

FGDC Annual Report to OMB Format for Agency Reports – FY 2003

The following outline should be used by FGDC Member Agencies (or Bureaus) for their Annual Spatial Data Reports, which will be consolidated by the FGDC and submitted to OMB. Reports **should be brief, using bullets where possible**. Please provide only the information that will be useful for OMB to assess the agencies' achievements and for establishing future direction.

Part A

GENERAL FEDERAL AGENCY RESPONSIBILITIES REPORT (All Agencies)

1. **Agency or Bureau:** Department of Transportation

2. **Name of Contact for Report:** Mark Bradford
Email: mark.bradford@bts.gov
Phone #: (202) 366-6810

3. **Steering Committee Member:** William Chang
Email: William.chang@bts.gov
Phone #: (202) 366-4334

4. **Coordination Group Participant(s):** Carol Brandt
Email: carol.brandt@bts.gov
Phone #: (202) 366-6662

Participant(s): Mark Bradford
Email: mark.bradford@bts.gov
Phone #: (202) 366-6810

5. **Subcommittee or Working Group Participation (Subcommittees or Working Groups your agency is involved with, but does not lead).**

The USDOT's modal administrations are involved in the following subcommittees and working groups.

- Geospatial One-Stop Initiative
- Federal Geographic Data Committee (FGDC) Coordination Group
- FGDC Steering Committee
- FGDC Standards Working Group
- Geospatial Applications and Interoperability WG
- FGDC Homeland Security WG
- DOD's Joint Forces Command Homeland Infrastructure Foundation Level Database (HIFLD)
- TRB Statewide Transportation Data and Information Systems, A1D09
- TRB Committee on Spatial Data and Information Science, A5015
- National Aerospace (NAS) Information Architecture Committee (NIAC)
- Geospatial Information System Working Group (GISWG/NIAC)

- FAA's Automated Integration Team (AIT)
- Aeronautical Radio Inc. (ARINC) 424
- Interagency Air Cartographic Committee (IACC)
- Radio Technical Committee for Aeronautics (RTCA) Committee
- Minimum Safe Altitude Warning (MSAW) and Conflict Alert Policy Board

6. Strategy: Has your agency prepared a detailed strategy for integrating geographic information and spatial data activities into your business process - in coordination with the FGDC strategy, pursuant to OMB Circular A-16? If yes, briefly describe.

No, USDOT has not prepared a detailed strategy for integrating geographic information and spatial data activities into its business process. Each modal administration within the Department acts, in many ways, like independent agencies with similar goals but independent focus.

- Currently the Bureau of Transportation Statistics acts as the lead for geographic information in the Department and has started discussions with the Office of the Chief Information Officer to begin the process of developing a more enterprise view and operations related to geographic information.
- BTS is in the process of developing an internal policy for integrating geospatial activities into the BTS business process. BTS has not formalized the schedule for this project.
- The FAA has formulated a sound foundation with the GISWG (GIS Working Group) in preparation for integrating geographic information and spatial data activities into its business process. The GISWG has brought together people with experience and background to enhance and support the NAS (National Airspace System), and over the next year will be working to develop a detailed strategy.

7. Compliance: How are your spatial data holdings compliant with FGDC Standards? Also, please list the FGDC Standards you are using or plan to use in your organization.

All geospatial data distributed through the National Transportation Atlas Database (NTAD) Program comply with appropriate existing FGDC standards. These data that comprise the NTAD are collected, created, or maintained by the modal administrations that make up the DOT. To-date the only standard relevant to the Department's geospatial data holding is the FGDC Content Standard for Digital Geospatial Metadata.

- BTS plans to implement all future Geospatial One Stop standards approved through the American National Standards Institute (ANSI) process developed in conjunction with the FGDC.
- BTS conducts QA/QC on other transportation data distributed through the NTAD Program as well as prepares FGDC compliant Metadata for each.

8. Redundancy: Prior to collecting data, how does your agency ensure that the data are not already available?

Each modal administration acquires geospatial data independently with knowledge of geospatial information available through other modes within DOT. There is no Departmental systematic method to ensure that data exists prior to the start of any new data collection activity.

- BTS surveys other Federal and state transportation agencies to ensure that the identified data does not already exist. BTS also considers whether another agency is planning to create the database in the near future. If the answer is yes to either of these points, BTS will either use the existing data or explore ways to assist or participate with other interested agencies in its creation.
- FAA orders and standards/guidelines assign responsibility to FAA line offices for collecting, evaluating, documenting and distributing data. There are extensive searches conducted (government & the private sector) for data, using sources such as the World Wide Web and also known contacts within the aviation industry.

