MetroGIS Geospatial Data Collaborative:

Overview of Functions and Benefits

MetroGIS Policy Board Briefing
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2002 Recipient of URISA's Exemplary Systems in Government (ESIG) Award

Today's Focus

- **Reasons MetroGIS Was Established**
- **Vision & Guiding Principals**
- **Stakeholder Community**
- **How Organized**
- **Priority Functions / Services**
- **Results and Benefits**
- **Funding and Resources**

The Situation in 1994:
Factors Leading to MetroGIS Initiative

- **Similar data needs were being met independently.**
- **Significant differences in data access policies and procedures.**
- **Few data standards existed and data documentation was rare.**
- **No effective way to locate existing data produced by others.**
- **Significant reduction in start-up costs resulting many new investments in GIS technology.**
- **Metropolitan Council recognized a need for parcel data produced by the seven counties**

MetroGIS's Ultimate Goal

Sustain GIS collaboration among and between government interests which serve the Minneapolis - St. Paul Metropolitan Area to measurably improve their effectiveness in achieving livable community goals, enhancing the quality of life of their residents, and improving their economic competitiveness.

www.metrogis.org

The Vision

The MetroGIS vision emerged from a 1995 strategic planning retreat by a representative cross-section of GIS practitioners within the metropolitan region.

"Provide an ongoing, stakeholder governed, metro-wide mechanism through which participants easily and equitably share geographically referenced data that are accurate, current, secure, of common benefit and readily usable."

Who is Involved?

MetroGIS is a "community" initiative representing a broad base of stakeholder interests serving the Metro Area:

Core

- **Cities**
- **Counties**
- **Regional gov't**
- **School districts**
- **Watershed districts**

