

August 17, 2018

NGS Feedback  
NOAA/NOS/National Geodetic Survey  
1315 East-West Hwy, Rm. 9340 N/NGS1  
Silver Spring, MD 20910

To whom it may concern,

This letter is in response to the NGS request for public comment on the Federal Register Notice (83 FR 17149) about the State Plane Coordinate System of 2022 (SPCS2022).

The **Wisconsin NATRF2022 Discovery Team** represents a broad coalition of geospatial and surveying professionals in Wisconsin, including federal, state, regional and local agencies and associations involved in the production and utilization of spatial data. We created the team to help ensure successful implementation of the 2022 reference system across the state. The Discovery Team will serve as the foundation of a Wisconsin NATRF 2022 Task Force being formed under the Wisconsin Society of Land Surveyors (WSLS) Geospatial Committee, which is sponsoring our efforts.

The primary concern of the Discovery Team at this time is how SPCS2022 policies and procedures will impact our constituents, and this is the focus of this letter.

The NGS Draft Procedures document states,

NGS typically will not design zones with a linear distortion criterion of less than  $\pm 50$  ppm.... Stakeholders who want such “low-distortion” SPCS2022 zones must design them as contributing partners. Any such designs must conform to all requirements herein and must be approved by NGS for incorporation in SPCS2022.

Wisconsin has relied upon low-distortion projection (LDP) systems for decades. County coordinate systems were first used in the state in the 1970s, with the first systematic statewide system (Wisconsin County Coordinate System, or WCCS) being developed in 1995. WCCS evolved into the current system, WISCRS (Wisconsin Coordinate Reference Systems) in 2006.<sup>1</sup>

Wisconsin’s county systems were originally developed, and continue to be maintained, in direct response to user needs for local coordinate systems that minimize differences between measured ground distances and projected grid distances while maintaining a mathematical linkage to national datums like NAD 83. WISCRS supports many users who need a system with low enough distortion that they can work “on the plane” and utilize grid distances as ground distances to develop the legal documents used in land transfer and platting.

WISCRS is also used extensively in infrastructure design and construction. WISCRS coordinates are incorporated into construction plans utilized by professional surveyors, contractors and their support staff. The Wisconsin Department of Transportation requires WISCRS coordinates to be used for highway construction plans and Transportation Project Plats, and is currently investing hundreds of millions of dollars in projects that utilize WISCRS as their coordinate system. WISCRS is also built into the major commercial software tools used in this industry. These examples show the significant financial interest in maintaining WISCRS and the buy-in it has received from the private sector.

It is our belief that the geospatial and surveying communities in Wisconsin will be best served by the continuation and perpetuation of WISCRS into the NATRF2022 era. WISCRS is widely used throughout the state as the basis of many County Land Information Systems, which, over the past three decades, have been the focus of heavy investment through the Wisconsin Land Information Program.<sup>ii</sup> Eliminating WISCRS, or significantly altering it to accommodate distortion criteria imposed externally, would have serious impacts on county and state land information budgets and negatively impact how spatial data is used and supported locally across the state.

We are convinced that, with the advent of NATRF2022, the Wisconsin community will be best served by a three-tiered coordinate system structure:

1. The coordinate system WISCRS;
2. A three-zone State Plane Coordinate System modeled on the current SPCS zones for the state but with significantly different Eastings to avoid confusion;
3. A single zone for the entire state, possibly based on WTM (Wisconsin Transverse Mercator, a UTM-like zone centered on the 90 degrees West meridian) but with a significantly different Easting to avoid confusion.

Keeping WISCRS intact will support Wisconsin's active land information communities at the local level who have made large investments in low-distortion WISCRS spatial networks. Acknowledging their importance, developers have included WISCRS in the International Coordinate Systems Registry and in the major software applications used in Wisconsin. We request NGS do the same.

To be clear, we are not asking for NGS support in the development of WISCRS. Despite the introduction of NATRF2022, the essential characteristics of WISCRS must remain unchanged to prevent disruptions and unnecessary costs. Rather, we are requesting that NGS recognize WISCRS as a component of this three-tiered system, provide WISCRS coordinates on NGS data sheets and within NGS databases, and incorporate WISCRS within NGS coordinate transformation software.

We appreciate the opportunity to comment on NGS plans, and we thank you for your attention to this important matter.

On behalf of the Wisconsin NATRF2022 Discovery Team,



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## Endnotes

- i. [https://www.sco.wisc.edu/wp-content/uploads/2017/07/WisCoordRefSys\\_June2015.pdf](https://www.sco.wisc.edu/wp-content/uploads/2017/07/WisCoordRefSys_June2015.pdf)
- ii. <https://doa.wi.gov/Pages/LocalGovtsGrants/WLIP.aspx>

## Wisconsin NATRF2022 Discovery Team

### Chair & Co-Chair

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