

The Keys to the Datum Gates A Users Guide to the GPS-to-GIS Workflow Purpose

Users must pass through many datum gates to successfully collect and process GPS data. With the increasing availability of sub-meter accurate GPS, imagery and other spatial datasets, users are kept even more honest every step. 'Minor' datum shifts can no longer be overlooked. Although a challenging topic for users of all levels, ignoring datums **will** introduce significant errors in the data you have worked so hard to collect.

When moving GPS data to a GIS, at each step, ask 1) to which datum is the GPS data currently referenced, 2) how might this step change that, and 3) to which datum is the resulting data file referenced. Because each step demand your consideration, this paper provides

- Datums background and terms
- Table outlining datum of file created at each step
- Software screenshots and explanations
- Workflow posters, and
- References

May this guide offer you the keys to successfully pass through each Datum Gate.

Where to Start

This series of papers was inspired by an [excel sheet](#) created by Joel Cusick, NPS to guide users through the various datum choices when collecting GPS data and processing it for use in a GIS. The 'cases' referred to on this site are as follows. View the excel sheet to overview the various choices and then open the tutorial for the case that most closely matches your own workflow.

Trimble TerraSync data collection software

[Click here for TerraSync \(formerly cases 7 and 8\)](#)

ESRI ArcPad data collection software

(remains to be updated soon for NAD83(2011, PA11 and MA11) and Trimble Positions Software which has replaced Trimble GPS Analyst in ArcGIS 10.1...soon?!?)

[Case 3](#) : ArcPad lacking any real-time correction or with WAAS real-time correction

[Case 4](#) : ArcPad with Trimble GPS Analyst desktop software and NDGPS or OmniStar real-time correction

Note

Datums are tough concept. In writing these articles, it seemed like just when we had a grasp of it all, one question had us starting from a new. It is expected it will take you as many reads to grasp these concepts as it did for us to write these articles. Please feel free to post comments

or contact us as needed.