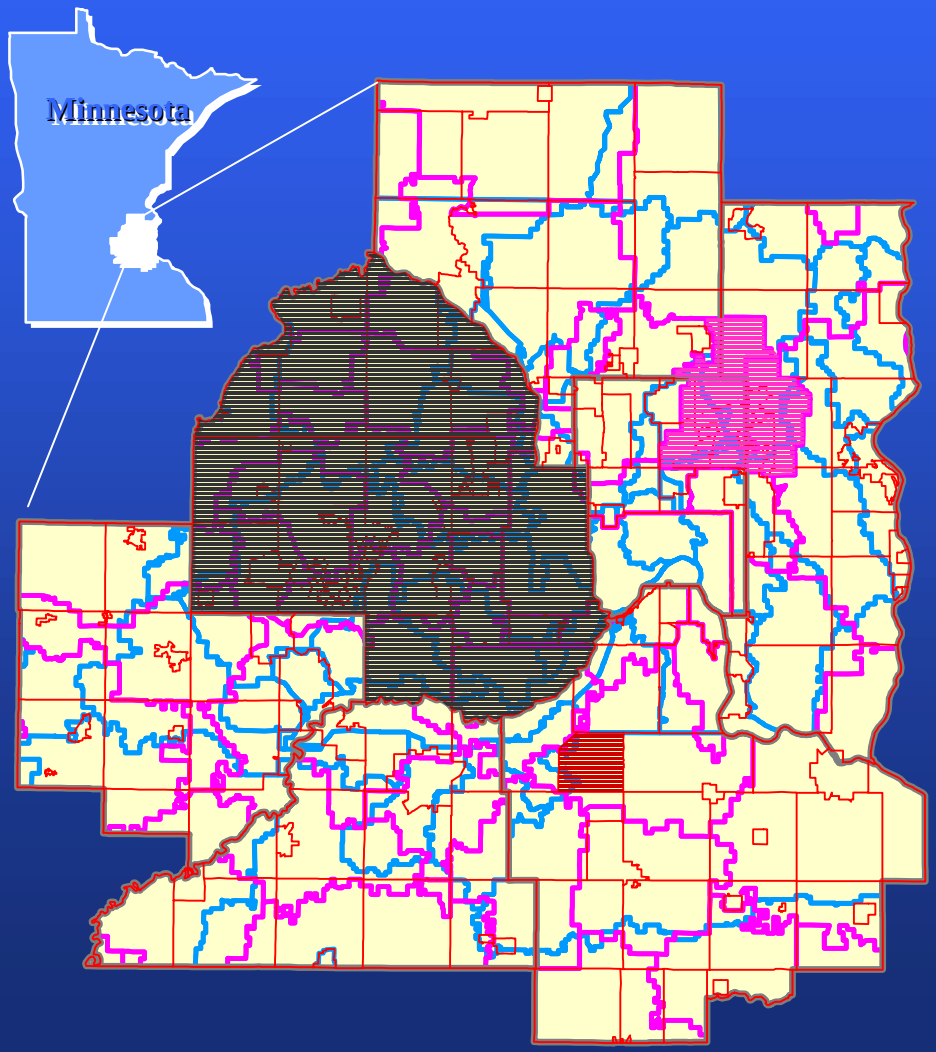
Influencing

- **Academic institutions**
- **State government**
- **Federal government**
- **Nonprofit organizations**
- **Private sector**

Twin Cities Metro Area

Complexity of Relationships

- 3000 square miles
- 900,000+ parcels
- 300 local units of government



- Metropolitan Area
- 7 Counties
- 188 Minor Civil Divisions
- 59 School Districts
- 39 Watershed Management Organizations

How is MetroGIS Organized?

MetroGIS has been built from the middle out, starting with a Coordinating Committee, adding advisory teams and, finally, forming a Policy Board

Priority Functions/Services

Eighteen functions have been identified as priorities for MetroGIS support. The top 3 priorities are:

- **Support a "forum" to foster coordination through knowledge sharing and use of best practices.**
- **Facilitate effective long-term solutions to priority common information needs - *regional datasets.***
- **Support an efficient mechanism for Internet-based data discovery and retrieval - *DataFinder.***

Guiding Maxims

- **Build once, share many times (data and applications).**
- **Investments made by one government interest ought to be leverageable by other government interests.**
- **All relevant and affected interests, dominated by none.**
- **Widespread sharing of the data improves data quality and ultimately decision support.**
- **Cost recovery of data development expenses stifles sharing of commonly needed data.**
- **Participation in related state and national initiatives results in valuable knowledge sharing and partnership opportunities.**

Key Guiding Principles

- **Secure broad support for vision and policies**
  - *engage knowledgeable and respected participants*
- **Active involvement of elected officials**
  – *public policy reality check*
- **Part of something bigger**
  - *engage in related state and national efforts*
- **Roles and responsibilities for the community performed by willing stakeholders with an acknowledged internal business need and adequate capacity.**
- **Focus on priority common business information needs**
- **Source data not changed when assembled into regional solutions**
- **Funding is not the only way to contribute - data, equipment and people are also valuable assets.**

Regional Data Solutions

MetroGIS created a process to collaboratively institute regional solutions to common information needs.

***Now available*:**

1. Census geography (1990 & 2000)
2. Land cover
3. MCD/county jurisdictional boundaries
4. Parcels
5. Planned land use
6. Street centerlines and address ranges

***In progress*:**

1. Existing land use
2. Highway and road networks
3. Lakes, wetlands, rivers
4. School and watershed district jurisdictional boundaries
5. Socioeconomic characteristics of areas
6. Emergency preparedness - *other than above*

Regional Data Solutions

Benefits of MetroGIS's approach...

