Enterprise Geographic & Land Information Systems

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Plans, Policies and Procedures

City of New Berlin, Wisconsin

Enterprise GIS/LIS Plans, Policies and Procedures

PURPOSE
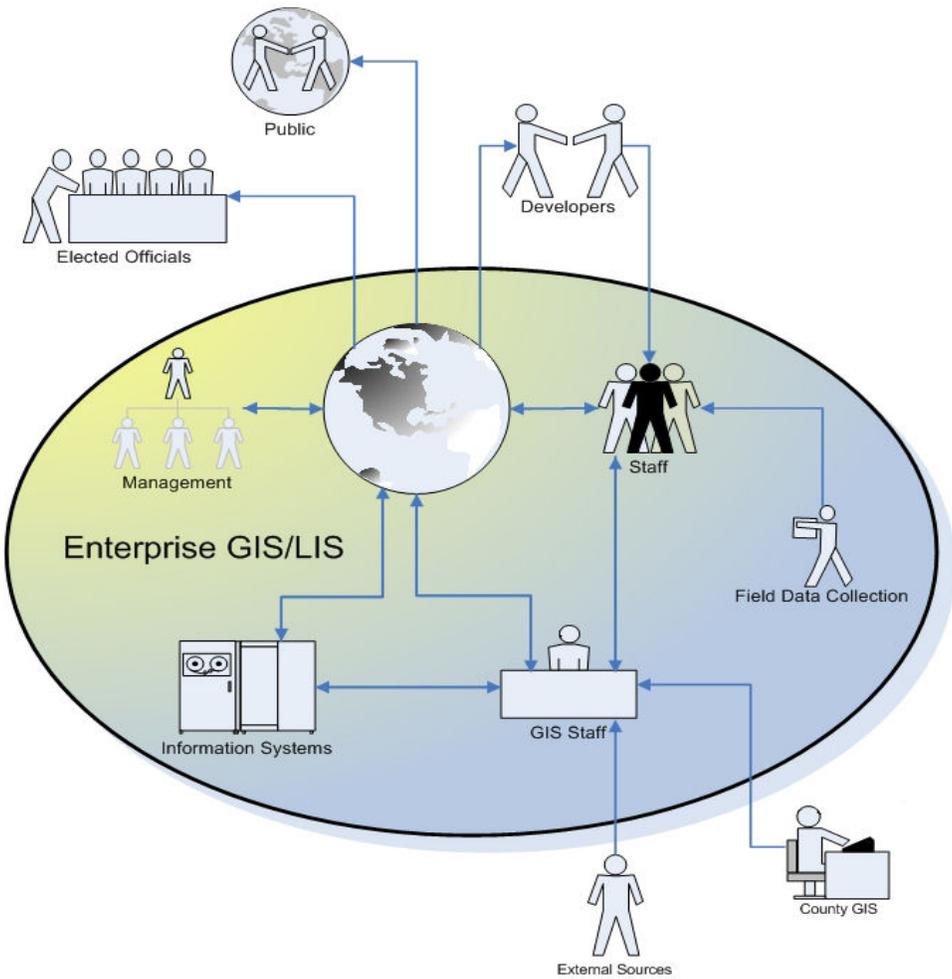
Per state statute section 66.23, the City's Municipal Code and the City's Comprehensive Plan, the Department of Community Development (DCD) and Plan Commission are responsible & required to administer and maintain the City's GIS/LIS System and official mapping. All layers and elements (present & future) related to housing, transportation, utilities, community facilities, agricultural, natural resources, cultural resources, economic development, governmental districts, land use, zoning, property boundaries, in addition to, planimetric, topographic & cadastral features, and development are all under DCD's jurisdiction.

This document is designed to provide the City of New Berlin with a minimum set of policies to implement an Enterprise GIS/LIS system, and protect the integrity of its Geographic and Land Information System assets. To facilitate this objective, this document includes security protocols, standards for appropriate application of data, and best practices for management of this valuable resource.

CHAPTER 1: INTRODUCTION

The terms "Geographic Information System" (GIS) and "Land Information System" (LIS) refer to a collection of digital information technologies capable of sorting and analyzing spatial and aspatial data (attributes connected to spatial data). A GIS system is composed of computer hardware and software, and an array of data that may include maps, databases, photographs, and scanned document images.

A comprehensive municipal Enterprise GIS/LIS system should provide a common platform for data collection and storage. As well as harmonize the work flow of respective departments and disseminate information for the benefit of public at large.

GIS technology provides municipal governments with extraordinary quantitative and qualitative benefits. Nearly every City department uses GIS in some manner. GIS provides the Clerk's Office with district maps at election time. It provides detailed Storm Water data which can be viewed in the field. The Police Department uses GIS to ensure that squad cars are dispatched to the correct location. It is used extensively in Planning and Community Development as a presentation tool and to analyze data to make informed decisions. GIS can also be used to answer questions from businesses and the general public.

