

NGS POLICY 08-2012



Policy on Changes to State Plane Coordinates

National Geodetic Survey

Approved by the Executive Steering Committee

18 December 2012

The National Geodetic Survey (NGS) recognizes there may be States that want to implement changes to their existing North American Datum of 1983 (NAD 83) State Plane Coordinate System (SPCS) parameters or to create and employ supplemental plane coordinate projections. These changes may include:

1. Changing the number of zones
2. Modifying existing zone boundaries
3. Modifying the geometric parameters such as:
 - A. False northing / easting
 - B. Origin
 - C. Central meridian
4. Creating additional coordinate systems

NGS also recognizes that state and local surveying, mapping, and Geographic Information System (GIS) agencies may develop grid systems to support a variety of agency or local activities that may be in conflict with the policy detailed below. This policy details only those elements which must be met for NGS to publish these coordinate systems as part of the National Spatial Reference System (NSRS). While NGS does not encourage states to change the current definition of the existing SPCS, NGS does recommend any proposed changes be thoroughly discussed in detail with NGS technical staff, and the NGS State Geodetic Advisor if such an office exists in the state, prior to submitting a request to the Director of NGS. Also, the NGS will only support and publish geodetic data in one plane coordinate system, the NAD 83 State Plane Coordinate zones defined by NGS. If a state wishes to pursue a program to define multiple State Plane Coordinate zones in various layering configurations, the NGS recommends that the design, development and implementation stages take place and remain at the state level where all parties can effectively contribute to achieve a common goal.

NGS will adopt changes to SPCS or add supplemental projections into the NSRS only under the following conditions:

1. All requests for changes must be submitted in writing to the Director, NGS, and must be co-signed by those State agencies and organizations most involved in the use, collection, and distribution of spatial data including, but not limited to, the State Department of Transportation, State Office of GIS, and state land surveyor professional organizations. Hereafter these groups are referred to as the "State." Required agencies and organizations will be determined by NGS on a state-by-state basis. A similar request must also be submitted to the U.S. Geological Survey (USGS) to ensure integrity of NSRS with USGS national mapping products and services.
2. All new SPC zones or supplemental projections shall use the two basic map projections, the Lambert Conformal Conic or the Mercator (transverse or oblique), defined at the

surface of the ellipsoid of the current Datum (Geodetic Reference System 1980 - GRS 80).

3. All changes must be adopted by State Law (or State Regulation when such Regulation is regulated by public notices and hearings and no opposition exist). Such Law must include a complete description of the revised SPCS zones and geometric parameters. A specified conversion factor between meters and feet (U.S. Survey or International) is strongly recommended to be included in the legislation. NGS will publish coordinates only in those legislated units.
4. Zones will continue to be defined by International, State and county boundaries, and by the counties contained therein. (See Federal Register Notice "Policy on Publication of Plane Coordinates," Vol. 42, No. 57, pages 15943-15944, published March 24, 1977.)
5. SPCS changes will ensure that the resulting coordinate differences are sufficiently large (by at least 10,000 meters) to ensure that no confusion will exist with the current NAD 83 coordinate values.
6. A naming convention shall be developed that ensures a distinct labeling between the existing and revised new coordinate zones.
7. NGS may require States to reimburse the agency for assistance if significant resources are used in updating the SPCs. These costs would be for coordinate conversion, data base extraction and publication software required to support computation, publication and distribution of new coordinate values as part of NSRS.
8. To facilitate public awareness, the State shall develop an education program that includes an article detailing the rationale for the development of the changes, the process of review and examination of the issues, the final design criteria, and a workshop or seminar to be presented at a State-wide surveying and mapping conference. The article shall be submitted for publication in one or more surveying and mapping periodicals (e.g., American Congress on Surveying and Mapping Bulletin, Professional Surveyor, or P.O.B. magazines). In addition, this article will be made available on the web sites of the sponsoring agencies defined as the "State." Any requests for technical support from NGS requiring travel expenses for NGS personnel shall be reimbursed by the State.

See Federal Register: www.ngs.noaa.gov/PUBS_LIB/FedRegister/FRdoc77-8947.pdf