

# Custom Coordinate Reference System Setup

In some cases you may need to use geospatial data referenced to a local, specialized coordinate reference system (CRS) such as might be used by a municipality, county, island, or small country. Such CRSs may require a combination of coordinate system and projection parameters not found in any of the predefined coordinate systems available in the TNT products. The steps and illustrations below show how to use the Coordinate Reference System window controls to enter the coordinate system, projection, and other parameters required to set up the custom CRS for use in the TNT products.

An example is shown in the box to the right: the CRS used by Lancaster County, Nebraska for all geospatial data produced by city and county agencies. Although this county CRS is available from the Predefined list in the Coordinate Reference System window, its parameters are used in the sample illustrations below.

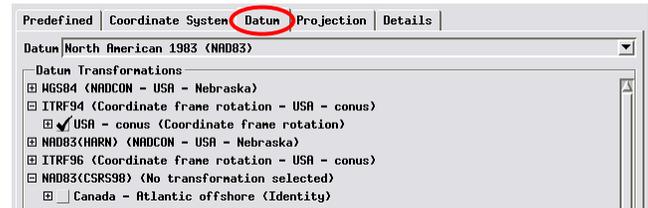
**Coordinate Reference System**  
**Lancaster County, Nebraska**  
 Datum = North American (1983 NAD83)  
 Coordinates: 2D Planar, Unit = Foot  
 Projection Parameters:  
 Projection = Transverse Mercator  
 Latitude of Origin = N 40° 15' 00.000"  
 Longitude of Natural Origin  
 (Central Meridian) = W 96° 41' 17.000"  
 Scale Factor = 1.00005462  
 False Easting = 164041.66666667  
 False Northing = 0.00000000

1. Select the desired coordinate system from the menu on the Coordinate System tabbed panel. All 2D planar coordinate systems that use a map projection have entries beginning with "Projected:", followed by the coordinate type (e.g., "Easting, Northing"; "Westing, Southing") and the measurement unit. Other non-planar Coordinate Systems are included such as Universal Polar Stereographic for north or south polar regions and Geographic 2D: longitude, latitude. In the illustration to the right "Projected: Easting(E), Northing(N) [feet]" has been selected.



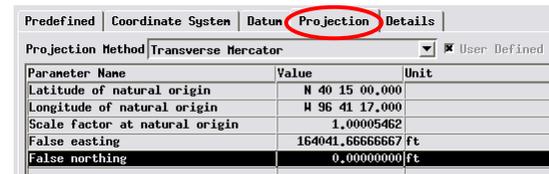
NOTE: to set up a local CRS that is not referenced to an Earth datum (such as for a construction or engineering project), simply choose one of the two "Cartesian 2D: X, Y [units]" entries (where *units* = feet or meters) from the Coordinate System menu. This action automatically designates the datum as "Local Engineering".

2. Select the desired datum from the menu on the Datum tabbed panel. In this example the North American 1983 (NAD83) datum has been selected. You should also choose a direct datum transformation for each datum listed in the Datum Transformations list. If no transformation to the target datum is geographically appropriate for a particular datum, you can toggle off its default transformation, as shown here for NAD83(CSR98).



Selecting a coordinate system automatically activates the Projection tabbed panel. On the Projection panel take the following steps:

3. Select the desired projection from the Projection Method menu. Here the Transverse Mercator projection is shown selected.



4. In the Value column of the table enter the specific values of the projection parameters associated with the selected projection method. In this illustration the values for the Lancaster County, Nebraska CRS have been entered. Entries in the Unit column are automatically filled in from the coordinate system you have selected.

5. Press OK on the Coordinate Reference System window to complete the setup for the current process. The custom CRS also is added to the Recent grouping on the Predefined tabbed panel of the Coordinate Reference System window.

## Saving a Custom Coordinate Reference System

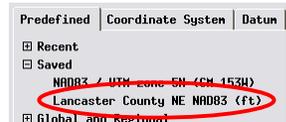
You can save a custom CRS for routine future use by pressing the Save As button at the bottom of the Coordinate Reference System window. The Save Coordinate Reference System window opens and shows a default name for the CRS based on the selected datum and coordinate system. You can edit the Name field to provide a more informative CRS name if desired.



Radio buttons on the Save Coordinate Reference System win-

dow let you choose whether to save the CRS for use by any user of the computer ("All users") or as a private CRS for the use of only the "Current user".

Once you have saved the custom CRS, it appears in the Predefined selection list of the Coordinate Reference System window within the Saved grouping.



Right-clicking on the name of a CRS in the Saved grouping pops up a menu allowing you to either rename the saved CRS or to delete it.

