



- Geospatial Positioning Accuracy Standards, Part 1: Reporting Methodology
- Geospatial Positioning Accuracy Standards, Part 2: Standards for Geodetic Networks.
- Spatial Data Transfer Standard (SDTS) Part 6: Point Profile
- Metadata Profile for Shoreline Data

8. Performance Measures: Does your agency have performance measures for spatial data activities? If so, please list the measures and target and describe how they contribute to development of NSDI.
- Yes. Percentage of U.S. counties rated as enabled or substantially enabled with accurate positioning capacity. Twenty-five percent are currently substantially enabled, with target goal 90% enabled by 2011. The local capacity for accurate positioning is fundamental to reliable geographic data.
9. Reducing Redundancy of Planned Acquisitions: Do you use the Geospatial One-Stop portal, geodata.gov, to ensure that the data are not already available?
- NGS uses geodata.gov for imagery to assist in shoreline mapping. NGS coordinates data collection activities with its federal partners through the Federal Geodetic Control Subcommittee (FGCS) and works jointly with state and local entities in the collection of geodetic survey data. The FGCS website hosts the Federal Survey:  
<http://www.ngs.noaa.gov/FIELDOPS/opsplan.html>
10. Collection: Do your agency contracts and grants involving data collection include costs for NSDI standards?
- Yes. Statements of work include requirements to meet the pertinent NSDI standards, the cost of which is covered by the contractor's cost estimates
11. Clearinghouse for Existing Data: Is all the data and/or metadata that your agency is able to share with the public published on the NSDI Clearinghouse? If not, please cite barriers encountered.
- Metadata are available via the Federal Geodetic Control Subcommittee and the NOAA Coastal Services Websites. The NGS data are available from the NGS Web site. Both data and metadata will be published on the NSDI Clearinghouse as part of the Geospatial One-Stop effort.
12. Clearinghouse for Planned Investments: Is your agency posting information on planned investments in geospatial information to the Geospatial One-Stop portal to encourage partnerships and leverage investments in the acquisition of geospatial data? If not, please cite when you will begin doing so and what barriers you have encountered that would prevent posting this information.
- Not yet. GeoSpatial One-Stop Module 3 planned data acquisition facility does not yet appear to in operation. Guidance is needed.
13. Geodata.gov: If metadata for your agency's geospatial data/information holdings is on a Clearinghouse Node already, has that Node been registered on

geodata.gov for scheduled harvesting visits? If not, when is the Node scheduled to begin regular visits by the godata.gov harvester?

Yes, both geodetic control and shoreline data are available via Geodata.gov.

14. E-Gov: How are you using geospatial data in your mission activities to provide better services? (Please list)

All aspects of then NGS primary mission of providing geodetic control for spatial reference are reliant upon geospatial data. Providing electronic access to spatial reference has major a major improvement in the agency's delivery of geospatial data products and services, including:

- Web access to geodetic control data sheets,
- Web access to GPS Continuously Operating Reference Station (CORS) data, and
- Web-based On-line User Positioning Service (OPUS).

The data are also used in-house to accurately position aircraft when gathering remote sensing imagery for shoreline mapping and airport surveys.

15. Geospatial One-Stop: How is your agency involved in the Geospatial One-Stop (Funding Partner, Channel Stewardship, geospatial framework data interoperability pilots, posting standards based Web Mapping services to the portal, etc)?

NGS is the lead agency involved in the development of the Geodetic Data Content Standard. NGS is also taking the lead in development of the Shoreline Data Content Standard. The NGS Survey Control Map, used for retrieving geodetic control data, and the Shoreline Data Explorer are accessible via the Geospatial One-Stop Portal.

16. Enterprise Architecture: Is geospatial data a component of your enterprise architecture? Please provide a brief summary of how geospatial data fits into your enterprise architecture.

Yes. NGS performs functions necessary for NOAA to attain its objective to "Develop the National Spatial Reference System (NSRS)" and help enable accurate positioning capacity at the local level. NSRS provides the United States with a common geographic framework, is the foundation for the National Spatial Data Infrastructure (NSDI), and is essential for mapping, charting, navigation, boundary determination, property delineation, resource evaluation surveys, and scientific applications. Efforts to increase the reliability, accessibility, availability, accuracy, currency, and timeliness of NSRS are fully coordinated with NOAA's enterprise architecture.

17. Partnerships: What efforts are being taken to coordinate data and build partnerships at the field level for data collection and standards development? Identify partnerships and data sharing activities with other federal agencies, state, local, and tribal governments and other entities. Does your agency have any formal agreements or MOU's concerning data sharing and integration?

NGS is very actively involved in numerous partnerships with other entities in providing access to consistent and accurate spatial reference.

- Thirty-four states and territories have either a State Geodetic Advisor, jointly funded through agreement between NGS and the individual state, or a locally funded State Geodetic Coordinator. The State Geodetic Advisors provide liaison between the state and NGS and assist in coordinating data collection and standards implementation in the state.
- Eighty-three state, local, academic, private, and other federal agencies partner with NGS in providing Global Positioning System (GPS) data from Continuously Operating Reference Stations (CORS) to the NGS-managed National CORS network. NGS distributes data from National CORS over the Internet to aid GPS users in accurate positioning activities.
- NGS accepts survey data from state and local organizations for validation, archiving in and distribution from the NGS data base. These data are used to build out the nationwide Federal Base, Cooperative Base, and User Densification Networks of permanently marked geodetic control points.
- NGS works in local partnerships developing spatial reference centers in California and Louisiana as well as with state geodetic surveys in North and South Carolina and with the Wisconsin Department of Transportation to implement Height Modernization in those states. Height Modernization is an NGS-led effort to provide local access to consistent and accurate height information through the use of GPS technology.

18. Concerns or Lessons Learned: Are there areas or issues regarding spatial data that require attention, or lessons learned that you would like to share with others? Please describe.

There are four concerns to be addressed:

- Consistency – The ability to smoothly integrate a point’s coordinates with other points from different sources has been addressed by the promulgation of official national datums. The North American Datum of 1983 (NAD 83) applies to horizontal coordinates and ellipsoid heights and the North American Vertical Datum of 1988 (NAVD 88) applies to vertical coordinates. Software tools for have been developed by NGS to transform coordinates between datums.
- Accuracy – The ability to regularly achieve high levels (a few centimeters) of positional accuracy has been vastly improved by employing GPS techniques developed by NGS. This effort continues in concert with enhancements to GPS satellites.
- Timeliness – The ability to determine consistent and accurate coordinates when there needed (i.e., as quickly as possible) is the major issue at present, as the longer it takes to accurately position a point, the greater the labor costs per point. Techniques, procedures, and best practices are continually being developed by NGS to reduce the time required to position a point to the desired level of accuracy.
- State Legislation on spatial reference – The issue is relevancy of existing state legislation regarding spatial reference for establishing boundaries and the use of electronically accessed geodetic control (i.e., GPS continuously operating reference stations) for this purpose. This is

primarily of concern to land surveyors who use NGS data. Most states have explicit language in their legislation regarding land surveying and how valid boundaries are referenced. Most of this legislation was written in the era when classical line-of-sight surveying techniques were used to connect, either directly or indirectly, boundary surveys to permanently marked geodetic control. The use of GPS techniques has revolutionized surveying such that a land surveyor no longer needs to physically visit a survey control marker. Some existing state legislation may no longer adequately relevant to current technology.