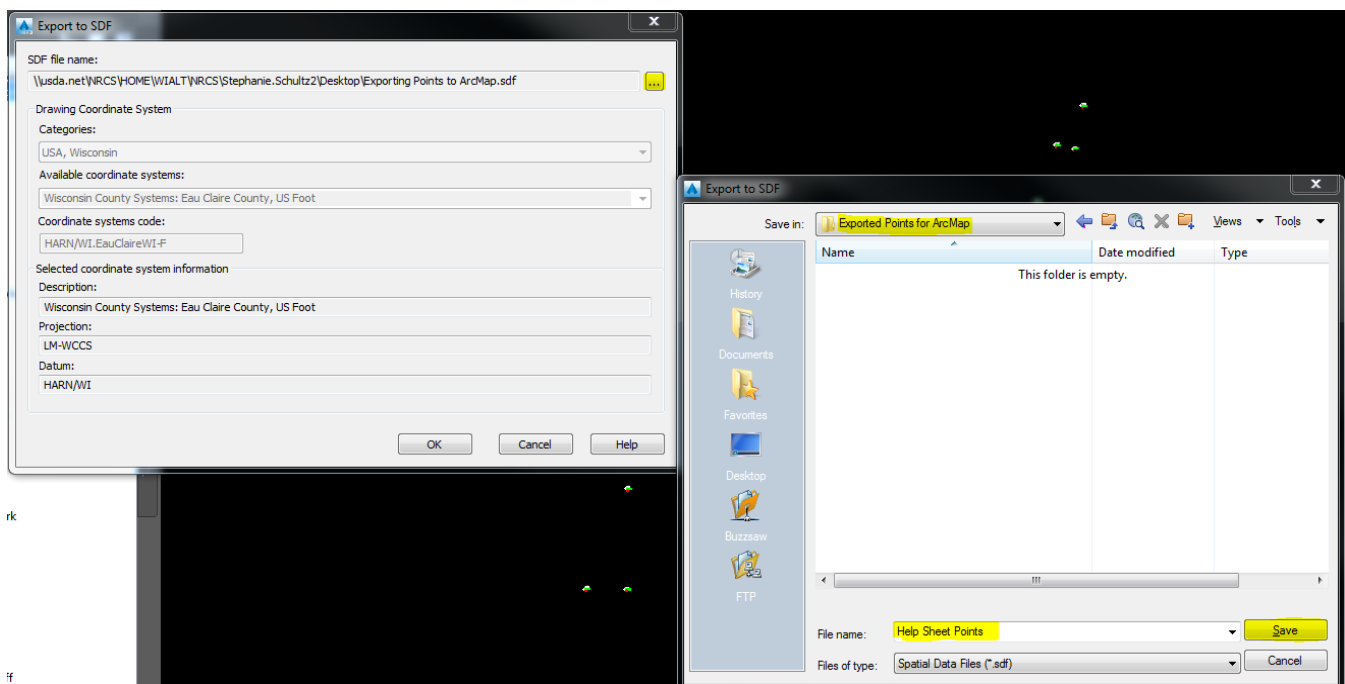
Step 1: Export Civil 3D Point Data as a Spatial Data File (.SDF)

Open the Civil 3D drawing with the points you wish to export to ArcMap.

- Click on the *Output Tab* on the ribbon → Click *Export Civil Objects to SDF*



- The Export to SDF dialog box pops up → Choose a location to save the .SDF file on your computer by clicking on the ellipsis → Give the points a name and choose or create a file to save them in → Click *Save*.



