NATRF2022 Discovery Team Meeting

Location: Pyle Center, 702 Langdon Street, Madison, Wisconsin

Date: Thursday, July 19, 2018, 9am-noon

Overall Goal

To develop a coordinated response to the National Geodetic Survey (NGS) plan to introduce a new terrestrial reference system in 2022 (NATRF2022).

Meeting Objectives

1. Decide how to respond to a Federal Register deadline of August 31, 2018 for input on the process to update the State Plane Coordinate System (SPCS).
   - Should we advocate for acceptance of WISCRS as an additional layer in the SPCS?

2. Facilitate the creation of NATRF2022 Task Force.
   - Identify the main issues and stakeholders affected by the new reference system.
   - Develop a list of potential Task Force members. Some overlap with the Discovery Team is expected; we simply want to be sure we have identified all known stakeholders.
   - The goal of the initial Task Force meetings will be to flesh out the issues and develop Focus Groups to explore issues and solutions.
   - The Task Force will address the technical, educational, communication, legislative and software aspects required to respond to the change and to better position the geospatial community to implement the new reference system. Topics to be considered may include: State Plane Coordinate System redesign; redesign of the Wisconsin County Coordinate System; effects on surveying; changes to legislative language and/or administrative rule; education of the community; and others.

Agenda

9:00-9:10 am	Introductions
9:10-9:20 am	Background on the creation of the Discovery Team [Richard Kleinmann]
9:20-9:30 am	Goals and objectives of the meeting [Howard Veregin]
9:30-10:15 am	Discussion: Response to Federal Register deadline of August 31, 2018 for input on the process to update the SPCS [Background provided by John Ellingson and Glen Schaefer]
10:15-10:35 am	Coffee break
10:35-11:45 am	Brainstorming session to identify issues and stakeholders affected by move to NATRF2022. [Moderated by Howard Veregin and Richard Kleinmann]
11:45am-noon	Wrap-up.

The organizers would like to acknowledge the financial support of the Wisconsin Society of Land Surveyors for making this meeting possible.

List of Participants, Discovery Team

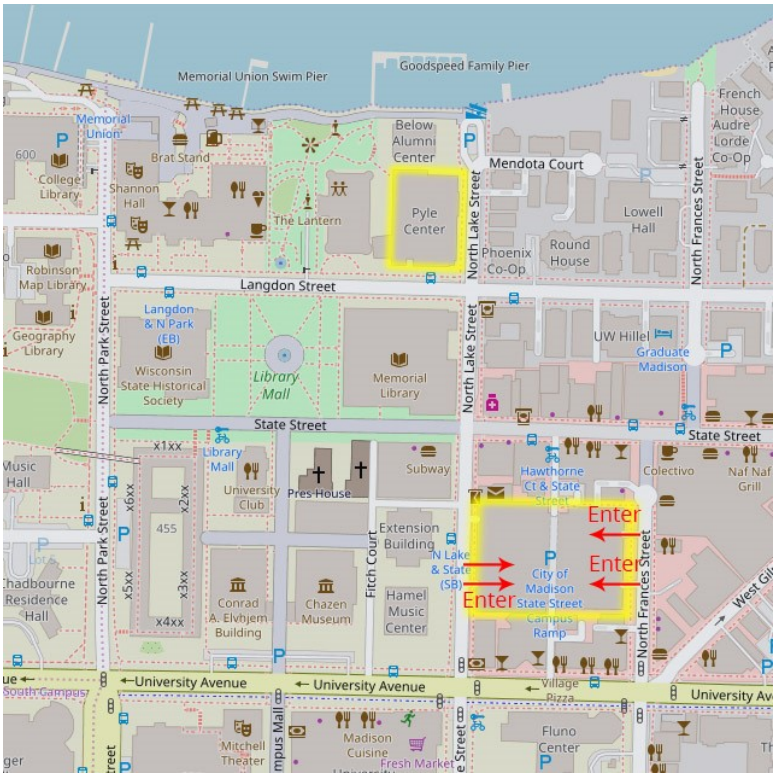
Bob Beilfuss, WSLS
Eric Damkot, WLIA
Adam Derringer, WLIC
John Ellingson, NGS
Jim Giglierano, Wisconsin DOA
Mick Heberlein, WisDOT
Brenda Hemstead, SCO
Jason Houle, private surveyor
Corey Hughes, WCSA
Dick Kleinmann, WSLS
John Laedlein, Wisconsin DNR
Jerry Mahun, UW-Platteville
Rob Merry, SEWRPC
Emily Pierce, NSPS
Glen Schaefer, retired
Frank Thousand, WSLS
Howard Veregin, Wisconsin State Cartographer
Al Vonderohe, UW-Madison emeritus

Meeting Information

We will be meeting in Room 305 of the Pyle Center at 702 Langdon Street, in Madison. Remote participants will be able to call in. See conference call information on page 1.

Coffee, pastries, water and soda will be provided. Wifi will be available in the Pyle Center.

The best option for parking is the city's State Street Campus Garage. See http://www.cityofmadison.com/parking-utility/garages-lots/state-street-campus-garage for parking information and stall availability.



