

WSRS2022 2020 Quarter 1 Meeting
Jan 24, 2020, 9:00 am – 12:00 pm
WisDOT Truax Office building (Bureau of Technical Services)
3502 Kinsman Blvd, Madison, WI 53704

AGENDA

Skype Information for Remote Attendees *

Link: <https://meet.dot.wi.gov/cynthia.mccallum/RTB7J7FL>

Call in: (608) 316-9000 Conference ID: 15690261#

* We will be using Skype, not Webex. (Skype is preferred by WisDOT.)

Main Goals: As this will be our last meeting before NGS proposals are due on March 31, 2020, we will be making final plans for the preparation and submission of these documents. We will also be discussing outreach efforts at the Wisconsin Land Information Association Conference in February, 2020.

Background: At our last meeting on Nov 6, 2019, we resolved to send an email to NGS (Michael Dennis) stating that we want exceptions for the scale and lat-long requirements for WISCRS (in addition to the previous zone size/boundary exception) and if granted we will submit a design proposal for 59 zones using our projection axis scale and lat-long parameters (as specified in WISCRS publications). We also resolved to investigate the cost of creating a three-zone layer independent of NGS.

Agenda:

1. 9:00 – 9:05 Introduction (Howard and Dick)
2. 9:05 – 10:00 NGS Response and Proposal Submission Plans (Howard and Dick)
 - a. Summary of NGS response to our email to Michael Dennis
 - b. Confidentiality requirements
 - c. Final plans for preparation and submission of proposals:
 - i. Roles (especially Alan and Glen, and Technical Focus Group)
 - ii. QA/QC of proposal text
 - iii. Deadlines, submission requirements
 - iv. Other details
(Attachments: NGS submission information and deadlines; NGS SPCS Policy Web Page; NGS response letter, Sept 2019; Blank SPCS2022 Zone Request and Proposal Form; Draft proposals from 9/8/19 for single-zone and three-zone layers by Tech Focus Group;)
3. 10:00 – 10:30 Three-layer Zone Proposal (Alan)
 - a. Review of Alan's proposal (attached)
 - b. Discussion and decision
4. 10:30 – 10:45 Short break
5. 10:45 – 11:15 WLIA outreach plans (Education/Outreach Focus Group)

- a. Review of session agenda (proposed agenda attached)
 - b. Interest expressed by Alan and Nina. Any others?
 - c. Discussion/decisions about Focus Group participation and session agenda
6. 11:15 – 11:45 Focus Group Activities (Howard and Dick)
 - a. Review of Focus Group activities (Focus Group Leads)
 - b. Specific topics for Software/Hardware Focus Group (Dan, others)
 - i. Lead needed for Software/Hardware Group – any suggestions?
 - c. Specific topics for Legislative Group?
 - d. Do we need a Funding Focus Group?
 - e. Other topics
7. 11:45 – 12:00 Next steps & other business (Howard and Dick)
8. 12:00 Adjourn

Attachment: NGS submission information and deadlines

Information abstracted from:

https://geodesy.noaa.gov/INFO/Policy/files/SPCS2022_Procedures_NGS_2019-1214-01-A1.pdf

There are two types of stakeholder input. The first is required for all submittals. The second is only required for submittal of designs by stakeholders.

- i. Stakeholder requests and proposals for SPCS2022 designs....A “request” is for NGS to design or modify SPCS2022 zones. A “proposal” is for SPCS2022 designs created and submitted by stakeholders.
- ii. Stakeholder submittal of SPCS2022 zone designs....Note that the proposed designs must first be approved by NGS.

All requests and proposals for SPCS2022 zones must be submitted using the forms provided by NGS.... NGS will only act on unanimous agreement of stakeholder groups. In the absence of unanimity, NGS has sole authority to design SPCS2022 zones for a state.

Requests for zones designed by NGS or proposals for zones designed by stakeholders must be received by NGS no later than March 31, 2020.

For NGS-approved proposed designs by stakeholders, all final defining parameters must be received by NGS no later than March 31, 2021.

Confirmation of final design characteristics and computations will be provided by NGS to stakeholders no later than December 31, 2021.