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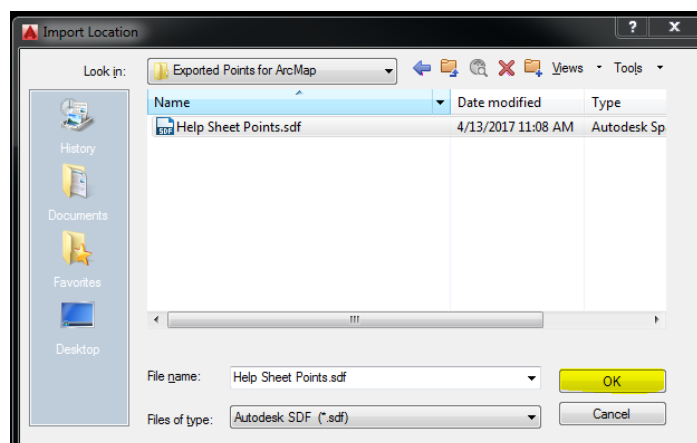
- In the Export to SDF dialog box check that the drawing coordinate system information is correct → Click *OK*.
- You will see the following message on the Command Line:



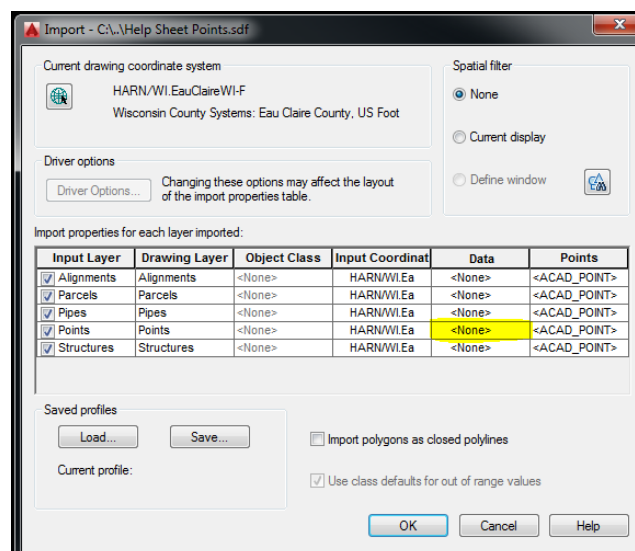
This message is nothing to worry about. It is just telling us we only exported points. We did not export pipes or structures.

Step 2: Import the Exported Points Back Into Civil 3D

- Type MAPIMPORT on the Command Line → The Import Location dialog box pops up → Map to and select the .SDF file we exported in step 1 → Click *OK*

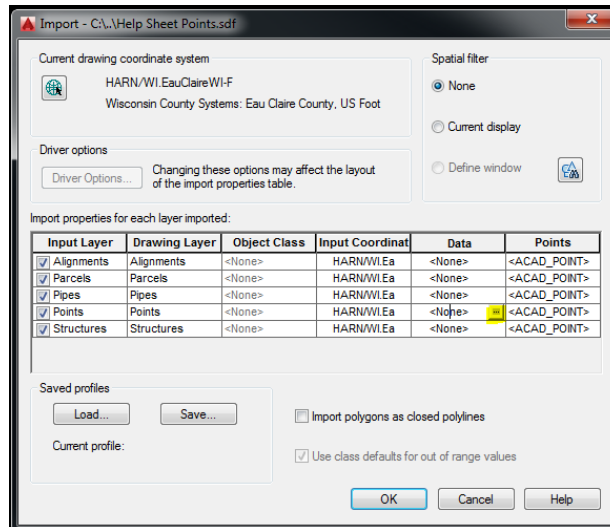


- The Import – (Your Location) dialog box pops up → **Note: The next step is CRUCIAL in ensuring the export is successful!** → Click the cell in the DATA column for the Points Input Layer

