

National Geospatial Advisory Committee

Interagency Data Sharing – A Primer

One of the challenges of the geospatial community is to foster data sharing and collaboration among multiple agencies and organizations, across multiple levels of public, private and not-for-profit entities. Successful interagency data sharing and collaboration is based on adopting guiding principles, identifying best practices and recognizing the challenges, which may include policy issues, scientific issues and technological issues.

Adopt Guiding Principles for Data Sharing

Several principles apply to data sharing within all levels of government (Federal, state, regional, tribal, local), between levels of government, and between government and the private sector. These principles include:

- **Make it easy to participate.** Make information accessible to all levels of users. Make it easy to contribute via a simple, unified workflow. Recognize users need information, not just data.
- **Use an enterprise approach.** Look at “data sharing” systemically rather than individually. Data sharing should serve multiple objectives when possible to reduce redundancy.
- **Encourage interagency cooperation to facilitate public-private coordination.** Strive to improve cooperation and coordination to facilitate public-private coordination vertically and cross-sector. Consider give-get propositions and cost sharing opportunities to minimize financial impacts.
- **Create a shared knowledge environment.** Identify the most important data sources and build an environment, workflow and funding mechanisms to sustain data creation, maintenance and sharing.
- **Foster and maintain a community of interest approach.** Prioritize and target audiences with common interests and grow relationships within that community.
- **Document and Articulate Benefits/ROI.** As data are repurposed through sharing arrangements, document and communicate the value or return on investment to help ensure continued data sharing efforts.

Identify Best Practices and Enablers

Develop data sharing partnerships using best practices from successful programs. Actual experience has identified frameworks or pre-conditions that allow data sharing to proceed more easily. Key enablers include:

- **Identify standards to access, share and integrate data.** Identify and agree on common geospatial service and data transfer standards/formats to minimize costs and facilitate sharing.
- **Establish an organizational structure.** Develop a data-sharing architecture based on standards and consistent input methodologies. Standardization should include common vocabulary, metadata and templates for all uses, including data, reports and applications.
- **Focus on outcomes, not just access.**
- **Manage costs.** Design the process to be fast and cheap. When possible, enable state, regional, tribal and local entities ride (“piggy-back on”) federal data acquisition contracts to save money.
- **Agreements should be open-ended whenever possible.** Use Memorandums of Understanding (MOU) or other formal agreements to define bilateral or multilateral agreements, as required by local circumstances, policies or regulations.
- **Establish data sharing agreements.** Agreements must honor and document the data-centric rights and restrictions set forth by the authoring agency. Depending on the agreement for sharing, this may also include Service Level Agreements.
- **Minimize restrictions on data, consistent with proprietary and other interests.** Launch and maintain a website to promote access, provide tools and link to data and information.
- **Recognize the power of courtesy, professionalism, understanding and acceptance in building strong working relationships.**

Recognize the Challenges to Interagency Data Sharing

There are myriad benefits to data sharing but also challenges that must be recognized and addressed. It is critical to recognize, explicitly, the key concerns of all parties and work to resolve those concerns. Challenges include:

- **Mission specific data.** Critical information is mission specific to partners. Agency policy issues may be barriers to data sharing. Identify and define “communities of purpose” to clarify and confirm the data needed and structure a data sharing MOU template relative to each “community of purpose.”

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- **Security.** Find innovative ways to secure data and identities, and establish appropriate protocols. Address issues of access to data, by data type, while ensuring certain data security and system availability. In a larger context, the question of cyber security must be addressed as more data are shared via the Internet.
- **Privacy protection.** Address 4th Amendment and Posse Comitatus Act (18 U.S.C. § 1385) confidentiality and privacy issues as well as intellectual property and legislative compliance in government data sharing arrangements. Invoke the Protected Critical Infrastructure Information (PCII) Program legislation as appropriate. Additional issues related to privacy may result from the integration of multiple data sources.
- **Use of the data.** Determine how data will be used to assess fitness for purpose, that is, timeliness, completeness, and accuracy, for a particular mission. Address concerns related to indemnification and liability with appropriate legal agreements. Confirm requestor and provider concurrence.
- **Value of the data.** Determine specifically “what” data, from public and private sources, are of value, how to maintain the value, as well as a pricing model for data access that addresses the value proposition.
- **Policy.** Evaluate policy and legislative changes at all appropriate levels of government that may be needed to support data sharing arrangements.
- **Unclear requirements and expectations for participation.** Define and clarify the expectations and requirements for data sharing. Once an agency opts in, what are the options to opt out?
- **Licensing.** Increasingly data are acquired by government agencies under license agreements that carry restrictions for redistribution. Define a model for sharing data acquired under license that clearly specifies and honors all relevant license terms.
- **Data sharing vs. data giving.** Avoid unilateral data transfer arrangements. Many unsuccessful data sharing relationships fail when one entity wants another to give them their data, with no consideration for the long term or the ‘giving’ agency’s needs. Identify ways to achieve mutual benefit.
- **Duplicative efforts.** Coordinate data sharing efforts between and within agencies. Identify and eliminate duplicative efforts or consortia established for the purpose of data sharing to minimize redundancy in storage costs and data calls and to remove concerns about data integrity and primacy.

Determine a Path Forward

Consider using some of the strategies that are working for current geospatial data sharing initiatives.

- Set up pilot programs or experiments designed to break down barriers then prototype.
- Create small communities of interest (COI) for a prototype or pilot. Then match users one at a time based on a common issue or interest.
- Employ a transitional build. Focus on a “build a little, test a little, and learn a lot” approach.
- Identify and acknowledge legal or other constraints on data creators and providers.
- Ensure the most current and accurate data are available. Identifying data stewards is a valuable first step.
- Develop an outreach and communication strategy to potential user communities.
- Provide use cases to help understand the concept and benefits.
- Communicate the power of data sharing. Develop the community of sharing.

Successful Data Sharing Initiatives – A Selected List

- Multi-Agency Collaboration Environment (MACE) (<https://sharepoint.macefusion.com/Pages/About.aspx>)
- The Homeland Infrastructure Foundation-Level Data (HIFLD) Working Group (www.hifldwg.org)
- Digital Coast Initiative (www.csc.noaa.gov/digitalcoast)
- Geospatially Enabling Community Collaboration (GECCo) (www.gita.org/ciper/gecco.asp)
- Southwest Florida Water Management District (www.swfwmd.state.fl.us)
- Federal Geographic Data Committee (www.fgdc.gov)

Additional Resources

- *Licensing Geographic Data and Services (2004)* (www.nap.edu/catalog.php?record_id=11079)
- *NSDI Partnership Programs: Rethinking the Focus (2001)* (www.nap.edu/catalog.php?record_id=10241)
- *Promoting the NSDI Through Partnerships (1994)* (www.nap.edu/catalog.php?record_id=4895)