Requirements for stakeholder requests and proposals of SPCS2022 designs:

- a. The required information is supplied using the NGS SPCS2022 Request and Proposal Form, available at <https://geodesy.noaa.gov/SPCS/policy.shtml>.
- b. Must comply with all SPCS2022 policies and procedures, including all technical specifications.
- c. Applies to requests and proposals for initial designs of SPCS2022 zone layers. Modifications of existing SPCS2022 zone layers will be based on an update to these procedures after the initial official release of SPCS2022.
- d. Providing all required information is the responsibility of the submitter.
- e. NGS will review requests/proposals and respond to inquiries as quickly as possible.
- f. Proposed designs by stakeholders must be approved by NGS before any submitted designs are reviewed by NGS.

Additional Attachments: NGS SPCS Policy Web Page;
Page from NGS Response letter (Sept 2019) with highlights;
SPCS2022 Zone Request and Proposal Form (Blank) with highlights;
Draft SPCS2022 Zone Request and Proposal Form for one-zone layer (Tech Focus Group, 9/8/19);
Draft SPCS2022 Zone Request and Proposal Form for three-zone layer (Tech Focus Group, 9/8/19);
Three-zone development estimate from Alan;
WLIA session agenda (proposed)

- [NGS Home](#)
- [About NGS](#)
- [Data & Imagery](#)
- [Tools](#)
- [Surveys](#)
- [Science & Education](#)

Current Policy for SPCS2022



The State Plane Coordinate System of 2022 (SPCS2022) is being developed as part of the transition from the North American Datum of 1983 (NAD 83) to the [2022 Terrestrial Reference Frames](#). NGS established the following policy and procedures specific to SPCS2022:

- [SPCS2022 Policy](#)  (339 KB)
- [SPCS2022 Procedures](#)  (526 KB)

The policy specifies overall SPCS2022 characteristics. The procedures give technical details, along with the requirements and process for state stakeholders to provide input to NGS on their preferences for SPCS2022. Stakeholders and their roles are fully defined in the procedures.

Stakeholder Requests, Proposals, and Zone Designs for SPCS2022

As described in the SPCS2022 Procedures, two forms are available for stakeholder input. One is for requests and proposals (where a *request* is for designs by NGS, and a *proposal* is for designs by stakeholders). The other is for submittal of zones designed by stakeholders (based on a previously submitted and NGS-approved proposal).



- [SPCS2022 Zone Request and Proposal Form](#)  (97 KB)
- [SPCS2022 Zone Design Submittal Form](#)  (109 KB)



[Examples of completed forms](#) for various states are available for download. When the full set of defining parameters for SPCS2022 zones are finalized, they will be added to the [Final SPCS2022 Zones](#) page

Superseded Policies for SPCS 83

SPCS2022 will replace the State Plane Coordinate System of 1983 (SPCS 83), and policies associated with SPCS 83 will be superseded. Technically, SPCS 83 policies are still in effect, since SPCS2022 has not yet been fully defined or adopted. But in practical terms those policies are now defunct, since there will be no further changes to SPCS 83. Links to the existing SPCS 83 policies are provided below for reference:

- [Policy on Changes to State Plane Coordinates](#)  (141 KB)
- [Policy of NGS Concerning Units of Measure for the State Plane Coordinate System of 1983](#)  (136 KB)

A [map is available](#) that shows the status of current state legislation relating to SPCS 83, as well the official adopted version of the U.S. survey or international foot (select the image for a higher resolution version). **Note:** this map does *not* apply to SPCS2022.

State Plane Coordinate System

- [Home](#)
- [SPCS2022 Policy](#)
- [Download Design Maps](#)
- [Final SPCS2022 Zones](#)
- [Convert Coordinates](#)
- [Maps of SPCS 83 and 27](#)
- [Learn More](#)

Have State Plane Questions?

- [Contact Us](#)

**Deadline for submitting
requests and proposals**



**Deadline for submitting
completed designs**



Website Owner: National Geodetic Survey / Last modified by [NGS Infocenter](#) Nov 08 2019

[NOS Home](#) ■ [NGS Employees](#) ■ [Privacy Policy](#) ■ [Disclaimer](#) ■ [USA.gov](#) ■ [Ready.gov](#) ■ [Site Map](#) ■ [Contact Webmaster](#)



We requested that NGS design a statewide single-zone layer based on a Transverse Mercator projection with its central meridian at 270° E and a false easting significantly different from those of WTM 27 and WTM 83.

viable alternatives that require no (or fewer) exceptions; and a willingness to compromise.