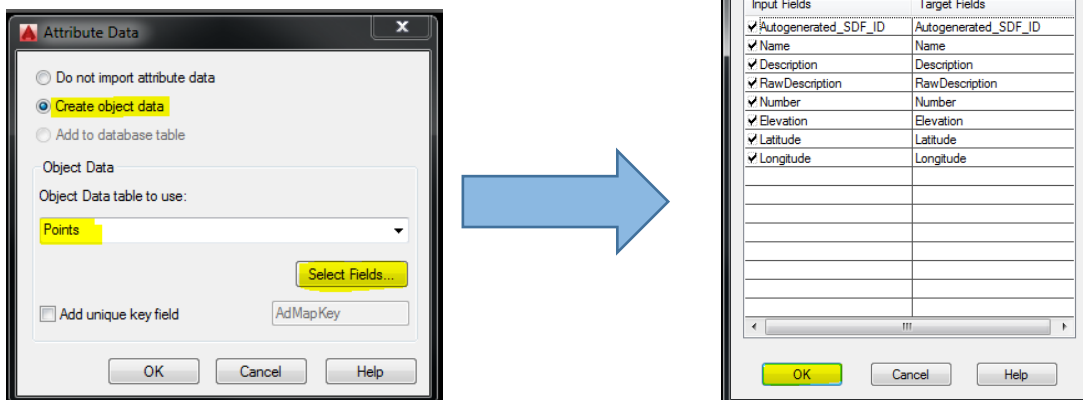


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- Click the options button in the cell



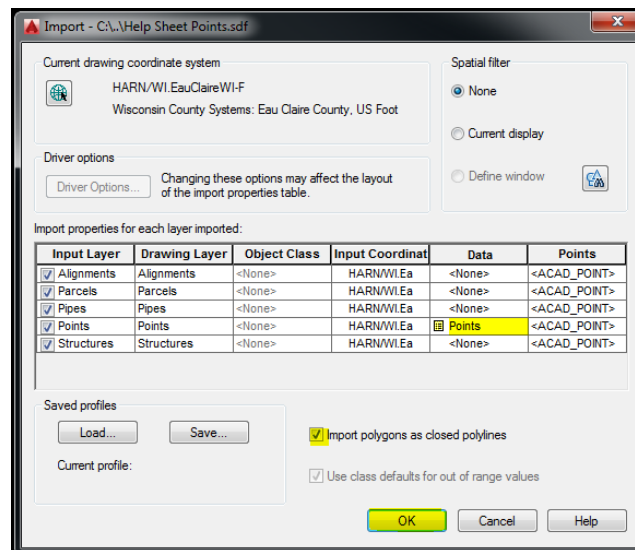
- The Attribute Data dialog box pops up → Click *Create Object Data* → Make sure the *Object Data Table to Use* is set to POINTS → Click *Select Fields* → Choose the desired information for the point group. In this case we will leave all the attributes checked → Click *OK*



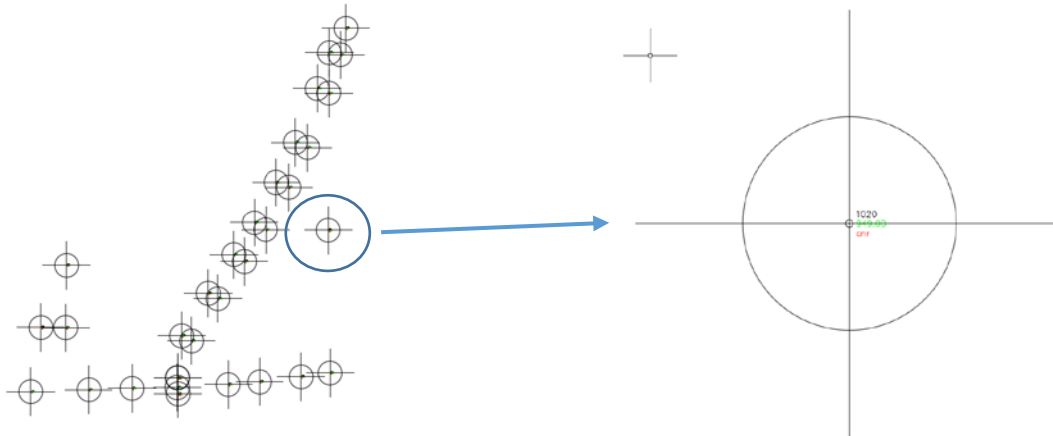
- The Object Data Mapping Dialog box closes → Click *OK* on the Attribute Data Dialog box. You will see the cell in the Data column for the Points Input Layer is now occupied. Check the box for *Import Polygons as Closed Polylines* → Click *OK*.