- **Regional "endorsed" solutions work together - interoperable**
  saves substantial time and effort for data set up prior to use
- **Standardized capture and reporting of endorsed data permits easy apples-to-apples comparisons region-wide**
- **Builds trust in the data as the go-to source and over time higher quality data at less cost is the result**
- **Use of "endorsed" data focuses debate on issues and not competing data sources**
- **Cost for enhancements important to the community are shared**

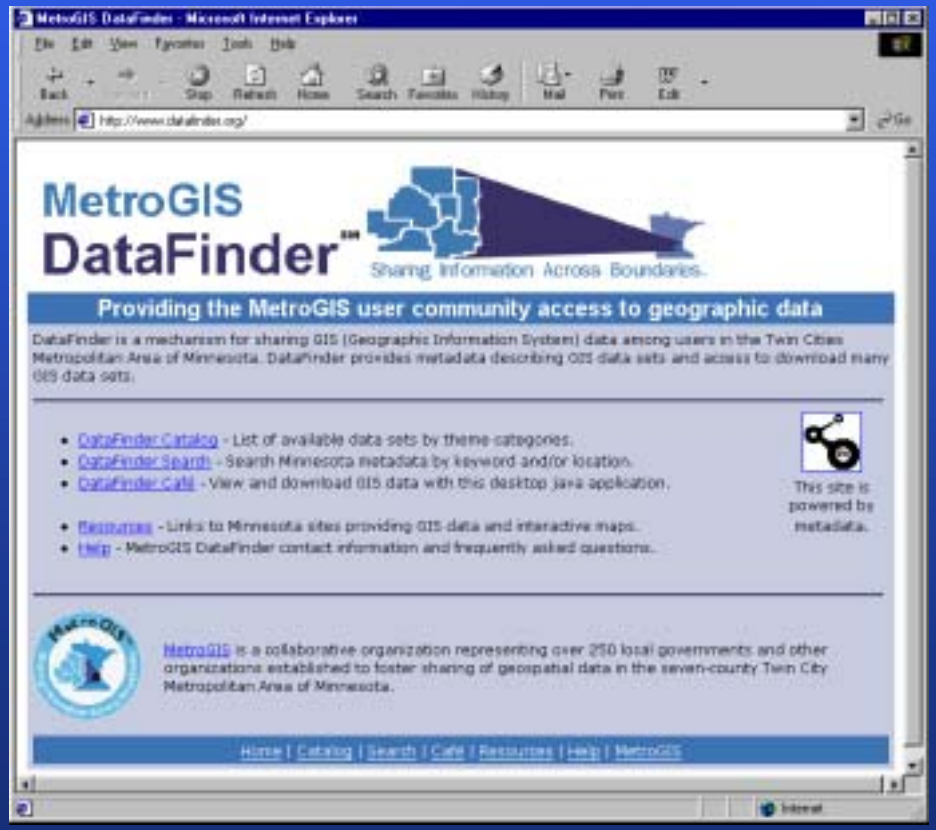
DataFinder:
Internet Data Discovery and Retrieval Tool

Suite of Functions

DataFinder Catalog
Metadata grouped by the 19 ISO Data Theme Categories

DataFinder Search
Node of National GeoSpatial Data Clearinghouse

DataFinder Café
Bundles & downloads selected data for specified geographic extent, in multiple formats



-Over 2500 downloads/month
-116 data files available

(*www.datafinder.org*)

MetroGIS Results

Significant progress has been made to achieve functions desired of MetroGIS by its stakeholder community:

- **Implemented 8 regional data solutions to priority common information needs of the MetroGIS community**
- **DataFinder is a state-of-the-art node of the National GeoSpatial Data Clearinghouse**
- **Data sharing has become the norm**
  DataFinder experiencing over 2500 data downloads/month
- **Special projects have greatly improved data quality and ease of access to commonly needed data**
- **Catalyst for related geodata activity beyond the Metro Area**

Benefits to All Stakeholders

MetroGIS has implemented a Performance Measures program to measure progress toward its goals and document benefits. Some examples:

- **Improved decision support**
- **Less redundancy in data development**
- **Improved efficiencies to locate, access, and prepare data produced by others for use.**
- **Improved attitude about sharing and more sharing.**
- **Increased sharing of knowledge and partnering**
- **Improved data distribution efficiencies for producers.**

