

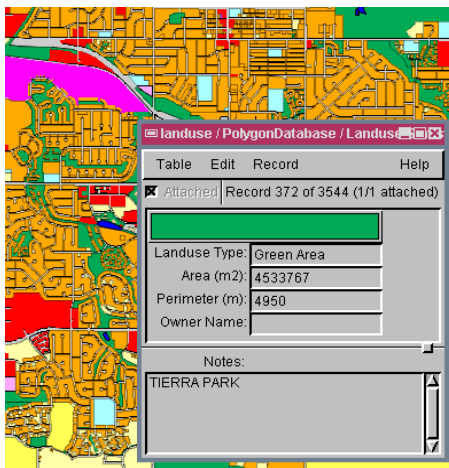
# Urban Planning

Urban Planners need to integrate a variety of data from multiple sources and produce electronic and paper maps when making spatial decisions about how cities grow and develop. TNTmips provides powerful tools for electronic and paper map production that require attributes, special symbology, and integrated analysis and presentation tools etc. With GIS, image processing, 2D/3D visualisation and geospatial analysis tools, TNTmips help planners create, modify, and analyze spatial data to identify problems, forecast future needs, prepare urban plans and monitor their implementation. TNTmips also supports participatory planning for greater citizen involvement in spatial decision-making by providing a variety of data publishing methods such as creating electronic atlases, Google Earth overlays, 3D simulations.



## Map Creation and Editing

The TNT Spatial Editor provide a flexible environment for creating and editing your map layers in the form of Vector, CAD, TIN, shape, raster files and spatial databases.



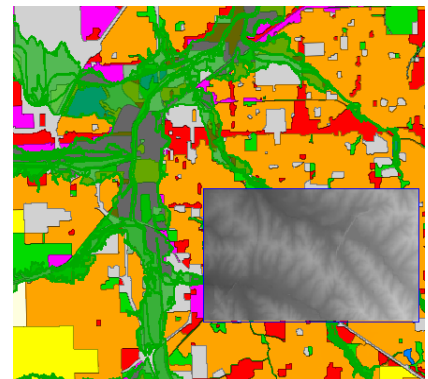
Draw and edit parcels and attach records

- **Reference layers:** map over composites of aerial or satellite images, scanned field map, contour lines, Internet servers...
- **Editable layers:** edit layers in a composite view with automatic backups and multiple undos [more](#)
- **Data integration:** generate new layers by extracting part of existing maps, combining layers, dissolving adjacent polygons based on shared attributes [more](#)
- **Relational database:** attributes for editable layers can be in relational database structure or linked to existing external database
- **Sketching:** draw sketches for interpretation and annotation on map and image layers and save results as CAD object [more](#)
- **Templates:** use templates to define relational database structure, database picklists, and styles [more](#)
- **GPS input:** read GPS coordinates to add elements to map layers

## 2D and 3D Visualization

TNTmips provides a wide range of 2D and 3D visualization options to enhance interpretation and presentation.

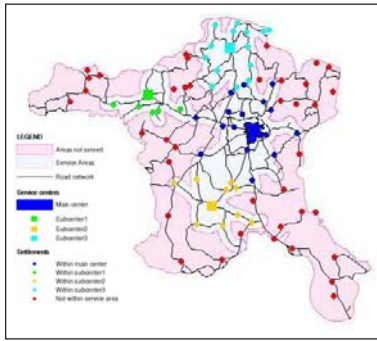
- **Data classification:** create color theme maps or graduated symbol maps for visualisation and analysis [more](#)
- **3D views:** open oblique perspective 3D views with full control over viewing geometry and visualise your overlays in 3D [more](#)
- **Visual data integration:** use transparency effects, and advanced viewing tools in 2D and 3D displays to visually integrate map data with other layers [more](#)
- **Database queries:** use queries to select elements with specific attributes to answer location specific questions [more](#)
- **Layer combination:** make queries using the associated attribute tables of objects of different types, combine the results on-the-fly using geospatial formulas [more](#)
- **Digital photo integration:** visually integrate geotagged digital photos into maps as symbols or pop-in photo keyed to cursor location [more](#)



Display transparent floodplains layer over landuse and view elevation raster layer using view-in-view when needed.