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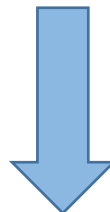


The points in your drawing now have an additional symbol attached to them:

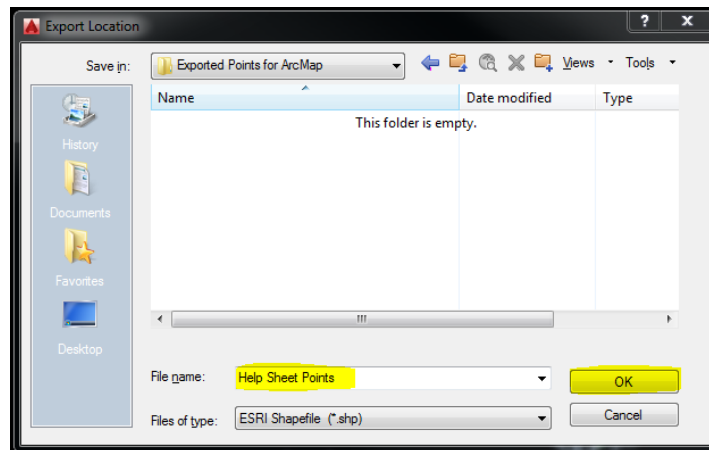


Step 3: Export Point Data as Shapefile (.SHP)

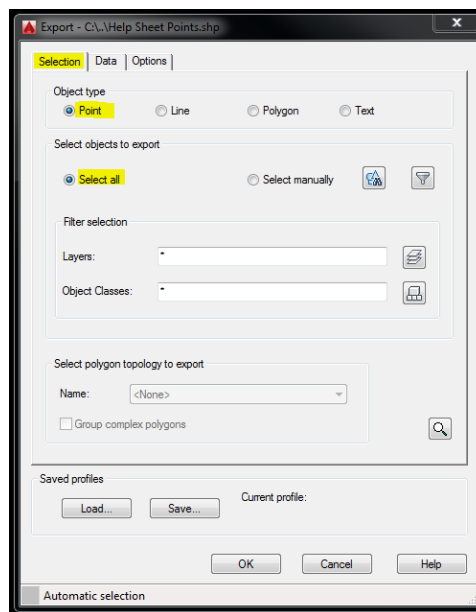
- Type MAPEXPORT on the command line → The Export Location dialog box pops up → Map to the location where you will save the .SHP file → Give the file a name → Click *OK*



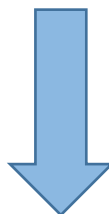
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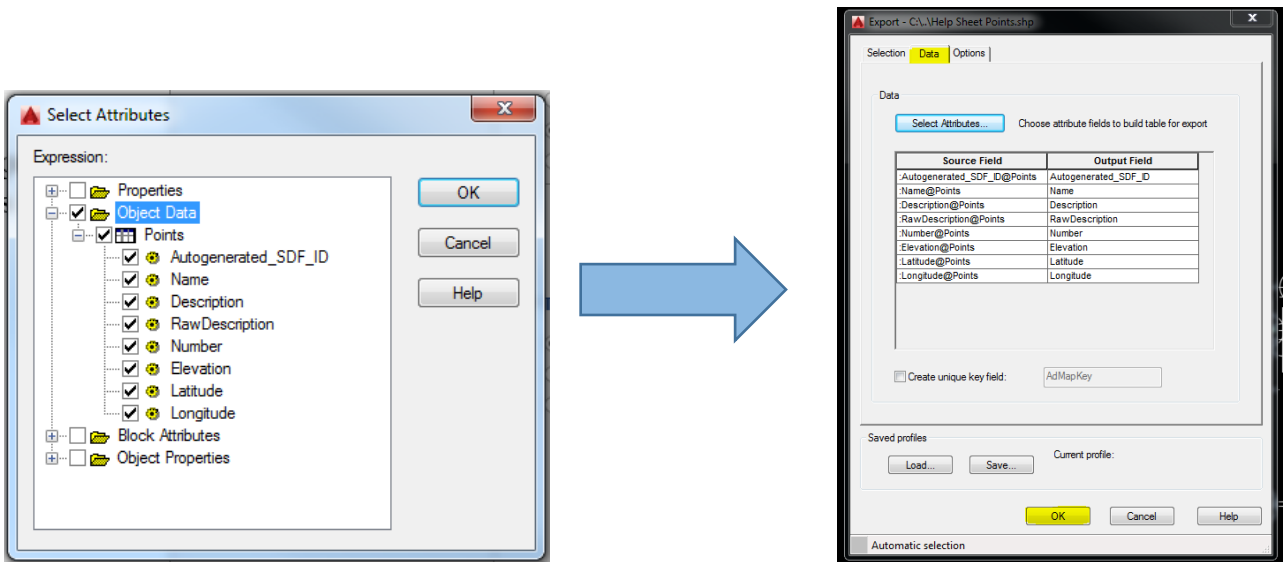
- The Export – (Your Location) .SHP dialog box pops up → Under the Selection Tab make sure *Object Type* is set to *Point* → You can either choose *Select All* or *Select Manually*. We will choose *Select All* so all of the points will be exported to the .SHP file