See http://www.metrogis.org/benefits/testimonials/index.shtml for stakeholder testimonials to the benefits of MetroGIS

Funding and Resources

*The Metropolitan Council is MetroGIS's primary sponsor with an annual investment in dedicated **staff** and **operating funds** as follows to foster collaboration:*

	2001	**2002**	**2003**
Staff (3 FTE)	$213,000	$207,000	$200,000
Operating	190,000	165,000	100,250
Total	**$403,000**	**$382,000**	**$313,250**

Notwithstanding the Council's significant investment, MetroGIS's accomplishments would not be possible without the significant data and human resources contributed by numerous other stakeholder organizations.

For More Information

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***MetroGIS General Website*: www.metrogis.org**

MetroGIS

Cooperation, Coordination, Sharing Geographic Data

SUMMARY STATEMENT

Introduction

MetroGIS is an award-winning, regional geographic information systems initiative. Its core stakeholders are the over 300 local and regional government organizations that serve the seven county Minneapolis-St. Paul Metropolitan Area, with partners in state and federal government, academic institutions, nonprofit organizations and businesses. Through MetroGIS's efforts, regional solutions to common geospatial program needs are identified and resources are leveraged to implement widely supported solutions, which promote and facilitate widespread sharing of geospatial data.

Mission

The mission statement for MetroGIS is "to provide an ongoing, stakeholder-governed, metro-wide mechanism through which participants easily and equitably share geographically referenced data that are accurate, current, secure, of common benefit and readily usable". The desired outcomes of MetroGIS's efforts include:

- Improved participant operations
- Reduced costs
- Improved support of cross-jurisdictional decision-making

Through these outcomes, the ultimate goal of the MetroGIS initiative is to sustain GIS collaboration with within the Minneapolis - St. Paul Metropolitan Area to measurably improve effectiveness in achieving livable community goals, enhance the quality of life of the area's residents, and improve the region's economic competitiveness.

Major Functions

- Support a "forum" to foster coordination through knowledge sharing and use of best practices.
- Facilitate effective long-term solutions to priority common information needs - *regional datasets.*
- Support an efficient mechanism for Internet-based data discovery and retrieval - *MetroGIS DataFinder.*

Distinguishing Characteristics

- Forum to foster collaboration on a breadth of common geospatial program needs - *more than just data.*
- Unincorporated organization - *no mandate or legal standing.*
- Can not own data, receive, or spend funds- *rely on stakeholders.*
- Elected officials comprise the Policy Board - *unprecedented.*
- Consensus-based decisions on matters fundamental to success.
- Voluntary compliance with endorsed policies/procedures.
- Refining and testing the NSDI Area Integrator concept.

For more information:

- MetroGIS Staff Coordinator:
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- General email contact: metrogis_contacts@metc.state.mn.us
- General information website: www.metrogis.org
- MetroGIS DataFinder (Node of National Geospatial Data Clearinghouse): www.datafinder.org

