

# GLOSSARY

Each of the following definitions is offered in an attempt to provide a common understanding of terminology important to MetroGIS's efforts.

**Application:** a term used to describe a mechanism for creating information from data. By one definition, an application is a "program or web mapping service designed to perform a specific function directly for the user." Applications are also referred to as "software". Examples include word processing software, database programs, and mapping tools.

Combination of computer software (e.g., web services, computer program, or script) used to query, combine, analyze, and/or print visualizations of geospatial data to address a particular business information need.

A computer program used for a specific task or purpose, such as accounting or land use planning.

The use of GIS technology to solve problems, automate tasks, and/or generate information within a specific field of interest. For example, a common agricultural application of GIS is determining fertilization requirements based upon maps of soil chemistry and previous crop yields.

**Best Practice or Best Management Practice:** A recognized reference or method related to developing, documenting, managing, sharing, distributing or utilizing geographic data or applications which promotes consistency among the producers and increased interoperability of the data among the users. A reflection of what the community has learned about what works.

**Broker:** A Broker utilizes a structured catalog to act as a searchable registry of datasets or services, providing information about resource availability and access instructions. Using a simple browser interface, consumers query the broker, find datasets or services and then directly interact with the resource providers. Conceptually, this is similar to conducting a Google search, then linking to the information of interest. The broker function facilitates enforcement of requisite standards and protocols, as well as possibly providing authentication (security) services. The FGDC Clearinghouse and Geospatial One-Stop (GOS) sites provide examples of some Broker capabilities. The Clearinghouse provides a single point of contact regarding available resources while maintaining statistics on clearinghouse node availability. GOS tests metadata documents for standards compliance as part of its metadata harvesting function. (Source: *Minnesota state GIS enterprise conceptual architecture design*"; Minnesota Governor's Council on Geographic Information white paper; March 23, 2005; <http://www.gis.state.mn.us/pdf/MNGISConceptualArchitectureDesign.pdf> ; definition extracted from pp 4, 5 & 11.

**Business Information Need:** Information needed to accomplish a business task that is a derivative of geospatial data. (I need to know the owner of a parcel of property and

how to contact them, I need to know which community a particular property is located within, I need to know the drainage outlet for a particular wetland.)

**Catalog:** A Catalog is a collection of Catalog Entries that is organized to assist in the discovery and retrieval of datasets or services, which are of interest to the user. (Source: “*The OpenGIS Abstract Specification; Topic 13: Catalog Services; version 4*”; Open GIS Consortium; 1999; <http://www.opengeospatial.org/standards/as> ; p8)

**Catalog Entry:** Describes or summarizes the contents of a set of geospatial data or a service, and is designed to be queried. A Catalog Entry is usually a subset of the complete metadata for the described geospatial dataset or service. (Source: “*The OpenGIS Abstract Specification; Topic 13: Catalog Services; version 4*”; Open GIS Consortium; 1999; <http://www.opengeospatial.org/standards/as> ; p8)

**Consensus:** The preferred means of decision-making by MetroGIS. Consensus is attained when all parties are either in favor of or can tolerate particular outcomes of a decision.

**DataFinder:** DataFinder is a one-stop-shop for discovering geospatial data pertaining to the seven county Twin Cities metropolitan area. Its primary function is to facilitate sharing of GIS (Geographic Information System) data among organizations serving the Twin Cities metropolitan area of Minnesota. DataFinder provides metadata describing GIS data sets, many of which can be directly downloaded or used via map services.

**DataFinder Café:** The DataFinder Café is an interactive tool for viewing and downloading GIS datasets. It allows users to download datasets by custom geographic extents or selections. The Café also allows users to browse GIS datasets, print maps, and save mapping sessions for later use or for sharing with others.

**Data standard:** A statement of what data should be recorded, how data should be recorded, and how data should be supported by a system in order to retain its full meaning. A data standard should enable consistency and predictability in recording of data; and facilitate its interoperability and use. (Adapted from <http://www.willpowerinfo.myby.co.uk/cidoc/guide/guideglo.htm>.)

A well defined set of properties or specifications for measuring acceptability, quality or accuracy for a specific type of data which is accepted as correct by custom, consent, or authority that facilitates the creation, use, or dissemination of such data. (Adopted from Black’s Law Dictionary)

**Endorsed regional solution:** The MetroGIS Policy Board endorses desired specifications for geospatial data needed commonly by the MetroGIS data-user community, following a broadly participatory and replicable process. These commonly needed data are referred to as "regional data". The Policy Board also endorses roles and responsibilities for primary and regional custodians of these data and seeks out 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. (Source: <http://www.metrogis.org/data/index.shtml>.)