9. Collection: Do your agency contracts and grants involving data collection include costs for NSDI standards?

As an agency there is no policy in place to assure that data collected or created conforms to NSDI standards. Each modal administration sets individual guidelines.

- BTS data collection efforts include costs for complying with NSDI standards.
- FAA adheres to certain aerospace geospatial standards, but is uncertain if these are compliant with NSDI standards.

10. Clearinghouse: 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.

All public data distributed through the NTAD Program is discoverable through the NSDI Clearinghouse. The Bureau of Transportation Statistics is a node on the NSDI Clearinghouse network. Some of the data available through the clearinghouse is maintained by other modal administrations.

- FAA data that is funded through public sale is not distributed free on the Internet to the public sector. Some of the funding for the maintenance of this data is derived from the public's need for certified Government information. Safety and temporal requirements for the distribution of high quality data published in the NSDI clearinghouse are under consideration.

- The Office of Pipeline Safety's (OPS) National Pipeline Mapping System (NPMS) data is security sensitive and is not widely distributed.

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

In general, USDOT is making more geospatial data available through the Internet both for download and through web-mapping applications for the public that do not have access to a geographic information system.

- BTS has developed an interactive Internet mapping center (www.transtats.bts.gov/mappingcenter.asp) that allows users to evaluate highway status as it relates to, among other things, physical characteristics and function. Another application allows the user to view railroad crossing safety information. Additionally, the geospatial data disseminated through the NTAD Program is available for download from the BTS web site. A user can download the data as a national dataset or in smaller geographic areas based on interest or need.
- FRA's web site "<http://safetydata.fra.dot.gov/maps/>" publishes grade crossing safety information. FRA also simulates rail freight traffic over its rail network geospatial database to track the movement of various commodities, including hazardous materials, which helps FRA in the distribution of its track inspection program. Finally, FRA maintains and distributes to the public two rail network geospatial databases (1:2,000,000 scale and 1:100,000 scale).
- FTA is using geospatial data to analyze a half mile radius around existing transit stops for population density. This information is used as a benchmark for funding future transit projects under the New Starts program.
- Within FAA, geospatial data is an integral and critical part of the air transportation information provided to the flying community and is part of its standard practice. At present, the official FAA source for National Airspace System (NAS) data is the NASR database. The following is a list of the services provided that use FAA's geospatial data:
 - NIAC/GISWG (NAS Information Architecture Committee), Enroute, Terminal, Tower and Regional Air Traffic Control Facilities, Radar Video Mapping (RVM);
 - Overall support of NAS, Minimum Vectoring Altitude (MVA), En-Route Information Systems (ERIDS) and CMAP;
 - Support of Digital Aeronautical Chart data and products which include but are not limited to the following: PCS, FDMSAW, DEVCONDOR Database, ARINC (Aeronautical Radio, Inc) Database, Obstruction Database, COMPSYS, Standards for Aeronautical Surveys-FAA Order 405, CMAP, IAP-PDF, Digital Terrain, VFR and IFR charts.
 - FAA is researching the feasibility of publishing government spatial holdings listed above on the Internet and the FAA Intranet.
- Within the FHWA, geospatial data is an integral part of the following activities: interactive GIS web sites for national highway system and

metropolitan planning, aggregation of census demographic data (e.g. population) by geographic units to compute highway-funding allocations, integration of spatial data with transportation planning and freight planning models. Some freight information for the Freight Analysis Framework (FAF) was developed using proprietary databases, but most of the information is available in the NSDI Clearinghouse.

- Members of the public can find lists of pipeline operators in a specific geographic area based on queries of Office of Pipeline Safety (OPS) geospatial data. The pipeline data is made available to governmental agencies and pipeline operators who are able to comply with OPS's data security protocols.

12. Geospatial One-Stop: How is your agency involved in the Geospatial One-Stop?

DOT is the lead for the transportation theme of the NSDI, as identified in OMB circular A-16 and thus is the lead for the transportation theme for the Geospatial One-Stop initiative.

- BTS is the lead within DOT in the Geospatial One-Stop initiative. In FY 2003 BTS is funding the development of prototype One-Stop servers and implementing the road data content standard using open standards. All Geospatial One-Stop standards were created through a standards development process approved by FGDC.
- BTS partnered with FGDC, Army Corps of Engineers, and the Open GIS Consortium to implement the draft road data content standard using XML/GML. This proof-of-concept web portal supports the Geospatial One-Stop initiative.
- FAA, FTA, FHWA and FRA are participating with BTS in the development of mode specific transportation standards for the Geospatial One-Stop.

13. 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.