MetroGIS
Roles and Responsibilities
Balance Sheet

Function Performed	Custodian / Steward [1] [2] *Accepted Role On behalf of the Community*	
1. General Collaboration and Coordination *Staffing and funding to support forums and workgroups to define common needs and collaborative solutions, perform satisfaction monitoring, foster use of endorsed best practices, fund partnership agreements, support decision-making processes, etc*	Metropolitan Council	
2. MetroGIS DataFinder *Staffing and funding to support Internet-Based Tool for Search and Discovery of Commonly Needed Geospatial Data for MetroGIS community*	Metropolitan Council	
3. Regional Data Solutions *Staffing and funding to develop, maintain, and document Regional Data Solutions to Priority Common Information Needs as of July 2003:*	**Primary Producer**	**Regional Producer/Aggegator**
a. Addressable Street Centerlines	The Metropolitan Council via a contract with The Lawrence Group (TLG)	Metropolitan Council
b. Census Geography (aligned with parcel and street centerlines) 1990 and 2000 Datasets	The Metropolitan Council via a contract with The Lawrence Group (TLG)	Metropolitan Council
c. Jurisdictional Boundaries (aligned with parcels and street centerlines *Cities and counties* *School districts (policy pending)* *Watershed Districts (policy pending)*	Counties	Metropolitan Council
d. Land Cover	20+ diverse government, academic, and private sector entities	Mn DNR
e. Parcels	Counties	Metropolitan Council
f. Planned Land Use	Cities	Metropolitan Council
(Custodial Policies Pending) **Emergency Management** **Existing Land Use** **Highway and Road Networks** **Hydrology - Lakes and Wetlands** **Land Regulations** **Rights to Property** **Socioeconomic Characteristics of Areas**		

[1] For links to the listings of specific roles and responsibilities for each endorsed regional dataset go to www.metrogis.org/data/index.shtml.

[2] Since 1997, the seven counties have agreed to share their parcel data with other government and academic entities that serve the Metro Area as a component of Data Sharing Agreements executed with the Metropolitan Council. For more information see www.metrogis.org/about/history/sharing.sh

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MetroGIS Endorsed Regional Datasets

Introduction

A central focus of MetroGIS's work is to identify common information needs of its stakeholder community who serve the Minneapolis/St. Paul Metropolitan Area and facilitate long-term support of regional solutions to meet these common information needs. Elements of the National Spatial Data Infrastructure (NDSI) vision[1], such as the area integrator, framework themes, framework functions, and skylines concepts, are embedded in the philosophy that underlies MetroGIS's "endorsed" regional solutions.

What is Meant by "Endorsed"?

The MetroGIS Policy Board provides a political "reality check" when it endorses desired specifications for geospatial data commonly needed by the MetroGIS data-user community at the conclusion of a broadly participatory and replicable process. These commonly needed data are referred to as "regional data". Another component of the Policy Board's endorsement action involves roles and responsibilities for primary and regional custodians of these data and any related agreements with specified organizations to carry out the desired tasks. In addition, endorsement of a regional dataset involves guidelines for access, content, and distribution of the dataset. For more information about MetroGIS's regional datasets, please see http://www.metrogis.org/data/index.shtml.

What Endorsed Regional Data Solutions Are Currently Available? (as of May 2003)

- 1990 Census Boundaries
- 2000 Census Boundaries
- Addressable Street Centerlines
- County/Minor Civil Division (MCD) Boundaries
- Land Cover
- Parcels
- Planned Land Use

What are the Benefits of Regional Data Solutions?

- Regional endorsed solutions work together. Their interoperability saves substantial time and effort for setup prior to use.
- Standardized capture and reporting of endorsed data permits easy "apples-to-apples" comparisons regionwide.
- Builds trust in the data as the go-to source and over time higher quality data at less cost is the result.
- Use of endorsed data focuses debate on issues and not competing data sources.
- Leverage resources or share costs of enhancements to data which are important to the community.
- Accessible free via Internet for as many solutions as possible.

For more information see http://www.metrogis.org/data/about/index.shtml

[1] A comprehensive explanation of the National Spatial Data Infrastructure (NSDI) is provided in the NSDI Framework Handbook, which can be viewed at http://www.fgdc.gov/framework/frameworkintroguide.

MetroGIS Data Standards/Guidelines and Best Practices

To Improve Ease of Sharing Commonly Needed Data

Introduction

The MetroGIS Policy Board has endorsed the following GIS-related data standards and guidelines and encourages the MetroGIS community to incorporate them into their daily GIS procedures as "best practices" so that commonly produced data, by multiple interests, can be more easily shared.

The following pages contain descriptions of each best practice listed below, including information about when it was adopted or endorsed, where to obtain related information, and a contact person. These best practices are in addition to standards and guidelines that may be included in each specific data theme adopted by MetroGIS (listed in a companion summary document).

