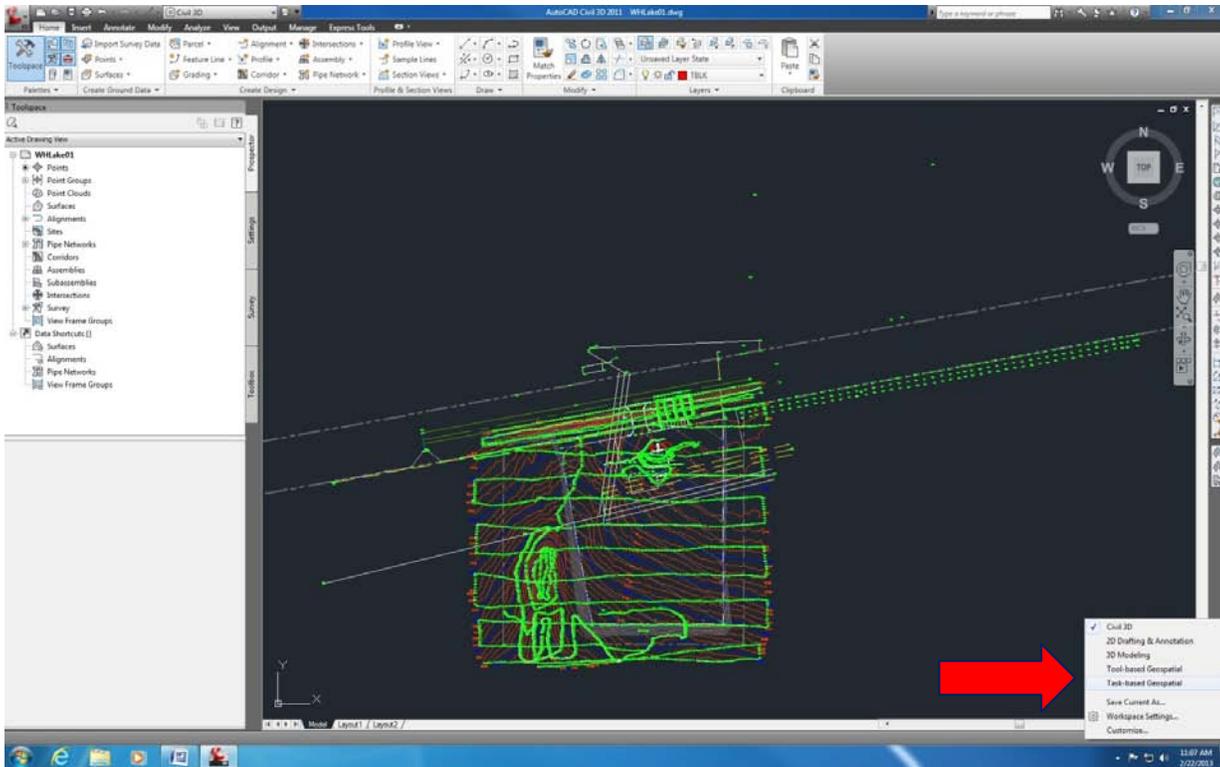AutoDESK Civil 3D 2011

Creating the Navajo Nation Coordinate System (NNCS)

