

Spatial Editor

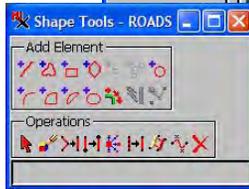
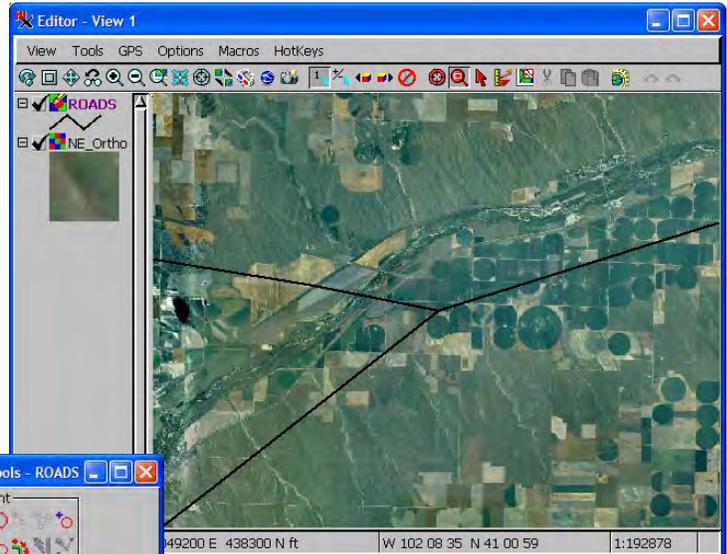
Direct Editing and Creation of Shapefiles

Shapefiles are collections of files with the same name but different extensions. These separate files contain the elements (*.shp), a database table (*.dbf), a georeference (*.prj), drawing styles (*.avl), and so on. When you select a shapefile from within your TNT products, you see only the files listed with the *.shp extension. Shapefiles by convention have only one database table and one element type: lines and multi-lines, polygons and multi-polygons, or points or multi-points.

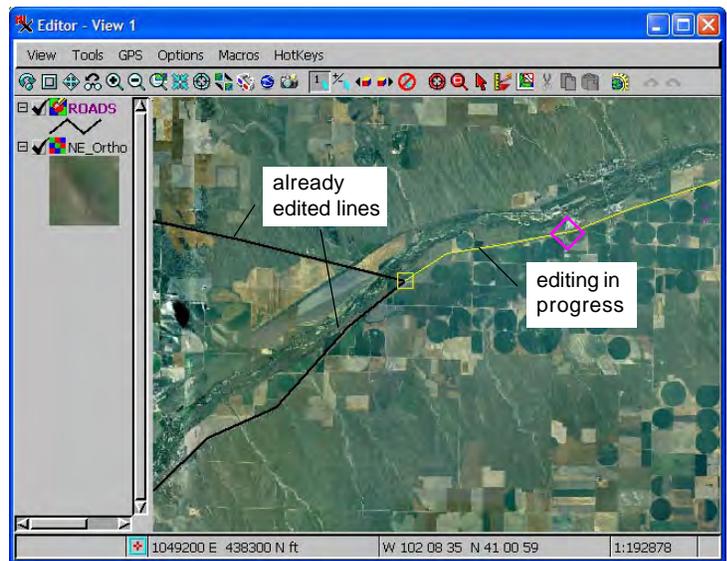
Just as you can select shapefiles for display as shape objects in the TNT products without first importing them, you can create or edit shapefiles in the Spatial Editor. When you select a shapefile for direct editing, changes are updated to the linked shapefile as they are made, which means there is no Undo. When creating a new shapefile, you are prompted to select a shapefile and you click on the new file button and name it at that time. The New Object Values window then opens so you can set the georeference, the coordinate type (2D-XY or 3D-XYZ), and the element type (point, multi-point, line or polygon). The next step is to create the required database table. You then commence editing in place.

There is a different set of editing tools when linked to shapefiles than for vector or CAD objects because not all tools are appropriate for each object type. Additionally, the element type of the object affects which of the shape tools are active. For example, the Add Line, Add Point, and Add Multi-Point tools are inactive for shapefiles with polygons as their element type. The tools that are common between these sets, operate in the same manner for all object types. For example, the common line editing tool switches between inserting vertices and repositioning existing vertices as you edit the line depending on whether there is a vertex near the cursor. A vertex will be inserted if the marker along the line is a diamond (◇) or grabbed if the marker is a plus (+).