- Click the Data Tab → Click *Select Attributes* → The Select Attributes dialog box pops up → Expand *Object Data* → Select the desired attributes under Points. In this case we will choose all attributes by checking the box in front of Points → Click *OK* → The Attributes dialog box closes and the Source Field cells are now filled with the chosen attributes → *Note: If you need to convert the coordinate system of the points to a different coordinate system, click the Options Tab, Click the “Convert Coordinates To” box; and choose the coordinate system and then click OK* → If you do not need to convert the coordinate system just click *OK*.



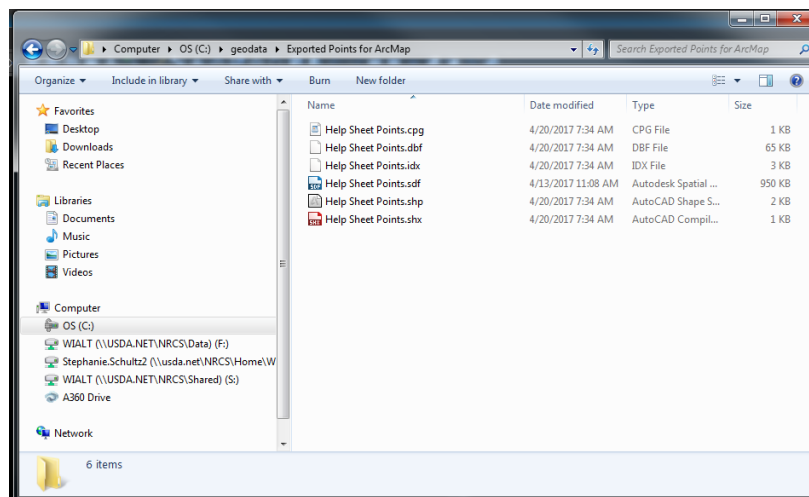
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If the above steps have been performed correctly you will see a message on the command line saying your objects have been exported.



If you map to the location where you saved the .SHP file, you will see Civil 3D has created a series of files. These files must be stored in the same project folder in order for them to be used in ArcMap.



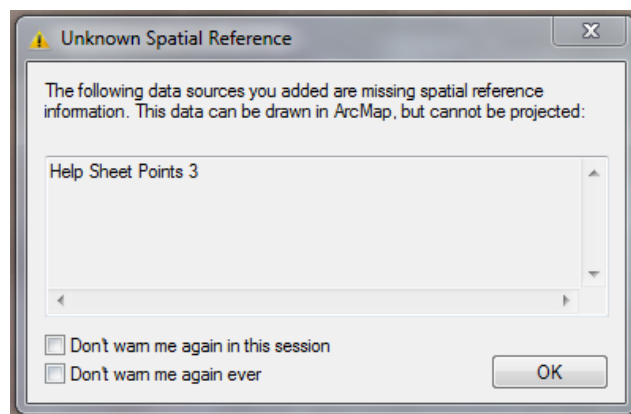
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The following is a brief description of the file types created:

- **.cpg:** (ESRI Code Page File) An optional file that is used to specify the code page for identifying which character set to be used in ArcGIS.
- **.dbf:** (dBASE Table File Format) A required file. The dBASE stores attribute data and object IDs.
- **.idx:** (Index File) An index file used in Windows to speed up the search process in a database.
- **.sdf:** (Spatial Data File) A single-user geodatabase file format developed by Autodesk. The file format is the spatial data storage format for Autodesk GIS programs like Map 3D.
- **.shp:** (Shapefile) A required file. The main file that stores the feature geometry.
- **.shx:** (Shapefile Spatial Index) A required file. The index file that stores the index of the feature geometry and is used to search forward and backwards.

