Glossary Basic GIS Terms

Attribute - A characteristic of a geographic feature, typically stored in tabular format and linked to the feature in a relational database. The attributes of a well-represented point might include an identification number, address, and type.

Base Layer - A primary layer for spatial reference, upon which other layers are built. Examples of a base layer typically used are either the parcels, or street centerlines.

Buffer - A zone of a specified distance around a feature.

Computer Aided Design (CAD) - An automated system for the design, drafting and display of graphically oriented information.

Coordinate - An x,y location in a Cartesian coordinate system or an x,y,z coordinate in a three dimensional system. Coordinates represent locations on the Earth's surface relative to other locations.

Database - A logical collection of interrelated information, managed and stored as a unit. A GIS database includes data about the spatial location and shape of geographic features recorded as points, lines, and polygons as well as their attributes.

Digital Elevation Model (DEM) - Terrain elevation data provided in digital form.

Digitize - To encode map features as x,y coordinates in digital form. Lines are traced to define their shapes. This can be accomplished either manually or by use of a scanner.

Geocode - The process of identifying a location by one or more attributes from a base layer.

Geographic Information System (GIS) - An organized collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.

Global Positioning System (GPS) - A satellite based device that records x,y,z coordinates and other data. Ground locations are calculated by signals from satellites orbiting the Earth. GPS devices can be taken into the field to record data while walking, driving, or flying.

Layer - A logical set of thematic data described and stored in a map library. Layers act as digital transparencies that can be laid atop one another for viewing or spatial analysis.

Line – Lines represent geographic features too narrow to be displayed as an area at a given scale, such as contours, street centerlines, or streams.

Metadata – Information about a data set. It may include the source of the data; its creation date and format; its projection, scale, resolution, and accuracy; and its reliability with regard to some standard.

Ortho Imagery - Aerial photographs that have been rectified to produce an accurate image of the Earth by removing tilt and relief displacements, which occurred when the photo was taken.

Point – A single x,y coordinate that represents a geographic feature too small to be displayed as a line or area at that scale.

Polygon - A multisided figure that represents area on a map. Polygons have attributes that describe the geographic feature they represent.

Scale – The ratio or relationship between a distance or area on a map and the corresponding distance or area on the ground.

Spatial Analysis - The process of modeling, examining, and interpreting model results. Spatial analysis is useful for evaluating suitability and capability, for estimating and predicting, and for interpreting and understanding.

Structured Query Language (SQL) - A syntax for defining and manipulating data from a relational database. Developed by IBM in the 1970s, it has become an industry standard for query languages in most relational database management systems.

Theme – An ArcView theme stores map features as primary features (such as arcs, nodes, polygons, and points) and secondary features such as tics, map extent, links, and annotation. A theme usually represents a single geographic layer, such as soils, roads, or land use.