With that in mind, the remainder of this letter focuses on the various requests described in your August 15 letter. Your requests are categorized in the following four groups: 1) statewide zone layer; 2) multiple-zone low distortion projection (LDP) layer; 3) requirements for submitting LDP system designs; and 4) keeping the existing SPCS 83 zone extents as a third SPCS2022 layer.

1. *Statewide zone layer.* As indicated in your letter, an exception is not required for the statewide zone request. NGS has already designed a preliminary statewide zone using a Transverse Mercator projection with the desired central meridian (it is available for download at <ftp://www.ngs.noaa.gov/pub/SPCS/DistortionMaps/>). The preliminary design does not include grid origins, but if specified by NGS, the resulting coordinates will differ by at least 10,000 m from those for SPCS 83 and 27 zones, and any other SPCS2022 layer. If Wisconsin desires specific projected coordinate values (for example, that differ from the Wisconsin WTM 83 and 27 statewide zones), those can be requested by completing an *SPCS2022 Zone Request and Proposal Form* (<https://geodesy.noaa.gov/SPCS/policy.shtml>).
2. *Multiple-zone LDP system layer.* The letter requests that all necessary exceptions be granted to allow the Wisconsin Coordinate Reference System (WISCRS) be part of SPCS2022. Referencing the WISCRS manual implies that the desired zone extents and parameters are identical to those in WISCRS as currently defined. However, that intent is not entirely clear, and the letter does not specifically list the exceptions requested. To make the request more specific, it is split into two groups. The first is for two overall requests to allow using WISCRS in SPCS2022 at all. The second group consists of three alternatives for how parameters of the WISCRS-based SPCS2022 zones are defined.

The two requests listed below are for overall approval of exceptions that concern zone size and parameter uniqueness:

- a. *Zone size.* Use of WISCRS zones in SPCS2022 is in conflict with **SPCS2022 Procedures §6.e** for a minimum zone width of 50 km. NGS recognizes that the WISCRS has been in use for decades, and understands that it is defined in multiple commercial software packages and publicly available databases. Because of its history, large investment of resources, and widespread implementation, **this exception request is granted.** In essence, NGS is allowing these small zones to be “grandfathered” into SPCS2022 because of the long established use of the system.
- b. *Zone parameter uniqueness.* WISCRS uses 59 projection definitions for its 72 zones (one per county). Thus projection definitions are not unique, which is in conflict with **SPCS2022 Policy §1.D** and **SPCS2022 Procedures §6.f.ii**. Because a single zone that occurs in multiple counties can be identified readily without being a “separate” zone, **this exception request is NOT granted.** That is, all SPCS2022 zones in the LDP layer must have unique parameters, meaning that there will be 59 rather than 72 zones for SPCS2022.



State Plane Coordinate System of 2022 SPCS2022 Zone Request and Proposal Form

This form is used to establish a single *new* SPCS2022 zone layer in one state (as well as specific U.S. territories and the District of Columbia). All states will have one statewide zone layer and may have up to two additional multiple-zone layers, for a total maximum of three layers. A separate form must be submitted for each layer. **NGS will design a statewide zone for every state, but this form can be used to request characteristics for such zones.** Files with additional information can be included with this form.

Zone extents must be entirely within a single state. Zone extents that are in more than one state are “special use” zones and require approval of the NGS Director on a case-by-case basis. Contact NGS.SPCS@noaa.gov to make inquiries about establishing special use zones.

Please download and complete the form electronically. Save and email the completed form to NGS.SPCS@noaa.gov (see page 3 for additional guidance). The submittal deadline is March 31, 2020.

IMPORTANT: NGS cannot act on this submittal if a conflicting request or proposal is received from any stakeholder group in the same state, territory, or federal district. Unanimous agreement is required.

Refer to SPCS2022 Policy and Procedures for additional information:

<https://geodesy.noaa.gov/INFO/Policy/files/SPCS2022-Policy.pdf>

<https://geodesy.noaa.gov/INFO/Policy/files/SPCS2022-Procedures.pdf>

1. Select the U.S. state, territory, or federal district:

2. Point of contact for stakeholder organizations represented on this form.

Primary (required):
First name Last name

Email address Phone number

Alternate (optional):
First name Last name

Email address Phone number

3. Stakeholder organizations represented (if more than eight, list additional ones in item #10):

1	<input type="text"/>	5	<input type="text"/>
2	<input type="text"/>	6	<input type="text"/>
3	<input type="text"/>	7	<input type="text"/>
4	<input type="text"/>	8	<input type="text"/>

4. Select submittal type:

Default zone request. NGS design of an SPCS2022 zone layer following default procedures (*skip to item #10, or to item #9 if exceptions are requested*). **Single-zone layer in Orange**

Request. NGS design of an SPCS2022 **multiple-zone** submittal. NGS will determine number of zones and extents based on information given on this form. If there is a specific preferred zone layout or other characteristics, please describe in item #8.

