FGDC Annual Report to OMB
Format for Agency Reports – FY 2004

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: United States Environmental Protection Agency

2. Name of Contact for Report: Wendy Blake-Coleman
   Email: Blake-Coleman.Wendy@EPA.gov
   Phone #: 202-566-1709

3. Steering Committee Member: Brenda Smith
   Geospatial Information Officer
   Email: Smith. Brenda @EPA.gov Phone #: 202-564-

4. Coordination Group Participant(s) Brenda Smith
   Email: Smith. Brenda @EPA.gov
   Phone #: 202-564- and
   Wendy Blake-Coleman
   Email: Blake-Coleman.Wendy@EPA.gov
   Phone #: 202-566-1709

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

   See Attachment 1 for the most current list of Subcommittees and Working Groups on which EPA participates, but is not the lead.

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.

   The EPA Geospatial Blueprint (June 2003), lays out goals, objectives, and key action items for more effectively and completely integrating geographic information and spatial data activities into EPA business processes. The objectives and action items in the EPA Geospatial Blueprint also emphasize the importance of complying with and implementing the FGDC strategy, pursuant to OMB Circular A-16.

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

EPA data holdings are compliant with FGDC point data standards and several EPA regions are fully compliant with FGDC metadata standards. EPA is taking several formal steps to ensure total compliance with the FGDC standards for points, content, and metadata required by OMB Circular A-16. This includes revising the EPA Locational Data Policy, which will state that all geospatial data that are generated must comply with FGDC geospatial standards for points, content, and metadata. It will also require that all geospatial data that EPA holds, but has not generated must be linked to the source meta-data files. The policy will also require that the systems and/or enterprise repositories in which latitude and longitude data and other geospatial data are stored have fields that will accommodate all the FGDC required elements. The revised policy will be submitted for Agency review in the spring of 2005.

EPA has a Latitude/Longitude Data Standard which all data generators and systems were required to implement by February 2002. This standard is compliant with the FGDC standard for point locations. EPA has an implementation process in place to assist its programs in their adoption and conformance with the Latitude/Longitude Data Standard. This process consists of several questionnaires that follow cyclical reporting requirements that include Capital Planning and Investment Control (CPIC) applications, Information Collection Request renewals, Application Deployment steps, and initial system design evaluations. The Agency also conducts internal outreach and meets regularly with program offices to ensure their information regarding EPA's data standards are current. A similar process is under consideration for ensuring compliance with the FGDC metadata standard.

With respect to internal geospatial data processing, EPA is building "metadata generating applications" into the design of its enterprise architecture. The Office of Environmental Information is working with regional and program offices to ensure they are familiar with these tools and encouraging them to procure and use tools such as ARC Catalogue and SIMMS to generate FGDC compliant metadata for any geospatial data they are generating. A formal implementation process to assist EPA regions and programs in their adoption and conformance with the FDGC metadata and content requirements began in FY 2003.

Regarding the FGDC Framework Themes for geospatial data standards, EPA has been a contributing member in the development of two of these framework Data Standards: Hydrography and Geodetic Control. In addition, EPA's representative to both the FGDC Standards Working Group and INCITS L1 has been reviewing each of these proposed data standards for application and implementation to EPA business processes.

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 the NSDI.
   Yes-they are:
   1. 100% of EPA Regional and 50% of Program Offices are Geospatial Data Index partners in 2005

2. 70% of identified data/metadata sets in GDI inventory are FGDC compliant in 2005
3. 70% of all FGDC compliant data/metadata are in the public area and searchable through EPA's NSDI clearinghouse node.

Note: Increasingly percentage of FGDC compliant data/metadata is important for EPA, because it allows for easier sharing of information across stakeholders, and enables EPA's continued involvement in the Geospatial One-Stop e-gov initiative. Making GDI data available to the public is also another key goal of the GDI and the geospatial program. Use of the metadata helps build the NSDI by making data sharing across various levels of governmental organizations possible.

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?

   Yes. Since FY 2004, EPA has been posting any significant geospatial data acquisitions to the Geospatial One-Stop Data Mart.

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

    No

11. 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.

    No. Although EIMS is structured to capture all FGDC metadata, most of the submitted data are not fully compliant with the FGDC metadata standard. The largest barrier to becoming compliant has been the large number of required elements in the FGDC metadata standard and inadequate time and resources committed to tagging data with the required information at the time of development.

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.

    Yes

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 geodata.gov harvester?

    Yes. The Environmental Information Management System is the EPA Clearinghouse node and is registered on geodata.gov for scheduled

harvesting visits. Data that are stored in FGDC compliant format on EIMS are routinely harvested by GOS. Currently over 400 EPA data sets are harvested by GOS.