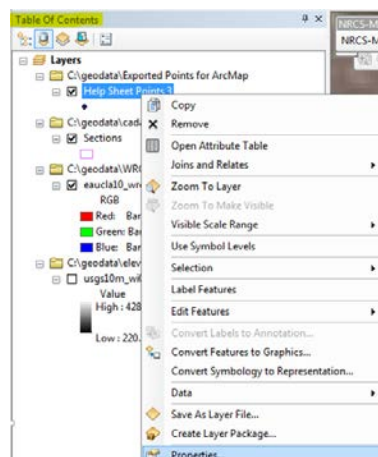
In ArcMap:

The .shp file is now ready to be added to ArcMap in the same manner you typically add data to the map. In some cases if you are exporting points from Civil 3D with county coordinates to an ArcMap template set up with county coordinates for the same county, you will receive an error message:



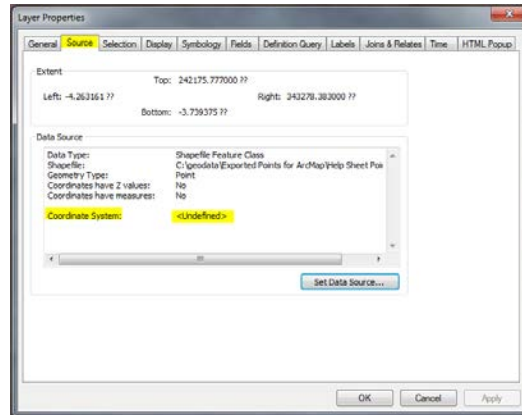
This error message is caused by the difference in *names* of the coordinate systems between ArcMap and Civil 3D. The projections themselves are the same. To fix this:

- Click *OK* → The points appear in what looks like the correct location even though they are not projected. → Right click on the newly added point layer in the *Table of Contents* → Click *Properties* →



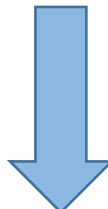
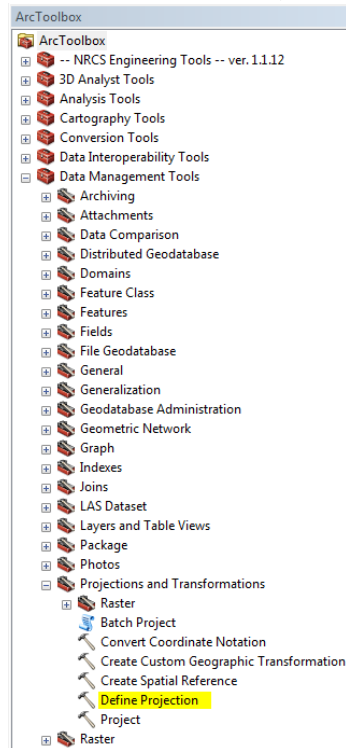
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- Click the Source Tab → The Coordinate System for the newly added points layer is listed as <Undefined>.