Best Practices

- Thematic Data Categories
- Metadata Guidelines
- Metro-Wide Coordinate System
- National Standard for Spatial Data Accuracy (NSSDA)

Data Content Standards

- Address Guidelines and Issues for Working with Address Data
- County and Minor Civil Division Coding Exchange Standards
- Minnesota Land Cover Classification System (MLCCS)
- Regional Planned Land Use Coding Scheme and Dataset
- Unique Parcel ID Guidelines

MetroGIS DataFinder℠

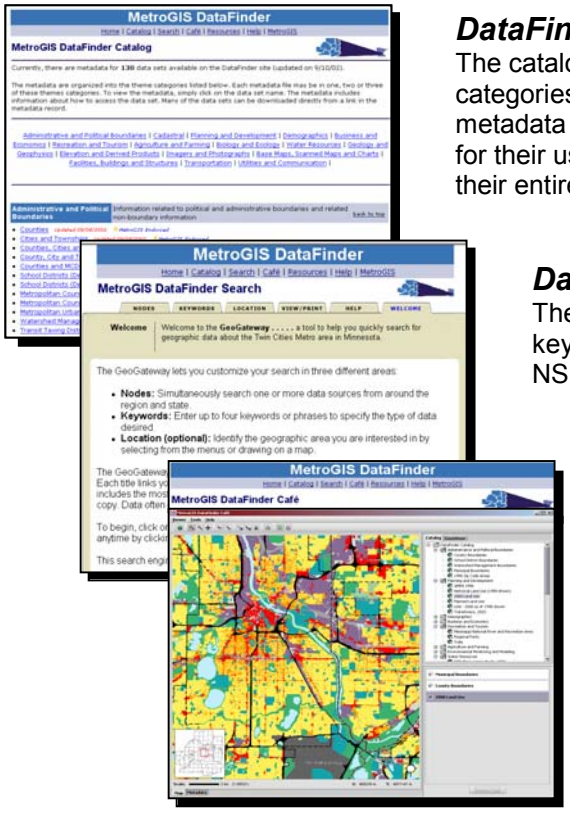
Sharing Information Across Boundaries.

http://www.datafinder.org

DataFinder is a website designed primarily to expedite sharing of GIS data among local and regional government organizations that serve the Minneapolis-St. Paul Metropolitan Area (Twin Cities) of Minnesota. The website has a suite of tools specifically designed for discovering and downloading geographic data.

- DataFinder is available as a data discovery and distribution option for any organization that produces GIS data pertaining to the Twin Cities and wishes to share it with others.
- Metadata are provided in FGDC-compatible format. DataFinder is a National Spatial Data Infrastructure (NSDI) Clearinghouse node, so metadata are searchable via any affiliated Clearinghouse search engine.
- DataFinder uses Minnesota Geospatial Data Theme Categories based on ISO 95115 (official state, federal and international categories).
- Data are downloadable via FTP or by creating custom bundles using DataFinder Café.
- MetroGIS-endorsed regional data solutions are quickly identifiable.
- Map services are available for direct use of data in GIS software or web applications. DataFinder offers OGC-compliant Web Mapping Services (WMS) and ArcIMS map services. By using map services, the most recent data available on DataFinder can be accessed without having to download, maintain and store the data on a local system.

Website Features



DataFinder Catalog

The catalog provides a list of available datasets by theme categories. Each item in the catalog links to a standardized metadata record that allows the user to evaluate the dataset for their use. Many of the datasets can be downloaded in their entirety via an FTP link in the metadata record.

DataFinder Search

The search tool allows a search of metadata by keyword and/or location. DataFinder is a registered NSDI Clearinghouse node.

DataFinder Café

The Café enables users to browse GIS data and interactively clip datasets to user-defined areas for download. Users may download the data in one of several common GIS data formats offered by Café.