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

Nineteen "areas of business" were identified as being supported by geospatial data and technology in the Geospatial Baseline Assessment, which was completed in June 2001. These include: Development of Criteria; Development of Methods and Protocols; Provision of Public Information/Trend Analysis; Development of Policies; Monitoring; Program Implementation Oversight; Development of Regulations and Guidance; Permitting; Compliance and Enforcement; Emergency Response; Research; Performance Measurement; Site Clean-up; Setting of Standards; Grant/Contract Implementation and Oversight; Laboratory Activities; Risk Assessment; Training; and Procurement. Some specific examples are listed below:

- Disaster prediction- by providing the data and tools needed to identify the specific geographic areas where certain kinds of disasters are most likely to occur: flood-prone areas, hurricane-prone areas, tornado-prone areas, areas prone to serious impacts from volcanic eruptions, earthquake-prone areas, etc. These data and tools help identify the areas where disaster planning is most needed. These areas can then be targeted first for emergency response and then for disaster repair after a disaster occurs.

- Environmental monitoring- by providing a geographic grid on which environmental monitoring data can be displayed. The data displayed can be used to identify serious gaps in monitoring networks. It can also be used to identify pollution isopleths and gradients.

- Pollution prevention and control- by providing tools that make it possible to determine the cumulative impact of multiple kinds of pollution coming from multiple sources. This makes it possible to identify where the need for pollution prevent, pollution control, or environmental remediation is the greatest. These same tools can be used to determine where the need for action is greatest to protect natural resources, i.e., to identify those areas/cases where a combination of factors are acting to pose a serious threat to those resources.

- Scientific research & development - by providing a frame of reference within which statistical aggregates and differentials can be computed and analyzed.

- Permit issuance- by allowing the identification of specific, heavily affected areas where more stringent permit limits may be needed.

- Corrective action- by providing a geographic framework within which the limits of the area for which corrective action related to a particular

pollutant release can be clearly defined

- Program evaluation and program monitoring- by providing a geographic grid on which data can be displayed and analyzed to determine where specific programs have been effective in limiting ambient levels and human exposures and where they have not been as effective.

- Grants assistance and monitoring- by identifying the areas where action by public or other entities eligible for grants is most needed.

- Communication, outreach, and public access- by providing a geographic framework for communicating environmental conditions and trends and for fostering appropriate public action (e.g., air pollution alerts and advisories are targeted to those specific areas where harmful levels are most likely to be reached).

- Regulatory development- by identifying what kinds of geographic areas are most in need of protection from specific kinds of environmental hazards.

- Non-GIS information collection- by using geospatial base layers and imagery to determine where to collect non-GIS information on both Superfund and RCRA sites as well as using them to design information collection networks in water and air.

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)?

    EPA is a primary player in the Geospatial One-Stop (GOS) effort and participated in crafting the Geospatial One-Stop Business Plan. The EPA Geospatial Information Officer is a member of the GOS Advisory Board and EPA staff manage the Environment and Conservation Channel on the GOS Portal. In addition, EPA is supporting the Geospatial One-Stop effort with both funding and in-kind FTEs in FYs 2002-2005. EPA's contribution to Geospatial One-Stop includes:

	In- Kind FTEs	$(000)	Total
FY 2002	1.85	$320K	$505K
FY 2003	5.10	$160K	$670K
FY 2004	5.10	$160K	$670K
FY 2005	5.10	$160K	$ 670
FY 2006	.50	$150K	220K (FY 06 is Fee for Service)

    EPA is providing in-kind FTEs to ensure the development of common geospatial data standards, which are a key goal of the Geospatial One-Stop. EPA staff

actively participates in a number of FGDC subcommittees that are developing and implementing nationally consistent standards for the framework layers of the National Spatial Data Infrastructure (NSDI). EPA is also involved in related standards-development efforts by the American National Standards Institute (ANSI) and International Committee for Information Technology Standards (INCITS).

To support our work in the Geo One-Stop effort, we have compiled an operational inventory of EPA geospatial holdings and have tracked all FGDC-compliant metadata that are associated with these holdings. The FGDC metadata records will be published on the NSDI Clearinghouse through EPA's registered node, the Environmental Information Management System (EIMS). Additionally, the database architecture for this spatial metadata collection includes a keyword system which supports the 7 FGDC framework categories of base spatial data.

As currently envisioned, EPA's EIMS/Geospatial Data Index in conjunction with EPA Web Geoservices will serve as the EPA node. Contribution to the Geospatial One-Stop effort will allow access to the rich information that EPA produces to address its business needs. These efforts are key to ensuring that EPA's geospatial environmental data and services are made available to a broader audience through the Geospatial One-Stop portal.

