

Collect Data Sources, Run Processes, and Resolve Technical Issues

How to collect data sources

Firstly, it is important to determine whether pre-existing data will be used or if the ArcGIS user is going to be creating data “from scratch.” It is also important for the GIS user to know what the project intends to analyze so that the appropriate method of data collection can be selected.

Methods for creating GIS data:

- A) Heads up/On-screen Digitization is the process of converting paper-based data sources into digital data. The paper-based data sources is scanned, saved, imported into a map and the user essentially “traces” the features of importance (i.e.- zoning areas, parcels, wetlands, forested areas, etc.).
- B) Coordinate Geometry (COGO) is a highly precise method of entering data (via keyboard) of survey measurements of property lines. From the original surveyor plat(s), distance and bearings are entered and the GIS software builds the digital file.
- C) Geocoding, also a keyboard entry method, uses addresses to create x, y coordinate locations interpolated from a geocodable spatial database into point features.
- D) Global Positioning Systems (GPS) uses satellites orbiting the earth that can receive signals from the data logger to locate the holder’s position. Attribute data can be can be entered at the time of data collection allowing for the GPS method of data collection to be fast and accurate.
- E) Image Processing allows for geodatasets to be derived from digital imagery, such as satellite imagery, LiDAR (Light Detection and Ranging), remote sensing and photogrammetric techniques.

Running GIS processes after data collection:

Prior to being used in analysis, data must go through the time consuming QA/QC (Quality Assurance/Quality Control) process to identify/correct errors, edit any necessary features, determine if the data is in the correct coordinate system, etc. to determine if the data is suitable for the analysis process.