

The National Map in the NPS in Partnership with the USGS

Concept Paper

Overview

Revised OMB Circular A-16: Coordination of Geographic Information and Related Spatial Data Activities, recent E-Gov initiatives such as Geospatial One Stop (GOES), and Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure (NSDI)," provide direction for federal agencies that produce, maintain, or use spatial data either directly or indirectly in the fulfillment of their mission and outlines agency roles and responsibilities. These mandates call for implementation of the NSDI, a framework to organize and enhance the activities of the geospatial data community to meet the Nation's needs for common spatial data themes (transportation, hydrography, geodetic control, elevation and bathymetry, boundaries, digital imagery, and cadastral information) in an efficient and timely manner. In support of the NSDI, the U.S. Geological Survey (USGS) and National Park Service (NPS) desire to form a partnership that supports sharing of geospatial data and the development of new processes to provide revised data themes from National Park System units to *The National Map*.

The National Map (TNM) is a portal of GOES and/or NSDI created by USGS to provide up-to-date, on-line USGS and related products to the public. The TNM consists of a seamless National coverage of topographic, base cartographic, and geographic names data layers maintained through partnerships and made publicly available via the Internet. TNM is a consistent framework for geographic knowledge needed by the Nation. Stage I of TNM implementation is currently underway and focuses on eight base themes: elevation, orthoimagery, hydrography, geographic names, land cover, transportation, structure, and boundaries. The program provides public access to high-quality geospatial data and information from multiple partners to help informed decision making by resource managers and the public. TNM enhances America's ability to access, integrate, and apply geospatial data at global, national, and local scales. As a partner on The National Map, the NPS will become the recognized data steward for several base cartographic data layers, such as boundaries and roads, under NPS administration. In return, the USGS will publish up-to-date data acquired from the NPS on the public server of TNM. An ongoing pilot project is providing the basis for NPS-USGS cooperation for a national scale partnership with TNM.

The NPS is currently working with the USGS Rocky Mountain Mapping Center (RMMC) on a TNM pilot project for Rocky Mountain National Park (ROMO). This pilot project has focused on getting the most current base cartographic data for the park into the USGS database. In conjunction with the ROMO project, the Natural Resource Information Division (NRID) is developing an enterprise geodatabase application to roll-up geospatial data from the NPS Inventory & Monitoring Program's Base Cartography Inventory (BCI). The NRID geodatabase will utilize a data model that is compatible with TNM. RMMC and NRID are also working with the NPS National Information Systems Center (NISC) GIS Division on defining and prioritizing cooperative data projects for FY 2004 and beyond. The NISC GIS Division is participating in DOI Enterprise Architecture planning, spatial data needs assessments, data standards, and geodatabase design for NPS systems. The overarching goal is to define database standards and provide infrastructure for future park base cartographic updates and continued cooperation.

The NPS and USGS have a long history of partnership with developing base cartographic and other geospatial resource data. Almost all of the NPS BCI data were acquired via a cost share partnership for USGS National Mapping Program products (many of which need to be updated and converted to TNM). The NPS and USGS are currently working to define responsibilities on TNM that are mutually beneficial and utilize existing resources most efficiently. This cooperation is focusing on a work share and data exchange partnership with in-kind contributions from each agency. After the products, roles, and timeline become better defined, the NPS and USGS will seek to implement the partnership more formally with a written Memorandum of Understanding (MOU).

Goal

To improve data sharing among the NPS, USGS, cooperators, and public with quality, up-to-date, geospatial products and services.

Initial Focus

Through cooperation with the USGS, develop protocols and standards for stewardship, sharing, and delivery of geospatial data products that meet NPS, USGS, and public user needs.

Products

1. **NPS-USGS TNM cooperative group(s):** Clearly articulate need and requirements for NPS-USGS TNM partnership. Identify and solicit committee members for both steering TNM cooperation and for managing joint projects and tasks.
2. **Rocky Mountain National Park pilot project:** Document the geodatabase schema used for the park data. Review the geodatabase and results of the project in light of National TNM standard data layers for all NPS units. Complete the project through publication of data on TNM public viewer(s), and communicate results to managers and users within the respective agencies.
3. **Geospatial data layers and priorities:** Develop a comprehensive list of data layers to be shared between the NPS and USGS. Define the attributes for each layer and determine core and agency-specific attributes. Prioritize the list of geospatial data layers for conversion and updates. The preliminary list includes park boundaries, roads, geographic names (GNIS), trails, state and county boundaries, NPS network and region boundaries, geographic overlays and map quadrangles (24K and 100K), Public Lands Survey System (PLSS), DRGs, hydrology, hypsography, DEMs, DOQs, and layers identified from pilot projects and existing systems.
4. **Data stewardship and sharing:** Determine appropriate geospatial data layers for NPS and USGS stewardship, and develop protocols and procedures for maintaining and updating respective data layers. Determine appropriate resource requirements (personnel, hardware, software, training) for NPS and USGS to support their roles and data stewardship responsibilities.
5. **Communication of TNM partnership and projects:** USGS and NPS presentations at NPS Spatial Odyssey GIS Conference. Identify and participate in meetings and conferences to communicate and promote NPS-USGS partnerships and data sharing with TNM and other cooperative opportunities.

