ACSM 2003 - Technical Presentation
Impact of New Federal Geographic Data Committee
Positioning Accuracy Standards On the Surveying and Mapping Community

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BIOGRAPHICAL SKETCH

Ms. Shields is a geodesist in the Network Analysis Branch, Spatial Reference System Division, of the National Geodetic Survey. She received a bachelor's degree in Mathematics from the University of Massachusetts/Boston in 1976. Ms. Shields has been with NGS since 1980. She was involved primarily with geodetic adjustments, participating in the adjustment of the North American Datum of 1983. After publication of the NAD 83 (1986), her primary responsibilities included the integration of new Global Positioning System (GPS) projects into the National Spatial Reference System. This included assisting with development of the constrained adjustment guidelines and holding a primary responsibility for the High Accuracy Reference Networks adjustments and the state-wide readjustment of several states. Ms. Shields participated on an NGS technical support team for the Romanian Institute of Geodesy, Photogrammetry and Cartography. She is currently involved in GPS and geoid height activities, ADJUST workshops, and support for the NGS Web site group.

ABSTRACT

Surveyors and engineers have always needed to know the accuracy of the surveys they performed to meet the requirements of their customers. With the advent of the Global Positioning System (GPS) technology, customers (users) and their needs have changed significantly. It is more important than ever for the surveyor to understand the accuracy of the results of his/her work.

New users, specifically those in the field of Geographic Information System (GIS), need a means to relate different kinds of spatial data in a consistent system. Thanks to the Federal Geodetic Control Subcommittee (FGCS), we now have new Geospatial Positioning Accuracy Standards to do just that. The previous accuracy standards treated different types of spatial data differently, and accuracies for survey data were computed using different methodologies. The new standards provide a means to relate horizontal and vertical positional data from different sources in common terms. NGS has begun implementing these new standards for all the survey point data in its database. As these new standards are adopted and specifications are developed to enable users to meet these standards, members of the surveying community will need to understand how to apply these standards to their own work.

In this presentation, the evolution of the old standards and specifications into the new standards, and the differences between them, is explained. NGS' plan to implement these standards is described, from computation to publication. In addition to the status of this transition, future tasks, such as the development of specifications to accompany these standards, will be covered. Finally, the impact of these new standards on the activities in the surveying community will be addressed.