## Spatial Analysis and Modelling

Use wide variety of spatial analysis tools to derive new information from the existing layers.



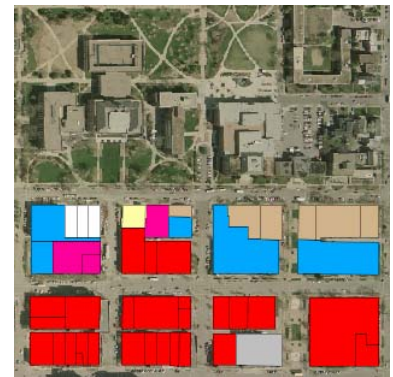
Network Analysis that classifies settlements according to which service center is closest within a distance of 50km.

- **Overlay analysis:** combine two or more layers of data covering the same area using a variety of operations (union, intersect, subtract etc.) [more](#)
- **Proximity analysis:** create buffer zones to generate a zone of a specified distance around geographic elements [more](#)
- **Topographic analysis:** use digital elevation rasters to compute, slope, aspect, viewshed, watershed, ... [more](#)
- **Network analysis:** define service areas for facility locations within the network, or find shortest, fastest, ... route connecting two or more stops [more](#)
- **Grid analysis:** subdivide larger areas into smaller regular polygon cells in a desired shape and assign attributes [more](#)
- **Multi-criteria decisions:** compare a number of alternatives based on selected criteria using Multi-Criteria Analysis [more](#)

## Remote Sensing for Monitoring and Change Detection

TNTmips includes a full range of tools for enhancing images to use for recognizing urban land cover.

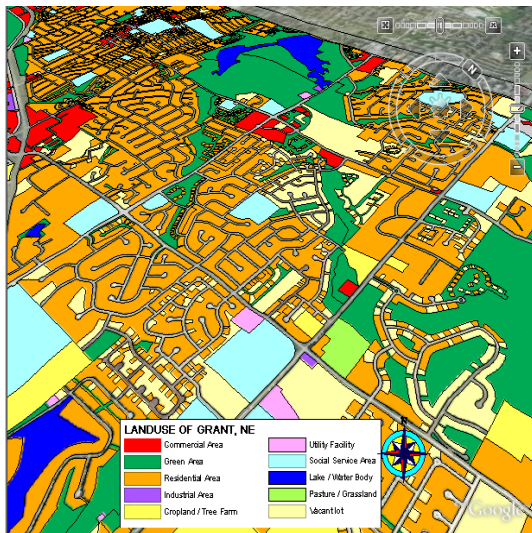
- **Integrated enhancements:** contrast enhancement and spatial filtering integrated into the display and edit processes [more](#)
- **Image rectification:** rectify and reproject base images to any map reference system, and orthorectify satellite images [more](#)
- **Multispectral image tools:** pan-sharpening for added resolution, band ratios to highlight classification [more](#)
- **Classification tools:** image classification and feature mapping to distinguish one urban land cover type from another [more](#)
- **Custom processing:** powerful geospatial scripting environment for developing custom processing and enhancement tools [more](#)



Landuse data displayed over an orthophoto.

## Publish Hard-Copy and Electronic Versions

Use TNTmips to lay out map data for printing, distribution as PDF files, or as electronic atlases.



Map Layout rendered to KML and displayed in Google Earth.

- **Complete map layouts:** make hard-copy map layouts with map grids, legends, scale bars, database tables, marginalia
- **Publish to PDF/KML:** publish map and image layouts as KML files for Google Earth or PDF files for easy electronic distribution [more](#)
- **Publish as electronic atlas:** create electronic atlases to view in MicrolImages FREE TNTAtlas product with layer control, pop-in attributes keyed to cursor location, and access to complete attribute tables [more](#)
- **3D simulations:** create 3D simulation of your geospatial data and record the simulation as a movie using FREE TNTsim3D
- **Web-based mapping:** share your maps online by publishing your electronic atlases using TNTserver, view these atlases and combine them with web layers from other sources using FREE TNT client applications [more](#)
- **Data export:** export maps and map data to wide range of geospatial and relational database formats such as shape, geodatabase, KML, SID, SVG ... [more](#)