Prerequisites: Angle units set to DMS and distances to meters or feet or US feet. Your preference.
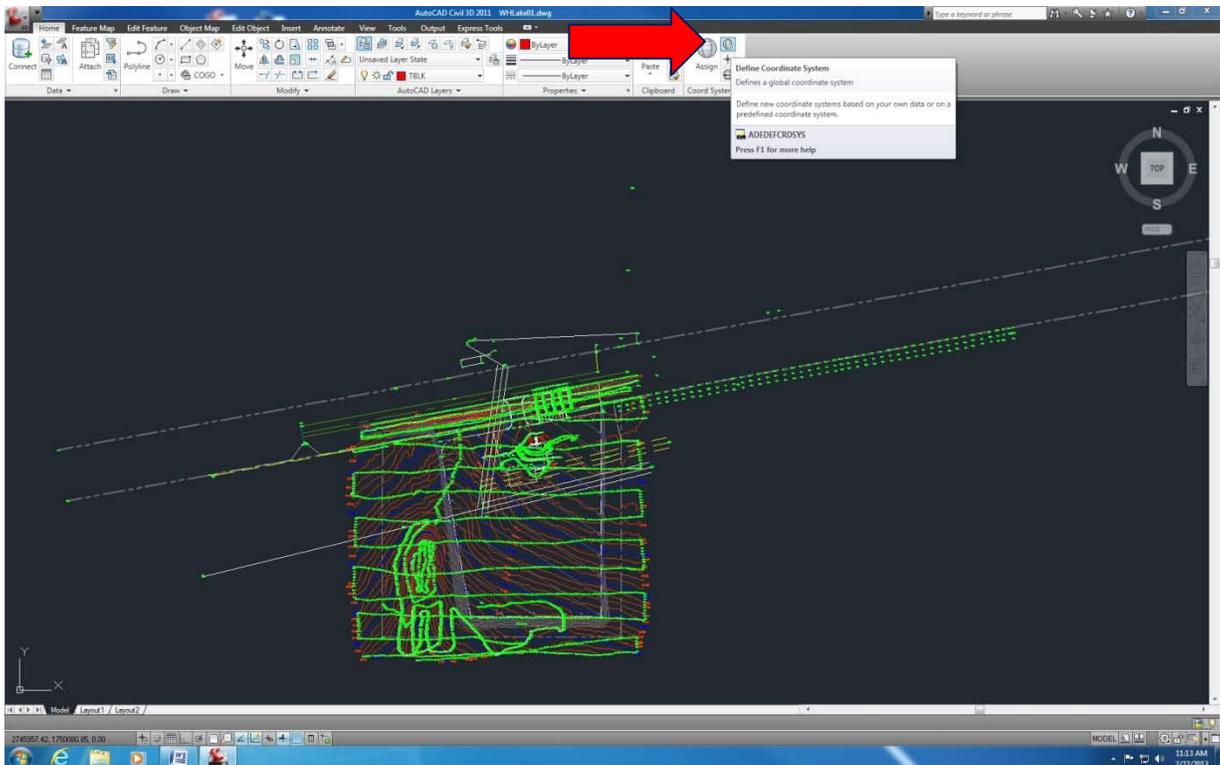
Step 1

Switch your workspace to "Task-based Geospatial"

Step 2

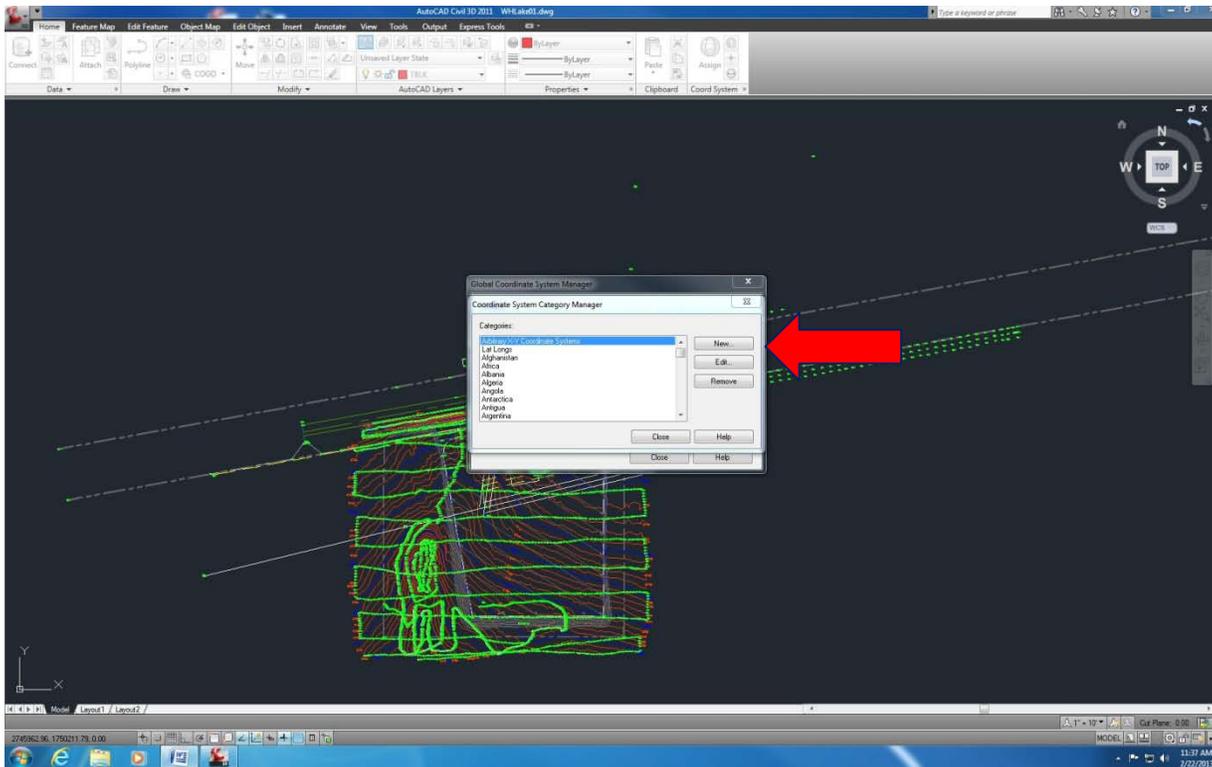In the "Coord System" ribbon select the "Define Coordinate System"