Resources

NPS \$100K? to complete the NPS Base Cartography Inventory (BCI) with cost share USGS products. This will essentially complete base data needs for the NPS TNM. It is anticipated that the entire BCI will be converted and loaded into the geodatabase during FY 2004 and FY 2005.

USGS In-Kind Support. USGS will provide initial data loading and documentation of NPS-provided data layers for the Rocky Mountain N.P. pilot project and select National data layers. USGS will provide professional consultation and planning on TNM database requirements. Existing schemas may be modified to allow data sharing of identified geospatial data layers. USGS will provide initial, identified data layers (e.g., GNIS) to the NPS for current updates and subsequent publication into TNM. USGS will provide identified geospatial data layers (e.g., seamless hypsography) to the NPS as completed and/or updated for TNM use. USGS will provide hardware, software, and personnel resources for testing and implementation of NPS geospatial data layers into TNM and public TNM Viewer.

NPS In-Kind Support. NPS will provide infrastructure and professional consultation and planning on NPS enterprise database requirements. NPS will provide hardware, software, and personnel resources for testing and implementation of NPS geodatabases in support of identified data layers for TNM. The NPS will receive initial, identified data layers (e.g., GNIS) from the USGS and coordinate updates

with NPS Regions and Parks. The NPS will provide updated geospatial data layers to the USGS for inclusion and publication in TNM.

Roles

- NPS** Will identify NPS geodatabase needs and will work with NPS programs and projects to communicate TNM, GIS, and geodatabase requirements and standards. NRID will work on geodatabase requirements analysis for Natural Resource applications.
- USGS** Will identify USGS and TNM geodatabase needs and will work with USGS programs and projects to communicate TNM, NPS, and geodatabase requirements and standards. USGS will coordinate TNM projects and requirements analysis for partner projects.
- NPS/USGS** Will coordinate NPS-USGS data layers and geodatabase needs for TNM geodatabase requirements and standards. Will coordinate data sharing and distribution to support TNM partnership. Will coordinate annual cooperative projects to support TNM data development tasks.
- NPS** Will develop and populate geodatabases that support NPS programs and projects and TNM partnership. Will steward identified NPS geospatial data layers and coordinate periodic data updates with NPS Regions, Parks, and cooperators. NPS will periodically deliver updated data to the USGS.
- USGS** Will deliver identified NPS data to the public using standard TNM services and user interfaces. USGS will periodically deliver identified TNM and other partner data to the NPS.

Timeline and Tasks

(Note: Timeline and tasks are identified for the initiation of specific items during the first year of this collaborative effort. Many of the identified tasks will be ongoing over a period of years, new studies will be initiated during subsequent years, and database maintenance or upgrade will be a continual effort.)

- June 2003:** NPS-USGS meet for TNM demonstration and to discuss NPS-USGS TNM pilot project with data from Rocky Mountain N.P. Introduction of TNM geodatabase model and loading cartographic data into TNM.
- September 2003:** NPS-USGS meet and discuss progress on Rocky Mountain N.P. project and develop initial task list for development and update of geospatial data layers in FY 2004. The preliminary list for FY 2004 includes park boundaries, updated roads, and updated geographic names (GNIS).
- October 2003:** NPS-USGS meet and discuss progress on Rocky Mountain N.P. project and initial work with NPS boundaries and other IMS data. Draft geospatial data layers list and attribute requirements for FY 2004 projects. Discuss TNM partnership white paper and need for MOU. Discuss issues with symbology of NPS data.
- November 2003:** USGS publishes Rocky Mountain N.P. data on TNM viewer for public distribution. NPS drafts geodatabase schemas for NR and TNM geospatial data layers.
- December 2003:** USGS presentation of TNM and Rocky Mountain N.P. pilot at the NPS Spatial Odyssey GIS Conference. NPS presentation of "TNM in the NPS" at the NPS GIS Conference. NPS QAs boundaries data set and attributes per agreement at October meeting. NPS-USGS determine requirements for initial NPS roads data layer?? NPS delivers updated boundaries(??) and the bounding boxes for GNIS database query.

- January 2004: NPS-USGS meet to discuss progress on cooperative projects and to draft MOU for TNM partnership. NPS initiates geodatabase for NR and TNM geospatial data layers and begins pilot testing of data conversion and loading procedures. NPS GIS receives updated boundary data from NPS Lands Division?? USGS delivers roads geodatabase(?) to NPS? USGS delivers GNIS geodatabase(?) to NPS.
- March 2004: NPS-USGS complete final draft of MOU for TNM partnership and distributes for management review. NPS initiates call to Regions and Parks to update GNIS and roads geospatial data layers. NPS delivers updated boundaries??
- April 2004: NPS completes pilot testing of data conversion and loading procedures for initial NR and TNM geodatabase layers and begins production loading of base cartographic data. NPS shares data loading and geodatabase development timeline with USGS and cooperators. USGS tests and implements links from TNM to ParkNet.
- June 2004: MOU for TNM partnership complete.
- September 2004: NPS-USGS meet and discuss progress on projects and other NPS data. Draft geospatial data layers list and attribute requirements for FY 2005 projects. NPS completes call to Regions and Parks to update GNIS and roads geospatial data layers. NPS delivers updated GNIS and roads data sets to USGS??
- October 2005: NPS-USGS meet to discuss and complete geospatial data layers list and attribute requirements for FY 2005 projects. NPS-USGS initiate FY 2005 projects.