Federal Register Notice

The NGS website at https://geodesy.noaa.gov/SPCS/draft-policy.shtml notes the following:

> **2022 SPCS Policy Changes**
>
> An update of the State Plane Coordinate System (SPCS) is part of the transition from the North American Datum of 1983 (NAD 83) to the **2022 Terrestrial Reference Frames** (https://geodesy.noaa.gov/datums/newdatums/naming-convention.shtml#reference-frames).
>
> To this end, NGS will establish the State Plane Coordinate System of 2022 (SPCS2022), which will replace SPCS 83, the version referenced to NAD 83.
>
> A Federal Register Notice (FRN) was published on April 12, 2018, announcing that draft SPCS2022 policy and procedures are available for public comment. It also asks for input on "special purpose" SPCS2022 zones. The FRN, policy, and procedures documents are available at the following links:
>
> - **Read Federal Register Notice**
> https://www.federalregister.gov/documents/2018/04/18/2018-08141/policy-and-procedures-documents-for-the-state-plane-coordinate-system-of-2022
>
> - **DRAFT SPCS2022 Policy**
> https://geodesy.noaa.gov/INFO/Policy/files/DRAFT_SPCS2022_Policy.pdf
>
> - **DRAFT SPCS2022 Procedures**
> https://geodesy.noaa.gov/INFO/Policy/files/DRAFT_SPCS2022_Procedures.pdf
>
> After reading the FRN and reviewing the draft documents, send your feedback to **NGS.Feedback@noaa.gov**. Comments may be provided until August 31, 2018.
>
> Note that the draft procedures document includes contact information and instructions for requesting and proposing zones, as part of developing SPCS2022. Because that process may change based on public comments, such requests and proposals should not be submitted to NGS until after the SPCS2022 policy and procedures are finalized.

The Federal Register Notice states:

> NOAA's National Geodetic Survey (NGS) will establish the State Plane Coordinate System of 2022 (SPCS2022) as part of the transition to the 2022 Terrestrial Reference Frames (TRFs). SPCS2022 is the successor to previous versions referenced to the North American Datums of 1983 and 1927. Like its predecessors, SPCS2022 will be a system of conformal map projections for the entire National Spatial Reference System (NSRS). It will provide surveyors, engineers, and other geospatial professionals with a practical means for accessing and using the NSRS. NGS has developed draft policy and procedures that propose defining characteristics

and requirements for SPCS2022. These documents also provide mechanisms for user input on initial design of SPCS2022 and subsequent changes. The aim is for SPCS2022 to meet the needs of NGS customers for the future NSRS. To achieve that goal, NGS is inviting written comments on the draft SPCS2022 policy.

In addition, NGS seeks feedback on purposed "special purpose" zones.

DATES:
Comments will be accepted until Friday, August 31, 2018.

ADDRESSES:
Comments should be submitted in writing to NGS Feedback, NOAA/NOS/National Geodetic Survey, 1315 East-West Hwy, Rm. 9340 N/NGS1, Silver Spring, MD 20910; or via Email to: *NGS.Feedback@noaa.gov*.

FOR FURTHER INFORMATION CONTACT:
Michael Dennis, SPCS2022 Project Manager, NOAA/NOS/National Geodetic Survey, 1315 East-West Hwy, Rm. 9340 N/NGS1, Silver Spring, MD 20910; or
Email: *Michael.Dennis@noaa.gov*.

SUPPLEMENTARY INFORMATION:
The SPCS was originally established in the 1930s. Since that time it has evolved, and there has been substantial variability in how it was defined, maintained, and used. The history and current status of SPCS is discussed in *NOAA SpecialPublication NOS NGS 13* (*https://geodesy.noaa.gov/library/pdfs/NOAA_SP_NOS_NGS_0013_v01_2018-03-06.pdf*). This publication may prove a useful companion in reviewing the draft SPCS2022 policy and procedures by providing context and insight into the development of SPCS and the existing NGS policies pertaining to it. Further information is available on the NGS State Plane Coordinate System web page: *https://geodesy.noaa.gov/SPCS/index.shtml*.

Pursuant to the authority provided in the Coast and Geodetic Survey Act, 33 U.S.C. 883a *et seq.,* the Director of NOAA's National Geodetic Survey invites interested parties to submit comments to assist NGS in developing a new State Plane Coordinate System for the future. Comments may address any aspect of the draft SPCS2022 policy and procedures. The draft SPCS2022 policy is available at:

https://geodesy.noaa.gov/INFO/Policy/files/DRAFT_SPCS2022_Policy.pdf.

The associated draft procedures are available at:

https://geodesy.noaa.gov/INFO/Policy/files/DRAFT_SPCS2022_Procedures.pdf.

Specifically, the Director seeks comments regarding:

1. Usage of current SPCS in your organization, how your organization expects to use SPCS2022, and whether it will facilitate migration to the 2022 TRFs.
2. Whether the proposed default SPCS2022 definitions will impose a hardship or be beneficial to your organization.

3. Whether there is insufficient or excessive flexibility in the characteristics of SPCS2022 that can be established through user input.
4. Whether the deadlines are acceptable and realistic for making requests or proposing characteristics for SPCS2022.
5. Whether including "special purpose" zones as part of SPCS2022 would be beneficial, problematic, or irrelevant to your organization.

Dated: March 23, 2018.

The draft procedures document states:

b. Limitations for zones designed by NGS

i. NGS will design SPCS2022 zones only for cases where the linear distortion design criterion is ±50 ppm (1:20,000) or greater. This corresponds to a zone width of about 180 km (112 miles) for regions of overall modest topographic relief.

Remark: Currently 30 of the SPCS 83 zones already meet or exceed a ±50 ppm distortion design criterion (but with respect to the ellipsoid, not necessarily the topographic surface). The 180-km zone width also corresponds to a TM zone roughly 2° wide perpendicular to the central meridian (at 35° latitude; for comparison, UTM zones are 6° wide). On a historical note, an alternative considered for SPCS 83 was a UTM-like system with zones 2° wide. Compare this to the nominal SPCS distortion design criterion of ±100 ppm (1:10,000) and its corresponding nominal zone width of 225 km (158 miles).

ii. Design of "low-distortion" zones by contributing partners. NGS typically will not design zones with a linear distortion criterion of less than ±50 ppm, except for small states where lower distortion is achieved by default (e.g., states less than 180 km wide perpendicular to the projection axis). 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.