Create a Category

Step 3

In "Global Coordinate System Manager" dialog box select "Category Manager…" button

Step 4

In "Global System Category Manager" dialog box select "New…" button

Step 5

In "New Category" dialog box type "USA, Navajo Nation" in the "Category Name" field

Note: The "Coordinate System Category Manager" dialog box will appear and your newly created projection should also appear highlighted. If not repeat step 4 and continue.

"Close the dialog box.

Step 6

In the "Global Coordinate System Manager" dialog box in the category field "USA, Navajo Nation" should be displayed. Select the "Define..." button.

Step 7

In the "Define Global Coordinate System" dialog box enter "NNCS" in the "Code:" field. Set units to meters or feet, your preference. In the "Description" field type "Navajo Nation Coordinate System". Verify in the "Coordinate System Type" section "Geodetic" is selected.

Step 8

In "Coordinate System Type" section below the "Datum:" field, pick the "Define…" button. The "Datums Manager" dialog box will appear. In "Datums Manager" dialog box scroll and highlight "NAD 1983, Alaska, Canada, Continental US, Mexico, Central America" and close the dialog box. Verify in the "Define Global Coordinate System" dialog box the "Datum" field is set to "NAD 1983, Alaska, Canada, Continental US, Mexico, Central America".

Step 9

In the "Define Global Coordinate System" dialog box select the "Projection" tab. In the "Projection" field pick the down facing triangle. A drop down dialog box will appear. Highlight "Lambert Conformal Conic, single standard parallel".
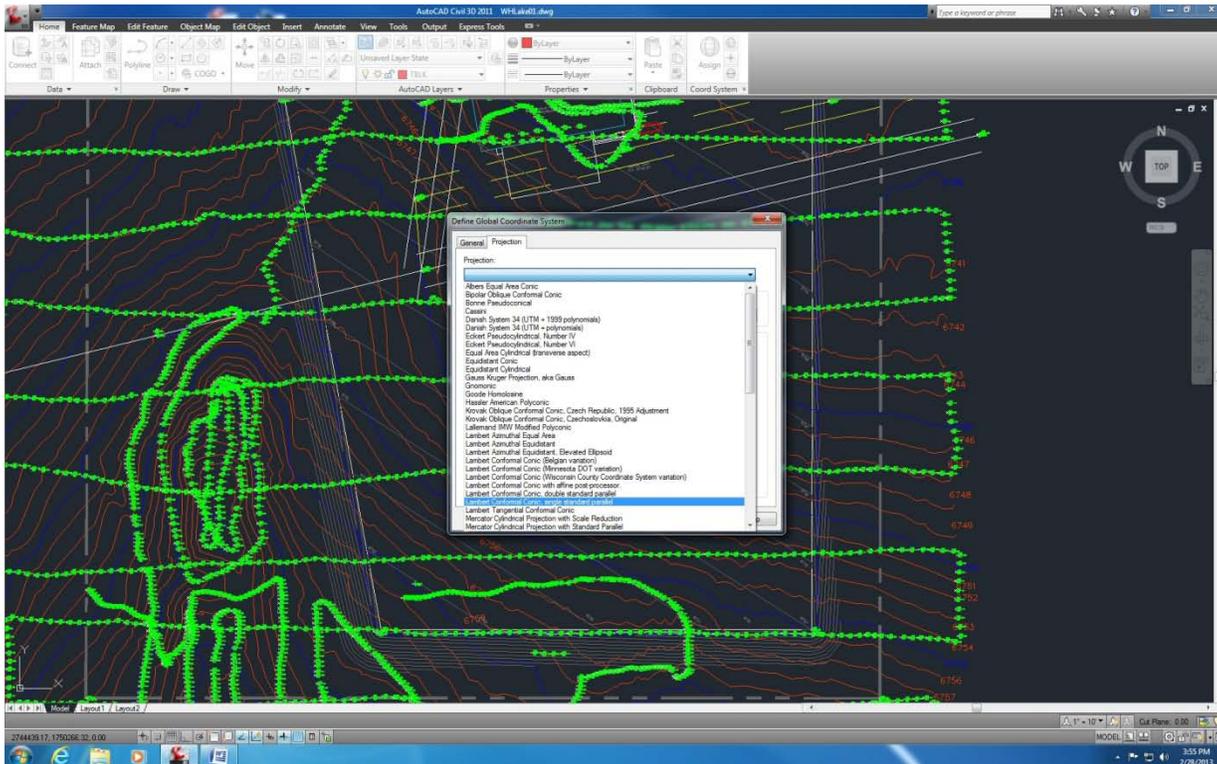
Step 10

In the "False Origin" section, type "300000.0000" in the "Northing:" field. Type "600000.0000" in the "Easting:" field.

Note: Be aware the units given here for the false origin are in meters. Convert to feet using your calculator if your projection is in feet. All calculators use international feet unless specifically set to US feet (very rare). Separate projections have to be created for different units when using C3D.