As the geospatial lead in the Department, BTS is working with the DOT's CIO to determine appropriate enterprise architecture for geospatial and other business needs. A number of modal administrations are investigating enterprise architecture to fulfill their individual requirements.

- Geospatial data is part of BTS' enterprise architecture.
 - BTS has established a system and infrastructure to effectively share geospatial information within and outside the DOT. Sharing information is accomplished through the Internet data download, Internet Mapping system, or the NTAD.
 - BTS has been involved in cross-agency collaboration regarding the sharing and developing applications for geospatial data. For example, BTS has worked with the FTA to develop transit network databases, and

the FHWA to develop Internet Mapping applications. The results of these efforts have been to expand the value of services provided by the DOT as well as the quality and completeness of transportation data.

- BTS is integrally involved in leading the DOT effort to implementing appropriate E-Government initiatives.
- BTS has been involved in the development of all transportation mode standards comprising the GOS Framework Data Content Standard for Transportation.
- FRA has incorporated GIS and spatial data into its everyday business. FRA's geospatial rail network, through traffic simulation of hazardous materials, is used to allocate safety inspection resources. Also, FRA has started to use global positioning to more accurately locate its inspection sites. Geospatial data is incorporated into FRA "Services for Citizens" Business Area.
- The Office of Pipeline Safety intends to incorporate the NPMS with other internal compliance and inspection databases
- FHWA has no agency-wide enterprise architecture strategic plan.

14. 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.

Most modal administrations already have partnerships with other field units for the purpose of data collection. Modal administrations typically do not collect raw data from the field but receive data from other governmental and non-governmental units' databases.

- BTS seeks to develop relationships with field-level organizations, or the organization(s) closest to the data development process as possible. Before conducting any data gathering effort, BTS surveys the community to identify partners and other interested parties wishing to take part in or benefit from the project. Current activities include:
 - Working with State DOTs and private industry in the development of an Intermodal Facilities database.
 - BTS has worked with the FTA and American Public Transportation Association (APTA) to develop a national Transit spatial database.
 - BTS worked with FHWA to geo-locate bridges on a nation-wide spatial road network and with FHWA and Association of Metropolitan Planning Organizations (AMPO), to create a national Metropolitan Planning Organization Boundary database.
- FAA has built partnerships with the following organizations with its AVN-40 (Information Technology Staff, Aviation Systems Standards Program). These include: NIAC/GISWG, Enroute, Terminal, Tower and Regional Air Traffic Control Facilities, ATCA (Air Traffic Control Association), Interagency Air Cartographic Committee (IACC), North American Industry Classification (NAIC), AIT, Radio Technical Commission for Aeronautics (RTCA), EuroControl, NIMA, NASA, USGS, NOAA/NGS, Aircraft Owners and Pilots

Association (AOPA), ARINC (Aeronautical Radio, Inc), Airline Pilots Association (ALPA), and private agencies; developing overall support of NAS including ERIDS, CMAP in the Air Route Traffic Control Center's (ARTCC), support of Digital Aeronautical Chart data and products. FAA is researching the feasibility of publishing government spatial holdings listed above on the Internet and the Intranet.

- Most of the data FHWA collects are obtained through the States; some through other Federal agencies. Many of the States subsequently work with local or regional governments to obtain data on roadway facilities owned by those political entities. FHWA provides training and conducts outreach activities, such as workshops to reach State and other providers. Data that are collected are approved by OMB in an Information Collection Budget.
- OPS has a statutory requirement that mandates operators' submission of data to the NPMS.

15. 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.

Many agencies continue to have challenges related to acquiring resources, support, and visibility for Geographic Information Technology.

- BTS has been working with the DOT with the goal of recognizing GIS as a departmental program.
- One of the greatest challenges for the DOT is to overcome stove pipes, both between modal administrations as well as within each modal administration, regarding the coordination of data collection and use strategies.
- Within the DOT it has been recognized that standards for dealing with geospatial information security pertaining to critical infrastructure are not fully developed.
- BTS is developing a document on lessons-learned related to Geospatial One-Stop activities.
- FHWA has been working with states, Metropolitan Planning Organizations, and other Federal Government groups to improve FAF data quality and integration.
- FAA is sharing lessons learned by chairing the NIAC/GISWG and participating in the agency's geo-spatial initiatives.

Part B

LEAD AGENCY/BUREAU AND/OR SUBCOMMITTEE/WORKING GROUP REPORT (Agencies with Lead Responsibilities Assigned under the new Circular A-16 in Appendix E - <http://www.fgdc.gov/publications/a16final.html#appendix>) (Please provide a separate report for each activity for which you have the lead)

1. Program/Activity Name:

Transportation Data Development, Access, and Coordination

2. What are the specific federal programs this data supports?

DOT geospatial data support:

- Presidents Management Agenda on E-Gov;
- Transportation policy analysis;
- Homeland security.