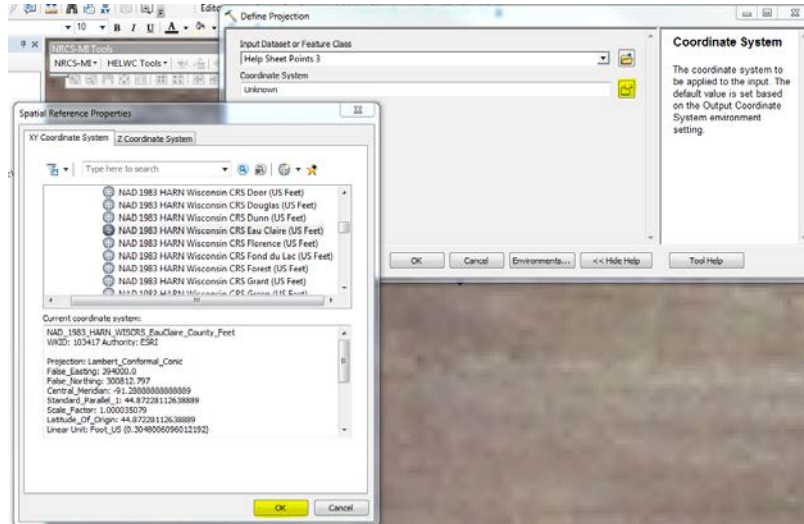
To change this:

- Click *OK* to close the Layer Properties dialog box → Open *Arc Toolbox* by clicking on the icon  → Expand *Data Management Tools* → Expand *Projections and Data Transformations* → Double click *Define Projection*



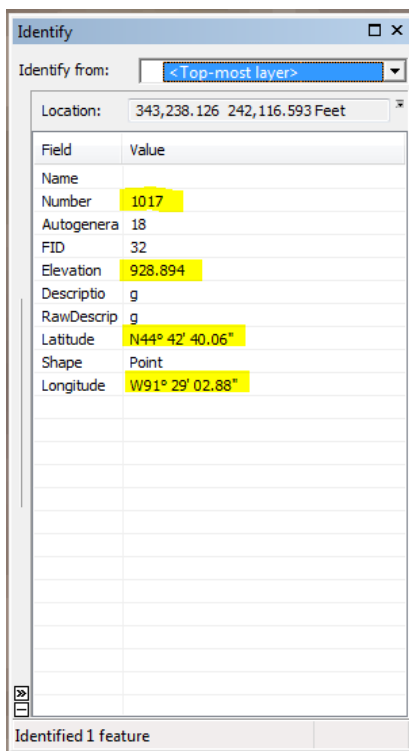
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- The Define Projection dialog box pops up → Input the *Dataset or Feature Class* you want to define (in this case the newly added point layer) by clicking the down arrow and choosing the layer name → Click the button next to the Coordinate System field and choose the county coordinate system assigned to your base map → Your point layer now has an assigned coordinate system → Click *OK* → Click *OK* again to close the Define Projection dialog box.

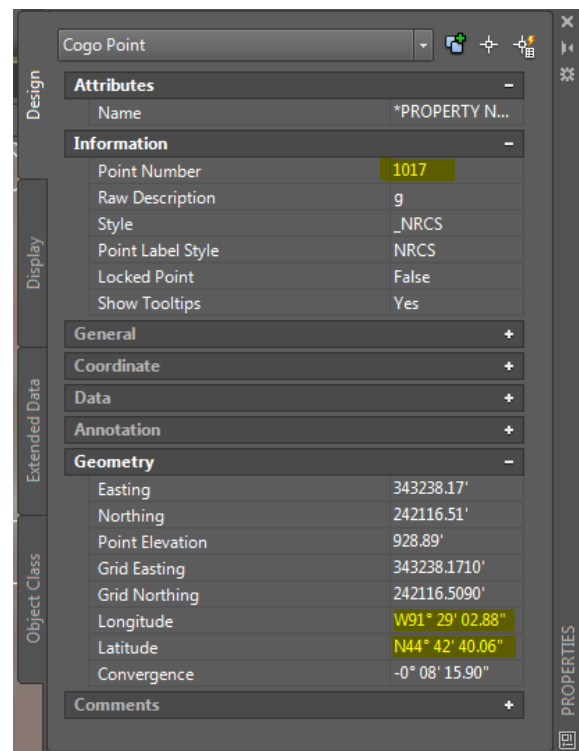


The point data in ArcMap matches the point data in Civil 3d:

Point #1017 in ArcMap:



Point #1017 in Civil 3D:



You can now continue with your project in ArcMap.