Step 11

In the "Projection" tab under the "Projection Parameters" section, type "36d0'0.0000" in the "Origin latitude" field. Type "109d30'0.0000" in the "Origin longitude" field. In the "Scale reduction" field type "1.00023" exactly.

Note: Your DMS format can be changed in the "Units" dialog box if you prefer DD. This setting should be applied prior to creating the NNCS.

Step 12

Pick the "OK" button and exit the "Define Global Coordinate System" dialog box.

Note: Variables can be reviewed or changed at the "Global Coordinate System Manager" dialog box by highlighting the newly created Coordinate System and picking the "Modify…" button. Coordinate systems can easily be deleted in the "Global System Category Manger" by highlighting the system and picking the "Remove" button. From this point you can accept the coordinate system as is or recreate with the correct variables.

Step 13

Close the "Global Coordinate System Manager".

Step 14

Return to the "Civil 3D" workspace.

Note: If command line is not visible type "commandline".

Step 15

Review your "Drawing settings" and change the zone to "USA, Navajo Nation".

Note: At this point your existing coordinates will not change but they will now be associated to the NNCS projection. As the CAD Operator it is your responsibility to ensure the coordinates shown or published are correctly associated with the correct projection i.e. if your coordinates are in NM State Plane West, US Feet your Zone should be set as such and not USA, Navajo Nation. In this case you will have to do the coordinate transformation prior to taking your points to NNCS. Always be aware of the units you are using before importing points into you project.

Congratulations!! You have created the NNCS projection and it should be available on all future new C3D projects. When upgrading be aware the projection may be removed. If that is the case you may have to repeat this whole process once again.