**Geocoding (also known as Geo Referencing):** Geocoding refers to the assignment of real world coordinates to geographically reference data using an appropriate Geographic dataset.

Examples: Geocode a street address: Take an address, such as 123 Main Street and compare it to a GIS street dataset. In this scenario, the resulting point (x,y) will be interpolated along a street segment with the name "Main" and with a range of addresses such as 100-200.

**Geocoding service:** A service (normally provided via the web, or as a desktop application) on that allows the user to geocoding.

**Geographic Data** (also known as geospatial data): This type of data has two major components: spatial and attribute. The spatial component ("feature") can be a point (fire hydrants), line (street centerlines) or polygon (parcels). All have a location in the form of map (X, Y, and sometimes Z) coordinates. The attributes of a spatial "feature" describe the feature (fire hydrant – diameter of pipe), street center (functional class of the road), and parcels (name of the property owner).

**GeoWeb:** The Geospatial Web or **GeoWeb** is a merging of geographical information with the Internet. This merger is creating an environment where searches can be based on location as well as [keywords](#). (i.e. "What is located here?")

The GeoWeb is currently characterized primarily by geo-browsers such as [Google Earth](#), [NASA World Wind](#), [Google Maps](#), [Windows Live Local](#) and [Yahoo Maps](#). Geo-browsers have been major a factor in raising awareness of the importance of geography and location as a means to index information. The impact of the GeoWeb will likely be similar to Google Search and have similar impact on the organization and function of the Internet. (Source: Adapted from Wikipedia.)

**Geographic Information System (GIS) Technology:** A GIS is a computerized database management system for the capture, storage, retrieval, analysis, and display of data defined by location.

**Infrastructure:** The word infrastructure is used to promote the concept of a reliable, supporting environment, analogous to a road or telecommunications network. Spatial data infrastructures facilitate access to geographically-related information using a minimum set of standard practices, protocols, and specifications. Spatial data infrastructures are commonly delivered electronically via the internet. (Source: Australian Spatial Data Infrastructure at <http://www.anzlic.org.au/infrastructure.html>.)

**Interoperability:** Capability to communicate, execute programs, or transfer data among various functional units in a manner that requires the user to have little or no knowledge of the unique characteristics of those units ISO 2382-1. "The ability for a system or

components of a system to provide information portability and interapplication, cooperative process control. Interoperability, in the context of the OpenGIS Specification, is software components operating reciprocally (working with each other) to overcome tedious batch conversion tasks, import/export obstacles, and distributed resource access barriers imposed by heterogeneous processing environments and heterogeneous data." (Source: Open Source Guide, via OGC glossary)

**MetroGIS ([www.metrogis.org](http://www.metrogis.org)):** is an award-winning geospatial collaborative organization serving the Twin Cities metropolitan area in Minnesota, USA. Relying upon voluntary participation, MetroGIS's primary functions focus on fostering: a) development and implementation collaborative regional solutions to shared information needs (geospatial data, related applications, standards and best practices), b) widespread sharing of geospatial data, principally via its DataFinder.org web site, c) the value of geographic information system (GIS) technology as a core business tool, and d) knowledge sharing relevant to the advancement of GIS technology. Beneficiaries of MetroGIS's collaborative efforts include a wide variety of local and regional government interests, as well as, numerous state and federal government, academic institution, nonprofit organization and business interests.

Distinguishing Characteristics include:

- Unincorporated organization - *no mandate or legal standing.*
- Cannot own data, receive, or spend funds- *rely on stakeholders.*
- Elected officials comprise the Policy Board
- Consensus-based decisions on matters fundamental to success.
- Voluntary compliance for endorsed policies/procedures.
- Forum to foster collaboration on a breadth of shared geospatial program needs - *more than just data.*

**Metropolitan area:** Generally, the service area of the Metropolitan Council of the Twin Cities of Minnesota, USA. This area encompasses the seven counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington. Government entities within this area are represented on the MetroGIS Policy Board. Projects to improve data interoperability can involve jurisdictions that adjoin the Twin Cities metropolitan area.

**Metropolitan Council:** The Metropolitan Council is the regional planning organization for the seven-county Twin Cities metropolitan area (Minnesota, USA). It runs the regional bus and light rail system, collects and treats wastewater, manages regional water resources, plans regional parks, and administers funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Council governing body is appointed by and serves at the pleasure of the governor.

**Mn Governor's Council on Geographic Information (GCGI):** Helps coordinate geographic information system activities among all levels of government in Minnesota. The council's 18 members are appointed annually by the Commissioner of the Department of Administration and are drawn from state agencies, federal and local

governments, higher education and the private sector. (Source <http://www.gis.state.mn.us/about.htm>)

**National Spatial Data Infrastructure (NSDI):** The National Spatial Data Infrastructure (NSDI) is defined as the technologies, policies, and people necessary to promote sharing of geospatial data throughout all levels of government, the private and non-profit sectors, and the academic community.