Proposal. Stakeholder intends to design the SPCS2022 **multiple-zone** layer described on this form. *Proposals must be approved by NGS before a submitted layer design will be reviewed.*

WISCRS in Green

5. Select linear distortion design criterion for zone system (parts per million):

Designs with a criterion below ±50 ppm must be designed by stakeholders as part of a proposal.



State Plane Coordinate System of 2022
SPCS2022 Zone Request and Proposal Form

6. Select the intended coverage of the state by this zone layer:
A maximum of two multiple-zone layers can exist for a state. Only one multiple-zone layer can provide complete coverage, and only one multiple-zone layer can provide discontinuous (partial) coverage. All zone layers designed by NGS are for complete state coverage.

7. Enter number of zones (can be approximate if actual number not yet known):
Zone size generally decreases as the number of zones increases. Please note the following:

- *For topographic height range of 250 m or less, the minimum zone width is 50 km.*
- *For topographic height range of more than 250 m, the minimum zone width is 10 km.*
- *Zones smaller than these minimums require an exception by the NGS Director (see item #9).*

8. Describe the method used for defining zone extents. *Examples include counties (individual, aggregated, or interior subareas), latitude/longitude bounds, topographically defined regions, metropolitan areas, DOT districts, Public Land Survey System townships, American Indian reservations, etc.*

9. If exceptions to SPCS2022 Policy and Procedures are requested as part of this submittal, please describe and provide the reason(s). Exceptions for stakeholder designs can also be requested when the designs are submitted. *Note that exceptions are evaluated on a case-by-case basis and are not guaranteed.*

10. Please provide additional relevant information, if any. *Examples include preferences for specifying grid origin (e.g., false northing and easting values, coordinate ranges within the zones), desired limitations to certain projection type(s), additional stakeholder groups, etc.*

11. As the primary point of contact for the listed stakeholder groups, I affirm that this submittal accurately represents their wishes for the U.S. state, territory, or federal district identified herein.

Date:



State Plane Coordinate System of 2022 SPCS2022 Zone Request and Proposal Form

Page
3 of 3

Additional guidance on completing this form

Download and complete the form electronically using Adobe Reader (version 8 or later) or Acrobat (version 9 or later). Reader is available free of charge at <https://get.adobe.com/reader/otherversions/>.

Deadline of March 31, 2020. The deadline is for including zone designs based on this request or proposal in the initial release of SPCS2022. After the deadline, requests and proposals will be for *modifications* to SPCS2022, and this form will be updated to reflect that change.

Items 1-3. Assumed self-explanatory.

Item 4.

Default zone request. This option can be used for either a default multiple-zone or a statewide zone layer, and some characteristics can be requested (in item #10). NGS will design a statewide zone for every state. NGS will also design a default multiple-zone layer for nearly all states that have two or more SPCS 83 zones, if no consensus request or proposal for a different design is received from state stakeholders. *If stakeholders are satisfied with NGS independently creating default designs, it is **not necessary to submit this form**.* However, submitting this form for default designs will allow NGS to act sooner on finalizing default designs. Otherwise default designs will not be finalized until after the submittal deadline.

Request. Use this option to request NGS design a multiple-zone layer that differs significantly from the default. For example, a state with three SPCS 83 zones corresponding to a distortion design criterion of ± 100 ppm zones could request new zones with a criterion of ± 50 ppm. The resulting number of zones would likely be the width of the state (in km) divided by 180 km (the width corresponding to ± 50 ppm), rounded up to the next highest whole number. This number may vary based on the shape of the state, topographic relief, desired zone configuration, and the orientation of the width dimension, but it should give a reasonably good estimate. Default design are described in SPCS2022 Procedures §6.i.

