

## **Template Draft NSRS Legislation**

(updated October 16, 2019)

### How to use this template:

- 1) Whenever the word “state” is used below, it should be taken to mean “state or territory”
  - 2) The intent of this template is to augment, not fully replace, existing state laws dealing with a state-specific coordinate system and its relationship to existing or prior datums of the National Spatial Reference System (NSRS).
  - 3) The National Geodetic Survey (NGS) will release a new State Plane Coordinate System of 2022 (SPCS2022) as part of the release of the new geometric reference frames in 2022. As such, it is imperative that each state do the following:
    - a. Ensure that any changes from the 1983 SPCS which the majority of geospatial professionals in the state wish to make, be agreed at the state level and communicated to NGS, prior to deadlines specified in SPCS2022 policy and procedures, and
    - b. Ensure that any law naming the state-specific coordinate system contains a definition of how that state-specific coordinate system relates to the SPCS.
      - i. For example, if Michigan wishes to legislate that the “Michigan Plane Coordinate System” be used in the state of Michigan, then the law should specify that the “Michigan Plane Coordinate System” is identical to (or in some other way, defined in the law, related to) the “Michigan portion of the State Plane Coordinate System as defined by the National Geodetic Survey”.
    - c. Adhere to NGS policy and procedures for requesting or proposing characteristics of SPCS2022 in their state. SPCS2022 policy, procedures, and associated forms are available at <https://geodesy.noaa.gov/SPCS/policy.shtml>.
  - 4) Related to #2 above, language should *connect* the state-desired coordinate system to the federally-defined SPCS, while leaving state and federal responsibilities independent.
    - a. For example, both NGS and the California Spatial Reference Center (CSRC) cannot be *jointly* responsible for the California Plane Coordinate System (if that is the name chosen by California). If the CSRC is going to define the California Plane Coordinate System, they should solely define it, and have the law reflect how it relates to the federal (NGS-specified) SPCS.
  - 5) Reference to specific years, datum names, or SPCS projection parameters within the NSRS legislation should be avoided, as the intent of the template is to provide legislation that will be accurate and relevant both today (under NAD 83), through the new datum (in 2022) and beyond to whatever datums come after 2022.
  - 6) Wherever the phrase “<state>” is used in the template below, insert the name of your specific state or territory.
  - 7) Sections which are considered optional are set aside (in parentheses and in red)
  - 8) Sections which are explanatory and not to be copied into the law are in ***bold and italic***.
  - 9) While most states legislate the use of a *planar* coordinate system, this template addresses both *planar* and *geodetic* coordinates, to provide the greatest flexibility across all states.
  - 10) Examples of actual NSRS legislation from various states are available for download at <ftp://www.ngs.noaa.gov/pub/SPCS/ExampleLegislation/>.
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### I. Abbreviations

The following abbreviations will be used throughout this law in order to increase conciseness.

NSRS = National Spatial Reference System or its successors

NGS = National Geodetic Survey or its successors

SPCS = State Plane Coordinate System or its successors  
\*PCS = <state> Plane Coordinate System (*where \* can be the first letter of the state name, the two-letter state abbreviation, or any other abbreviation preferred by the state*)

(If a state feels clarity about the above terms is necessary, then insert a possible hierarchical section here, outlining that the NSRS is the overarching system, and that below that are various datums. Below the datums are projected coordinates within the datums, including the SPCS)

## II. The <state> Plane Coordinate System

The most recent system of plane coordinates which has been established by NGS, based on the NSRS, and known as the SPCS, for defining and stating the geographic positions or locations of points within the State of <state> shall be known as the "<state> Plane Coordinate System." ***This paragraph should serve, provided states do not wish to deviate from the SPCS. If they do, see the third parenthetical below.***

(Details how such a system should be used within your state)

(Keep existing 27/83 definitions in place)

(Any state or territory wishing to define other projections besides those found in NGS's SPCS should do so here. If the state-specific Plane Coordinate System will include anything like this, which is outside the scope of the SPCS, make sure not to attribute any aspects of it to NGS nor to the SPCS, but only to whatever state agency is going to define this exo-SPCS component of the state-specific Plane Coordinate System)

The plane coordinates of a point to be used in expressing the geographic position or location of the point in the appropriate zone of the \*PCS, shall consist of two distances, expressed in feet and decimals of a foot or meters and decimals of a meter. When the values are expressed in feet, a definition of 1 foot = 0.3048 meter exactly must be used. One of these distances, to be known as the "East or x-coordinate," shall give the distance east of the Y axis; the other, to be known as the "North or y-coordinate," shall give the distance north of the X axis. The Y axis of any zone shall be parallel with the central meridian of that zone. The X axis of any zone shall be at right angles to the central meridian of that zone.

(insert text about accuracy and use of points in the system)

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### III. Geodetic Coordinates

***This section would only be inserted for those states specifically wishing to legislate the use of geodetic coordinates.***

The official geodetic datums to which geodetic coordinates (including, but not limited to, latitude, longitude, ellipsoid height, orthometric height or dynamic height) are referenced within the State of <state> shall be as defined for the NSRS (insert any state specific information about how the NSRS is realized or accessed). ***The use of dynamic height in the above sentence is optional.***

(Statement about other geodetic work)

The provisions of this chapter shall not be construed to prohibit the appropriate use of other datums and other geodetic reference networks.

(Possible wording about "state specific geodetic coordinates" to include heights - note, the committee does not endorse this approach, but does not feel it must be prohibited. However, any state-specific geodetic coordinate which differs from the NSRS, is not part of the NSRS. **No attribution of state-specific geodetic coordinates should be made to NGS or to the NSRS**).