The goal of this Infrastructure is to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with states, counties, cities, tribal nations, academia and the private sector to increase data availability.

(Source: <http://www.fgdc.gov/nsdi/nsdi.html> )

**Open Source Data Model:** A concept offered by the Beyond Government Users Workgroup (Opportunity 2, Appendix I) and patterned after the philosophy that underpins open source software. GIS user communities (both public and private) could cooperatively agree to post all corrections and improvements to feature geographies and attributes in exchange for less restrictive uses for the data, including incorporation of images into web-based applications.

**Open Source Software:** Users are typically granted free access to the latest version of the application code and agree to share improvements they make to the software. The process is self-policing, meaning that a dedicated core of users undertakes a careful review of code changes to ensure that the software remains secure and reliable. The result of this collaboration of users is the very fast and affordable development of high quality technologies and software products.

**Peer Review Forums:** Facilitated group events are which users of a particular regional solution are invited to participate to sharing ideas on how to improve the solution, including but not limited to data content, access and custodial responsibilities. Through these events, MetroGIS identifies ways to ensure that solutions maintain their relevance with changing user needs, and leverage resources not available when the solution was implemented.

**Service Broker: (Also See “Service” and “Broker” and “Service”):** A Broker manages information about datasets and services. Extending the definition then, a Data Broker deals exclusively with datasets (e.g., DataFinder). A fully functional Service Broker must be capable of dealing with both. (Chris Cialek, Mn Land Management Information Center.)

**Services:** Reusable, self-contained collections of executable software components. They may be pieces of software that can play in different operating systems, networks and application frameworks. A service is not bound to a particular program, computer language or implementation. They are the building blocks for creating highly integrated and distributed application systems. (Source: “*The OpenGIS Abstract Specification*;

*Topic 13: Catalog Services; version 4"*; Open GIS Consortium; 1999;  
<http://www.opengeospatial.org/standards/as> ; p9.)

**Shared Business Information Need:** Information needed to carry out the business of more than one organization.

**Software as a Service (SaaS):** SaaS is a software application delivery model that provides solutions (generally commercial) that are explicitly written as Web- or Internet-native applications (i.e., they are developed for Web delivery from the beginning). SaaS applications take advantage of Web technologies (e.g., browsers), are highly scalable, exhibit strong performance, and are regularly updated by the service or application provider. Rather than assuming the high cost for development and owning an application or purchasing a software license, consumers/customers simply pay to use an application through an application programming interface (API) accessible over the Web. SaaS is replacing the Application Service Provider (ASP) term, which most often involved client-server applications that were not net-native.

**Spatial Data Infrastructure (SDI):** Relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. A spatial data infrastructure provides a basis for spatial data discovery, evaluation, download and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and the general public. (Source: Australian Spatial Data Infrastructure at <http://www.anzlic.org.au/infrastructure.html>.)

**Stakeholder:** The term "stakeholder" incorporates several types of existing and potential affiliations with MetroGIS ranging from user of its services (customer) to contributing participant to perspective user and prospective participant.

**Succession Planning:** Development of strategies to accomplish successful transitions in leadership roles critical to MetroGIS's long term success (e.g., committees, staff support, and advocates within critical stakeholder organizations).

**"View-only" Access:** View-only access means data is displayed as a map, graphic or summary table and one or more label fields may be included in the display. A user may print out or save the displayed information. A user is not able to download in part or in its entirety the data set, its features nor attributes used to create the displayed information.

**Web Service:** A software component accessible via the Internet for use in other applications. Web services are built using industry standards such as XML and SOAP and thus are not dependant upon any particular operating system or programming language, allowing access to them through a wide range of applications.

**Web Feature Service (WFS):** A type of Web Service that permits a client (information requestor either manual or computer-to-computer) to request and access, view, edit, combine, analyze, and save locally geospatial as if it were hosted locally.

**Web Mapping Service (WMS):** A type of Web Service that permits a client (information requestor either manual or computer-to-computer) to request and obtain a rendered, projected, cartographically-styled *map image* for use in a computer environment, which can be viewed on its own or in conjunction with other geospatial data. The geospatial data from which the “image” is created by the WMS cannot be edited but it can be combined with other WMS data as well as geospatial data stored locally. In addition, a WMS is a virtual copy of the source geospatial data, meaning that when the client computer is shut off the “image” is no longer available. (Source: OGC)

**Web services:** Web services enable computer systems on any platform to communicate over corporate intranets, extranets, and across the Internet with support for end-to-end security, reliable messaging, distributed transactions, and more...” (Source: Microsoft Developer Network)