Proposal. This option is for multiple-zone layers designed by stakeholders, and it also asks whether the design is intended to *replace* the default multiple-zone layer for a state (for states with multiple default zones). See also item #6, which could cause *automatic* replacement of the default layer.

Item 5. If there is a range of distortion criteria for various zones, choose the one most representative for the overall layer. See SPCS2022 Procedures §6.d for details about the distortion design criterion.

Item 6. If a multiple-zone layer designed by stakeholders provides complete state coverage, it will *replace* the default multiple-zone layer, regardless of the replacement option selected under item #4.

Item 7. NGS will evaluate the request to assess whether it meets the minimum width requirements. Note that a width of 50 km perpendicular to the projection axis corresponds to a distortion range of about ± 5 ppm for areas of minimal topographic relief (see Table 2 in the SPCS2022 Procedures).

Items 8-11. Assumed self-explanatory. Files with additional information can be referenced in any of the fillable text boxes.

Examples of completed forms are available at <ftp://www.ngs.noaa.gov/pub/SPCS/ExampleForms/>.

If you have questions about completing this form, please contact NGS.SPCS@noaa.gov.



State Plane Coordinate System of 2022
SPCS2022 Zone Request and Proposal Form

This form is used to establish a single new SPCS2022 zone layer in one state (as well as specific U.S. territories and the District of Columbia). All states will have one statewide zone layer and may have up to two additional multiple-zone layers, for a total maximum of three layers. A separate form must be submitted for each layer. NGS will design a statewide zone for every state, but this form can be used to request characteristics for such zones.

Zone extents must be entirely within a single state. Zones that fall within more than one state are "special use" zones and require approval of the NGS Director on a case-by-case basis. Contact NGS.SPCS@noaa.gov to make inquiries about establishing special use zones.

Please fill out the form electronically. Save and email the completed form to NGS.SPCS@noaa.gov (see page 3 of this form for additional guidance). The submittal deadline is **March 31, 2020**.

IMPORTANT: NGS cannot act on this submittal if a conflicting request or proposal is received from any stakeholder group in the same state, territory, or federal district. Unanimous agreement is required.

Refer to SPCS2022 Policy and Procedures for additional information:

https://geodesy.noaa.gov/INFO/Policy/files/SPCS2022_Policy_NGS_2019-1214-01.pdf

https://geodesy.noaa.gov/INFO/Policy/files/SPCS2022_Procedures_NGS_2019-1214-01-A1.pdf

1. Select the U.S. state, territory, or federal district:

2. Point of contact for stakeholder organizations represented on this form.

Primary (required):

Alternate (optional):

3. Stakeholder organizations represented (if more than eight, list additional ones in item #10):

1	Wisconsin Society of Land Surveyors	5	Wisconsin State Cartographer's Office
2	Wisconsin Land Information Association	6	Wisconsin Department of Transportation
3	Wisconsin Land Information Officers Network	7	Wisconsin Department of Natural Resources
4	Wisconsin County Surveyors Association	8	Wisconsin Legislative Technology Services Bureau

4. Select submittal type:

- Default zone request.** NGS design of an SPCS2022 zone layer following default procedures (if this option is selected, skip to item #10). **Is this for a statewide zone?** Yes No
- Request.** NGS design of an SPCS2022 multiple-zone layer that differs from default per this submittal. NGS will determine number of zones and extents based on the information given on this form. If there is a specific preferred zone layout or other characteristics, please describe in item #8.
- Proposal.** Stakeholder intends to design the SPCS2022 multiple-zone layer described on this form. Proposals must be approved by NGS before a submitted layer design will be reviewed.

5. Select linear distortion design criterion for zone system (parts per million):

Designs with a criterion below ± 50 ppm must be designed by stakeholders as part of a proposal.



State Plane Coordinate System of 2022
SPCS2022 Zone Request and Proposal Form

6. Select the intended coverage of the state by this zone layer:
A maximum of two multiple-zone layers can exist for a state. Only one multiple-zone layer can provide complete coverage, and only one multiple-zone layer can provide discontinuous (partial) coverage. All zone layers designed by NGS are for complete state coverage.

7. Enter number of zones (can be approximate if actual number not yet known):
Zone size generally decreases as the number of zones increases. Please note the following:

- For topographic height range of 250 m or less, the minimum zone width is 50 km.
- For topographic height range of more than 250 m, the minimum zone width is 10 km.
- Zones smaller than these minimums require an exception by the NGS Director (see item #9).

