

Talking Points for English/Metric Conversion of NGS Coordinates

NGS publishes coordinates for Geodetic Control monuments that are used by the surveying and GIS communities.

For the current datum, NAD83, they publish the coordinates in metric units.

Most users would like the coordinates published in English (feet) units.

There are two different conversions to go between metric and English: The international (SI) based upon $1'' = 2.54\text{cm}$, and the U.S. Survey Foot based upon $1\text{m} = 39.37''$. While the difference between the two factors is not large, it makes a difference over large distances such as those represented by the State Plane Coordinate System.

NGS has previously published guidance to the effect that if a state enacted legislation specifying which conversion factor to use, they would publish coordinates for that state in both metric and English units.

Minnesota has not enacted such legislation, though the preferred conversion factor may be inferred by the fact that M.S. 505.20 specifies that NAD27 coordinates are expressed in "U.S. Survey Feet" and NAD83 coordinates are expressed in "meters."

NGS has now stated that, in the absence of specific legislation, they will publish coordinates in both systems upon receipt of a letter from the main surveying and GIS organizations within the state agreeing upon which conversion factor to use. Toward that end, Rick Morey from Mn/DOT is seeking concurrence from the following groups on requesting that NGS provide English coordinates using the U.S. Survey Foot as the conversion factor:

- MN GIS/LIS Consortium
- Governor's Council on Geographic Information
- Minnesota Society of Professional Surveyors
- Minnesota Association of County Surveyors

Attch: NGS Policy Statement
Request to NGS



**POLICY OF THE NATIONAL GEODETIC SURVEY
CONCERNING THE PUBLICATION OF NORTH AMERICAN DATUM OF 1983
STATE PLANE COORDINATES IN FEET**

February 2006

BACKGROUND

In 1991, the National Geodetic Survey (NGS) adopted a policy that defines the conditions under which the North American Datum of 1983 (NAD 83), State Plane Coordinates (SPCs) may be published in feet in addition to meters. As outlined in that policy, each state or territory must adopt NAD 83 legislation (typically referenced as Codes, Laws or Statutes), which specifically defines a conversion to either U.S. Survey or International Feet. That policy was drafted, in part to encourage states and territories to enact legislation to adopt NAD 83 as their official reference system and to legitimize a specific foot conversion for all spatial data users in their communities. To date, 48 states have adopted the appropriate legislation. However, for various reasons, only 14 have completed the requirements outlined in the 1991 policy for publication of SPCs in feet. This lack of uniformity has led to confusion and misuse of SPCs as provided in various NGS products, services, and tools. In an effort to enhance the quality of this significant part of the National Spatial Reference System (NSRS) the following procedures are provided as a replacement for the 1991 policy.

POLICY STATEMENT

If a state or territory has not enacted NAD 83 legislation, NGS will publish metric SPCs units only; but will continue to provide technical assistance to individuals, agencies, and organizations interested in completing this effort.

If a state or territory has enacted NAD 83 legislation which specifically defines the conversion factor, for either the U.S. Survey Foot or the International Foot, NGS will automatically publish NAD 83 SPCs in both meters and the specified feet for that state or territory.

If a state or territory has enacted NAD 83 legislation without specifically defining the conversion factor for feet, NGS will (following a review by the NGS Director) publish foot values, if the following conditions are fulfilled:

1. An interested person, governmental agency or professional organization in the state/territory makes a request to publish a specific foot to the NGS Director.
2. The NGS Director assigns a technical coordinator to assist the requestor, to ensure appropriate state or territorial surveying, mapping and GIS agencies and organizations are contacted and are in consensus. These may include, but not be limited to:
 - a. Land Surveying Professional Association
 - b. Transportation Department
 - c. Office of Geographic Information
 - d. GIS professional association or consortium
3. An official written request is made to the NGS Director, signed by senior representatives of the requesting agencies and organizations as approved by the technical coordinator.
4. The technical coordinator drafts and publishes a Federal Register Notice (FRN) outlining the state or territory's intent to publish SPCs in a specific foot. If no irresolvable comments are received within 30 days after the FRN publication, the technical coordinator will work with various NGS divisions (responsible for SPC publication) to ensure the conversion is implemented into appropriate NSRS products, services and tools.



Minnesota Department of Transportation

Office of Land Management

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November 16, 2006

David Zilkoski
Director
National Geodetic Survey
1315 East-West Highway
Silver Spring, MD 20910-3282

Dear Mr. Zilkoski:

The Minnesota Department of Transportation (Mn/DOT), Minnesota Society of Professional Surveyors (MSPS), Minnesota Association of County Surveyors (MACS), Minnesota GIS/LIS Consortium, and the Minnesota Governor's Council on Geographic Information, are hereby requesting the National Geodetic Survey (NGS) to publish State Plane Coordinates in both meters and U.S. Survey feet on all geodetic data products in the National Spatial Reference System (NSRS) where the horizontal coordinates have been precisely determined relative to the North American Datum of 1983 (NAD 83).

It is the consensus of spatial data users in Minnesota that this would be of significant benefit for the implementation and dissemination of geographic data.

Thank you for your attention to this request.

Sincerely,

Rick Morey
Assistant Director, Surveying & Mapping Section
Office of Land Management

Ed Otto
President, MSPS

Pat Veraguth
President, Minnesota Association of County Surveyors

Annette Theroux
Chair, MN GIS/LIS Consortium

Rick Gelbmann
Chair, MN Governor's Council on Geographic Information

Cc: Dave Doyle - NGS