Shapefiles viewed in ESRI products have only one associated table, which is in DBF format. You can add tables when editing your shapefile and they will be stored in a transparent linked file and only be viewable and editable from within the TNT products. Internal shape tables, like vector and unlike CAD tables, can have an implied one-to-one attachment type (one element per record, record number equals element number), which is very handy for setting up multi-line DataTips for a single layer. All the records are created for you automatically and you can use computed fields to pull in data from other tables. Shapefiles



The road lines in this shapefile need adjustment to fit the roads shown in the orthophoto used for reference.



The line can be quickly moved and reshaped with automatic switching between grabbing an existing vertex or end or inserting a vertex at a new location.

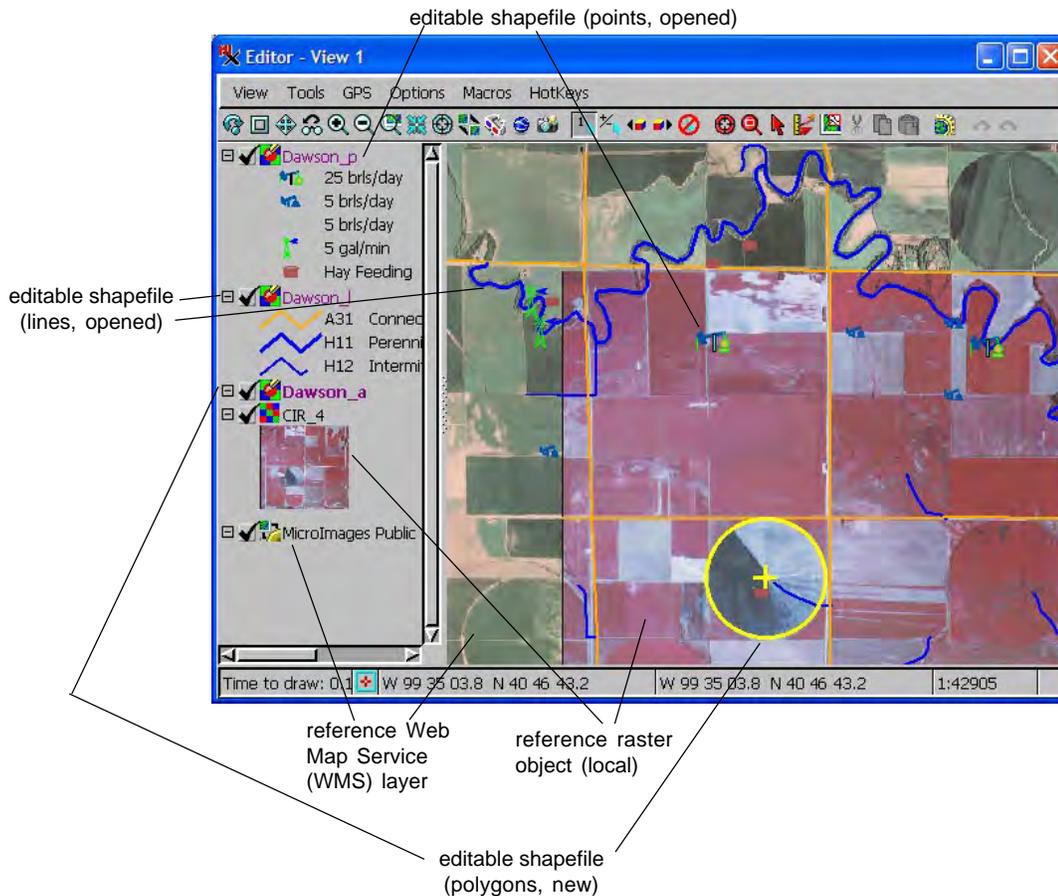


DataTip for line in a single shapefile with a supplemental database table

do not have nodes, but do have a simple topology. For example, islands (polygons completely inside another polygon) are kept track of. If you draw or edit a polygon so that it crosses itself, you automatically create a multipolygon with the same attributes for each component polygon.

If you want to edit a copy of your data and have the Undo capability available, choose Object/Open External/ArcView "Shapefile" Format in the Editor Layer Manager window. This selection imports the shapefile to a

vector object, provides an Undo capability, and when you are ready to save changes, the object is exported to a shapefile. You also have the option of saving this copy of your shapefile as a TNT vector object by turning on the Convert to internal format toggle in the Object Properties window. Although there is no Undo when editing shapefiles directly, you have the option to save or cancel editing changes for the element currently being edited. Once you elect to save changes, they cannot be undone.



Because each shapefile can contain only one element type, interpretation of imagery or editing existing shapefiles may require three different shapefiles, one each for points, lines, and polygons. In this illustration, two existing shapefiles have been opened for editing (points and lines) while a third was created as a new, polygon-containing shapefile.

