



**Base 9 Geodetic Consulting Services**  
**Dave Doyle**  
**NGS Chief Geodetic Surveyor (Retired)**



**THE UNITED STATES STATE PLANE  
COORDINATE SYSTEM**

This program discusses the foundational elements of the State Plane Coordinate System (SPC) including: fundamental geodetic concepts of the National Spatial Reference System (NSRS), relationship to the North American Datum of 1927 (NAD 27) and the North American Datum of 1983 (NAD83), enhancements to NAD 83 such as the High Accuracy Reference Network (HARN), the development of Continuously Operating Reference Stations (CORS), and the 2007 and 2011 national network adjustments, as they relate to changes in both SPC and the Universal Transverse Mercator (UTM) Grid. The program highlights the relationship of geodetic and grid coordinate systems, especially as it applies to distance and azimuth determination and orientation, and discusses some of the problems inherent in ground-based coordinate systems which are commonly referenced as “grid-to-ground.”

[Base9geodesy@gmail.com](mailto:Base9geodesy@gmail.com)

(301) 704-9578