8. Describe or interconnect DOT districts:
 Additional Stakeholders: Wisconsin Land Information Council, Wisconsin Department of Administration, Southeastern Wisconsin Regional Planning Commission, University of Wisconsin-Madison, University of Wisconsin-Platteville, City of Madison, Wisconsin Spatial Reference System 2022 Task Force.
 This request is for the NGS-designed statewide single zone to have certain characteristics. As described in our August 15, 2019 letter to the Director of NGS, Wisconsin has had two statewide single zone Transverse Mercator projections for some years. These are referred to as "WTM 27" and "WTM 83". They are modeled on UTM and have central meridians at 270 degrees east longitude. Their false eastings are 500,000 m and 520,000 m, respectively. Specifically, this request is for the NGS-designed statewide single zone to be a Transverse Mercator projection with its central meridian at 270 degrees east longitude and with its false easting being significantly different from those of WTM 27 and WTM 83. We understand that NGS will design the statewide single-zone at the topographic surface and that this condition might cause the optimum central meridian to be at something other than 270 degrees east longitude. If that be the case, then we request that the longitude difference be taken into account when selecting the false easting to be significantly different from those of WTM 27 and WTM 83.

9. If exception and provisions are submitted:
 This request is for the NGS-designed statewide single zone to have certain characteristics. As described in our August 15, 2019 letter to the Director of NGS, Wisconsin has had two statewide single zone Transverse Mercator projections for some years. These are referred to as "WTM 27" and "WTM 83". They are modeled on UTM and have central meridians at 270 degrees east longitude. Their false eastings are 500,000 m and 520,000 m, respectively. Specifically, this request is for the NGS-designed statewide single zone to be a Transverse Mercator projection with its central meridian at 270 degrees east longitude and with its false easting being significantly different from those of WTM 27 and WTM 83. We understand that NGS will design the statewide single-zone at the topographic surface and that this condition might cause the optimum central meridian to be at something other than 270 degrees east longitude. If that be the case, then we request that the longitude difference be taken into account when selecting the false easting to be significantly different from those of WTM 27 and WTM 83.

10. Please provide origin (e.g., false northing and easting values, coordinate ranges within the zones), desired limitations to certain projection type(s), additional stakeholder groups, etc.

Additional Stakeholders: Wisconsin Land Information Council, Wisconsin Department of Administration, Southeastern Wisconsin Regional Planning Commission, University of Wisconsin-Madison, University of Wisconsin-Platteville, City of Madison, Wisconsin Spatial Reference System 2022 Task Force.

This request is for the NGS-designed statewide single zone to have certain characteristics. As described in our August 15, 2019 letter to the Director of NGS, Wisconsin has had two statewide single zone Transverse Mercator projections for some years. These are referred to as "WTM 27" and "WTM 83". They are modeled on UTM and have central meridians at 270 degrees east longitude. Their false eastings are 500,000 m and 520,000 m, respectively. Specifically, this request is for the NGS-designed statewide single zone to be a Transverse Mercator projection with its central meridian at 270 degrees east longitude and with its false easting being significantly different from those of WTM 27 and WTM 83. We understand that NGS will design the statewide single-zone at the topographic surface and that this condition might cause the optimum central meridian to be at something other than 270 degrees east longitude. If that be the case, then we request that the longitude difference be taken into account when selecting the false easting to be significantly different from those of WTM 27 and WTM 83.

11. As the primary point of contact for the listed stakeholder groups, I affirm that this submittal accurately represents their wishes for the U.S. state, territory, or federal district identified herein.

Date:

Reset form

Save form



State Plane Coordinate System of 2022
SPCS2022 Zone Request and Proposal Form

This form is used to establish a single new SPCS2022 zone layer in one state (as well as specific U.S. territories and the District of Columbia). All states will have one statewide zone layer and may have up to two additional multiple-zone layers, for a total maximum of three layers. A separate form must be submitted for each layer. NGS will design a statewide zone for every state, but this form can be used to request characteristics for such zones.

Zone extents must be entirely within a single state. Zones that fall within more than one state are "special use" zones and require approval of the NGS Director on a case-by-case basis. Contact NGS.SPCS@noaa.gov to make inquiries about establishing special use zones.

Please fill out the form electronically. Save and email the completed form to NGS.SPCS@noaa.gov (see page 3 of this form for additional guidance). The submittal deadline is **March 31, 2020**.