EPA staff continue to keep the FGDC Geospatial Applications and Interoperability Work Group, and FirstGov apprised of EPA's eXtensible Markup Language (XML) Web services. The intent is to support Geospatial One-Stop and other E-Gov Initiatives using GML Web Services and to help other agencies, which may be considering the use of XML in their enterprise architectures and information technology services. In addition, EPA's Brand Niemann chairs the XML Web Services Initiative, under the auspices of the CIO Council's Architecture & Infrastructure Committee (co-chaired by EPA's Deb Stouffer). This Subcommittee is providing product-oriented support for implementing XML Web services in the 24 E-Government Initiatives through a set of 15 pilot projects. Four of these directly support Geospatial One-Stop. EPA will continue to be engaged in FGDC and Geospatial One-Stop discussions to ensure that the Agency's efforts complement and are compatible with broader federal agency geospatial initiatives.

The Geospatial One-Stop Portal links directly to the EPA EnviroMapper Tool

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. Incorporating geospatial data and technology into mainstream business and IT management will enhance the value and usability of the wide array of data available to EPA staff and partners for environmental planning, analysis, and decision support. The EPA will transition to a technical environment where geo-

referenced ambient monitoring and program data will jointly reside in integrated relational database systems with geospatial data and imagery. In conjunction with the increased availability of Web-based geo-data and geo-application services, this will allow staff to insert geospatial tools into their operational tools (e.g. models), increasing their ability to undertake analyses not possible before. For example, using a locational framework enables a manager to use significant ecological and other high-risk areas as an underpinning for making environmental decisions. Increased access to and use of remote sensing will dramatically change the way the EPA does business by presenting a cost-effective, holistic view of the environment and allowing staff to non-intrusively gather intelligence. In addition, a wider use of geospatial data and technology will expedite the EPA's transition to E-Government and facilitate meeting homeland security and emergency response requirements.

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?

    Where base geospatial coverages exist, the geospatial program, is working to acquire that data directly from the source so no duplication of effort occurs. The goal is for EPA applications to be able to directly obtain geospatial data from the master files of other organizations as a Web/Internet geo-service. For example, we are working with USGS to identify how to best implement access to the National Elevation Data set, the National Land Cover Data Set, and the National Watershed Boundary Data Set. We are coordinating with State and local groups to help establish geo-data services that make data accessible via tools such as Window-To-My-Environment (WME). The WME application involves re-engineering of data exchange between federal and state partners to incorporate XML data streaming capabilities that bring additional data resources and services into the mapping interface and provides responses to environmental queries. These exchanges will be governed by model trading partner agreements. Currently WME can access data from hundreds of state and local organizations. From the geo-referencing vantage point, we will be working with states on the CDX registration processes to ensure that when there are Latitude/Longitude values associated with a regulated entity that they are included on the trading exchange template.

    The EPA regions invest a small amount of resources in data partnerships (less than $200,000 per year for all 10 regions). This is predominately in support of State Implementation Team efforts to develop and update statewide geospatial base layers. Many EPA regions and states have informal geospatial data exchange agreements to minimize duplicative data development and acquisition.

    EPA supports key multi-agency geospatial data production projects such as the National Land Cover Database, the National Hydrography Database, and the National Watershed Boundary Database. Although data sharing and integration are key components of these efforts we do not specifically have formal agreements or MOU's specifically about data sharing and integration.

Over the last three years, EPA has managed a grant program that supports the deployment of a new Exchange Network between EPA and its state and tribal agency partners. State and tribal agencies participating in the EPA's Exchange Network Grant program must specifically describe their intention to share data through the establishment of formal trading partner agreements. These states may exchange data between each other, or through EPA's Central Data Exchange to an EPA program system. Nearly all States and over one dozen tribes have received support through the Exchange Network. The grants have included geospatial aspects and in FY 2005 there are several pilot projects between EPA and states aimed at improving the exchange and sharing of geospatial data.

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.

    FGDC needs to promote and support easy mechanisms for developing metadata development at the time the data are collected (e.g. ARC catalogue) and let developers know that these tools exist. The large number of elements required to meet FGDC metadata requirements increase the level of effort and commitment necessary to comply with the requirement

Attachment 1
EPA Participation on FGDC Committees

I. Steering Committee

II. Coordination Group

III. Subcommittees:

   A. Federal Geodetic Control Subcommittee & GPS Interagency Advisory Council and its Fixed Reference Station Working Group

   B. Marine & Costal Spatial Data

   C. Spatial Water Data and its Guidelines Work Group and National Hydrography Framework Standards Work Group

IV. Working Groups:

   A. Earth Cover

   B. Facilities

   C. Geospatial Applications & Interoperability

D. Homeland Security
   1. Public Access Subgroup

E. Standards
   1. Data Standards Working Group
   2. Future Directions Working Group

F. Tribal

V. Task Forces

A. Civil Imagery and Remote Sensing Task Force