3. Uses of Data: How does your data benefit customers and support agency missions?

Geospatial data produced from DOT GIS activities benefits customers and supports the DOT mission in a variety of ways:

- For analyzing changing traffic patterns related to growing vehicle volumes, primarily for trucks, but for other modes (rail, water, air, etc.) with some commodity detail;
- In regulatory function as well as providing general public information;
- To assist rail inspectors identify the location requiring a site visit;
- Planning and modeling proposed infrastructure investments; and
- Data conforming to the data content standards developed through the GOS initiative and implemented using XML and GML encoding will improve capabilities for geospatial data sharing and interoperability;

4. Charter/Plan: Do you have a current charter or plan for collection? If so - please describe (include how recently the charter/plan was implemented and whether it is in need of update).

Currently, the DOT does not have a collective policy for collecting geospatial data. To date, each modal administration has pursued its geospatial data collection needs independently.

BTS is currently developing an outreach plan to encourage non-Federal participation for GOS.

5. Metadata Status: Is metadata discoverable and served through the NSDI Clearinghouse? What percentage of this theme's data has metadata and is in a Clearinghouse node?

Yes, all public data includes FGDC compliant metadata and is discoverable through the NSDI clearinghouse.

6. Standards: What is the status of this theme's data, process, transfer, and classification standards?

Currently, the only FGDC standard followed by the DOT is the FGDC/ANSI Metadata standard.

- Before BTS distributes any geospatial data from the modal administrations, it ensures that each dataset has metadata that follows the FGDC/ANSI format.
- Five modal data content standards (road, rail, transit, air, and waterway) are in draft format, developed through the GOS process. They are scheduled for incorporation with the larger GOS standard for submittal to ANSI, September 2003.

7. Progress: List FY 2002/2003 activities/progress to date (quantify where possible).

Geospatial One-Stop:

- Developed draft data content standards for road, rail, transit and air
- Creating a proof of concept web portal to implement road content standard

BTS:

- Continuing development of the Internet Mapping Center – developed five separate applications to provide access to transportation information identified previously.
- Completed the data development project to create the Intermodal Facility database.
- In August 2003 initiated a project to create an Intermodal Transportation Network to provide for improved transportation analysis and modeling.

Partnerships:

- Continuing a cooperative effort between BTS and FHWA to geographically locate roadway bridges on highway network (anticipated completion 09/2003)
- BTS completed development of non-attainment area boundaries with cooperation from the EPA.
- BTS completed development of National rail transit networks in cooperation with the FTA and APTA.
- Completed development of Metropolitan Planning Organization Boundaries, in cooperation with the FHWA and AMPO.

FAA:

- NAS Information Architecture Committee (NIAC)
- Geospatial Information System Working Group (GISWG/NIAC) Chair
- FAA's Automated Integration Team (AIT) member

- ARINC (Aeronautical Radio, Inc) 424 member
- Interagency Air Cartographic Committee (IACC) member
- RTCA (Radio Technical Commission for Aeronautics) member
- MSAW and Conflict Alert Policy Board

FHWA:

- FHWA released the FAF database with current and projected forecasts of traffic at a road segment level. Commodity flow information was released at a state-to-state level.

8. Policy: Do you have a formal agency policy in place for full and open access or data sharing? Are you able to fulfill this policy and provide public access with your current agency financial resources as allocated or are you in pursuit of collaborative federal partnerships to support data access?

No, each modal administration within the DOT develops policy based on the individual mode's business needs. However, geospatial data that comprise the NTAD is available through the BTS internet data download application.

- Presently, BTS is able to provide access to the transportation modal agencies geospatial data. However, BTS is trying to identify collaborative partnerships to leverage resources.
- BTS has plans to develop a data sharing and access policy in coordination with other modal administration within the DOT.
- BTS is working to identify potential partnership opportunities to leverage resources.
- Pipeline data collected by the Office of Pipeline Safety is not available to the public.
- Through AVN's participation in the GISWG and Geospatial One-Stop, FAA is developing standards which support this effort and through interagency partnerships with groups such as the IACC and EuroControl.

9. Are there areas or issues regarding lead responsibilities for spatial data themes that require attention, or lessons-learned that you would like to share with others? Please describe.

- Because of the ubiquitous need for transportation (road) geospatial data many government agencies at all levels are creating or maintaining road data. The USDOT as the lead for transportation should bring the geographic community together to identify ways to reduce the duplication of effort and share more data between these agencies. The Bureau of Transportation Statistics is the lead within USDOT for geospatial information activities, but has limited resources.