IMPORTANT: NGS cannot act on this submittal if a conflicting request or proposal is received from any stakeholder group in the same state, territory, or federal district. Unanimous agreement is required.

Refer to SPCS2022 Policy and Procedures for additional information:

https://geodesy.noaa.gov/INFO/Policy/files/SPCS2022_Policy_NGS_2019-1214-01.pdf

https://geodesy.noaa.gov/INFO/Policy/files/SPCS2022_Procedures_NGS_2019-1214-01-A1.pdf

1. Select the U.S. state, territory, or federal district:

2. Point of contact for stakeholder organizations represented on this form.

Primary (required):

First name

Last name

Email address

Phone number

Alternate (optional):

First name

Last name

Email address

Phone number

3. Stakeholder organizations represented (if more than eight, list additional ones in item #10):

- | | | | |
|---|---|---|--|
| 1 | Wisconsin Society of Land Surveyors | 5 | Wisconsin State Cartographer's Office |
| 2 | Wisconsin Land Information Association | 6 | Wisconsin Department of Transportation |
| 3 | Wisconsin Land Information Officers Network | 7 | Wisconsin Department of Natural Resources |
| 4 | Wisconsin County Surveyors Association | 8 | Wisconsin Legislative Technology Services Bureau |

4. Select submittal type:

- Default zone request.** NGS design of an SPCS2022 zone layer following default procedures (if this option is selected, skip to item #10). Is this for a statewide zone? Yes No
- Request.** NGS design of an SPCS2022 multiple-zone layer that differs from default per this submittal. NGS will determine number of zones and extents based on the information given on this form. If there is a specific preferred zone layout or other characteristics, please describe in item #8.
- Proposal.** Stakeholder intends to design the SPCS2022 multiple-zone layer described on this form. Proposals must be approved by NGS before a submitted layer design will be reviewed.

5. Select linear distortion design criterion for zone system (parts per million):

Designs with a criterion below ± 50 ppm must be designed by stakeholders as part of a proposal.



State Plane Coordinate System of 2022
SPCS2022 Zone Request and Proposal Form

6. Select the intended coverage of the state by this zone layer:

A maximum of two multiple-zone layers can exist for a state. Only one multiple-zone layer can provide complete coverage, and only one multiple-zone layer can provide discontinuous (partial) coverage. All zone layers designed by NGS are for complete state coverage.

7. Enter number of zones (can be approximate if actual number not yet known):

Zone size generally decreases as the number of zones increases. Please note the following:

- *For topographic height range of 250 m or less, the minimum zone width is 50 km.*
- *For topographic height range of more than 250 m, the minimum zone width is 10 km.*
- *Zones smaller than these minimums require an exception by the NGS Director (see item #9).*

8. Describe the method used for defining zone extents. *Examples include counties (individual, aggregated, or interior subareas), latitude/longitude bounds, topographically defined regions, metropolitan areas, DOT districts, Public Land Survey System townships, American Indian reservations, etc.*

9. If exception and proposal are submitted, describe designs intended.

Additional Stakeholders: Wisconsin Land Information Council, Wisconsin Department of Administration, Southeastern Wisconsin Regional Planning Commission, University of Wisconsin-Madison, University of Wisconsin-Platteville, City of Madison, Wisconsin Spatial Reference System 2022 Task Force.

10. Please provide origin (e.g., grid) and certain conditions to

Additional Stakeholders: Wisconsin Land Information Council, Wisconsin Department of Administration, Southeastern Wisconsin Regional Planning Commission, University of Wisconsin-Madison, University of Wisconsin-Platteville, City of Madison, Wisconsin Spatial Reference System 2022 Task Force.

This request is for NGS to design a default three-zone layer for Wisconsin. We understand that map projection types (i.e., Lambert Conformal Conic) and zone boundaries will be identical to those of SPCS 83. We further understand that each of the three zones will be designed at the topographic surface and that their central parallels will be specified as parameters, as opposed to their having pairs of standard parallels specified as parameters. We also understand that the false eastings of each of the three zones will be significantly different from those of SPCS 27 and SPCS 83.

11. As the primary point of contact for the listed stakeholder groups, I affirm that this submittal accurately represents their wishes for the U.S. state, territory, or federal district identified herein.

Date:

Reset form

Save form

Estimate for development of a three-zone layer (Alan Vonderohe, 12/12/19)

There are a number of options (retain existing SPCS 83 zone boundaries for all):

Option 1. Design at ellipsoid surface.

Sub-option 1.A. Do nothing. Retain existing SPCS 83 parameters. Level of effort = zero, except publication of this sub-option.

Sub-option 1.B. Change false eastings and/or northings of SPCS 83 parameters. Retain remaining SPCS 83 parameters. Level of effort = 1 hour plus publication.

Option 2. Design at Earth surface.

Sub-option 2.A. Use USGS DEM clipped at specified lat/longs (max/min for both) beyond zone extents. Level of effort:

- i. SCO staff – 6 hours downloading DEMs, clipping, and posting for Vonderohe to download.
- ii. Vonderohe – 22 hours specifying extents for clipping; modifying, compiling, and testing optimizer software; downloading and preparing DEMs; running optimizer and preparing graphics; delivering results.

Sub-option 2.B. Use USGS DEM clipped at zone boundaries. Level of effort:

- i. SCO staff – 16 hours downloading DEMs, making shapefiles of zone boundaries, clipping, and posting for Vonderohe to download.
- ii. Vonderohe – 20 hours modifying, compiling, and testing optimizer software; downloading and preparing DEMs; running optimizer and preparing graphics; delivering results.

NOTE: Levels of effort for sub-options 2.A. and 2.B. do not include publication.

NOTE: For sub-options 2.A. and 2.B., decisions must be made whether to adopt output parameters from optimizer, as is, or to round to nearest seconds or minutes of arc, specified number of decimal places, etc. If the optimizer output is modified, then additional effort will be necessary to develop statistics and graphics of distortions, if desired.

NOTE: For sub-options 2.A. and 2.B., SCO staff time can be greatly reduced if Vonderohe can 1) receive instructions on downloading USGS DEMs; 2) obtain a statewide shapefile of county boundaries; and 3) obtain a one-year license to ArcGIS (I have no idea what this would cost).

NOTE: In all of the above, “publication” means development and delivery of whatever documents, communications, and outreach are deemed appropriate.

WSRS2022 at the 2020 WLIA Annual Conference

Time slot: 90 minutes on Friday Morning (Feb 21, 2020)

Location: Middleton, Wisconsin

Title: Are you ready for 2022?

Abstract: The Wisconsin Spatial Reference System 2022 Task Force (WSRS2022) was formed to help prepare for the introduction of a new terrestrial reference system in 2022 that will replace NAD 83 and NAVD 88. This change will affect all geospatial professionals to some degree, whether they collect and manage data in WISCRS, perform surveys with GPS, or make small-scale maps using WTM. After 2022, horizontal coordinates will change by 1.25 meters or more, elevations will change by 0.75 meters or more, both horizontal and vertical coordinates will change over time requiring a time-stamp to relate them back to their starting epoch, and the US Survey Foot will no longer be used. Come to this session to learn about these changes, how they affect you, and what WSRS2022 is doing to help make the transition smoother. This session will include short presentations by members of WSRS2022 and a question-and-answer period.

Agenda (proposed):

Overview of WSRS2022 formation, structure, focus groups, and activities. Acknowledge supporting organizations, especially WSLS. (Also note WLIA involvement and SAGIC support letter.) Overview of correspondence with NGS. Dick and Howard. 15 mins.

Brief Q&A period.

Tech Focus Group summary of Wisconsin's proposal to NGS for a 3-layer system. Explanation of LDP (WISCRS) proposal. Status of the proposal at this time. Alan? 20-30 mins.

Brief Q&A period.

Update on the US Foot. Glen? 10 mins.

Brief Q&A period.

Updates from other focus groups:

- Education/Outreach. 5 mins
- Adoption/Implementation. 5 mins
- Legislative. 5 mins
- Hardware/software (No lead at this time. No update?)

Q&A (20-30 mins)

We would welcome all WSRS2022 Focus Group members to be present for the session and especially the Q&A.

Questions/Ideas:

Should we assign each focus group a “teaser” question to pose to the audience that highlights the specific group’s biggest issue -- to act as a seed for the Q&A session? This might be more productive than them simply reporting “We haven’t been able to do much up to this point”.

Should we call the focus group leads up on stage as a panel?

Who would the focus groups like to nominate as their representative on the panel?

Other thoughts and ideas from you...