HISTORY

In 1988, the City of New Berlin embarked on a plan to develop and implement a Geographic Information System. Municipal cadastral/topographical maps were converted into a seamless digital base map and a database link between the map and existing property records was developed. In 1998, the City moved from Genamap to ESRI products.

Over time, other related software packages have come online that can help support the City's GIS system such as CityView and Cartegraph.

In late 2004, the City outsourced GIS/LIS services due to the departure of key salaried staff. It was universally agreed upon that the GIS mission provides critical information daily and is imperative to the City's data integrity.

The Mapping Coordinator position was reinstated in late 2005. It was determined that a full time staff person would be the most effective means to carry out the ongoing needs of the City. We will continue to outsource data maintenance and special projects to supplement the existing GIS/LIS program.

2006 was a turning point for the GIS/LIS system. The City's legacy system was replaced using the diversified skills of the GIS Team. Measurable successes include:

- Migrated all GIS data to relational databases (most current ESRI format)

- Set up of new Server, migration of data, new standardized file structure

- Began process of documenting internal procedures: importing data, data update work flow, creating maps, and using software

- Updated data: Orthophoto, planimetrics, storm water and water utilities

- Created GIS intranet site to replace unsupported applications for interdepartmental usage

- Updated Official City map to meet the requirements of State Statutes.

- Created current and up to date zoning map and implemented procedures to ensure that new information will be added on a timely basis

- Established sharing of as-built information between departments allowing access to digital files and reducing the storing of redundant data

- Trained staff in the Assessors Office, Utilities and Streets Department, Planning Services Division, Police Department, and DCD Clerical Staff in the use of GIS software

FUTURE PLANS

Develop and promote a true Enterprise GIS/LIS

Enterprise GIS/LIS (see diagram in Appendix B) is simply taking a complete organizational approach to sharing, using, and managing spatial information.

Many government agencies see the necessity of consolidating information into one common model. Because there is much interaction and work-flow between departments within government entities (i.e. public safety, building inspection, utilities, engineering, etc.), the need for the sharing and updating of common spatial information is critical.

Developing an Enterprise GIS/LIS should be taken with serious consideration. Even the most robust system cannot afford to "rest". A community is a dynamic place with changes taking place frequently.

The City's long term Enterprise GIS/LIS Plan is founded on the following components:

- **Retrieve, manage and disseminate data to all departments and to the public**
  - Intranet/Internet
  - GIS desktop applications
  - Other LIS applications
  - Waukesha County LIS
  - Field data collection
  - GPS data

- **Create deliverables for staff and the public**
  - Citizen requests
  - Elected Official requests
  - Utility maps
  - Preparation for meetings and public hearings

- **Empower the end user**
  - The ability to answer their own questions
  - Ability to query and look up data independently
  - Provide solutions using GIS software and data
  - Expand knowledge of GIS/LIS

- **Provide technical expertise and support**
  - Assist and train end users
  - Employ GIS specific knowledge
  - Provide advanced cartographic representation
  - Apply spatial analysis tools
  - Create GIS/LIS disaster recovery plan

- **GIS/LIS Administration**
  - Develop data standards
  - Maintain data integrity enforce quality control
  - Develop documentation and metadata (descriptive data about our datasets)
  - Evolve Enterprise GIS/LIS Plan
  - Create better workflows, processes and procedures
  - Establish restrictions on access of restricted information

- **Evaluate hardware and software needs**
  - Maintain levels of performance
  - Currency of software functionality
  - Customization of GIS systems

CHAPTER 2: CUSTODIANS AND USERS

The following persons or groups have direct roles in creating, maintaining, or using the City of New Berlin's Geographic Information/Land Information System. Their capacity is summarized below, and specific staff duties are addressed in greater detail in Chapter 4, Acceptable Use.

Mapping Coordinator

The Mapping Coordinator, reporting directly to the Director of Community Development, is primarily responsible for the planning, implementing, coordinating and administering a City-wide computerized integrated Geographic and Land Information System which includes, but is not limited to data development/maintenance, training of Department Users, and maintaining and disseminating public records within the GIS/LIS. The person in this position is authorized to upload new data as it is received from Waukesha County and other approved sources, and develop user-friendly operations of the GIS platform (e.g., Cartegraph, CityView, Internet Mapping, etc.).

The Mapping Coordinator will have a role in creating user requirements for individual departments, especially as it relates to the use of application databases with the GIS map features.

The Mapping Coordinator is also responsible for maintaining and implementing standards for hardware and software to assure compatible, reliable, and user-friendly operation of the GIS platform. In addition, the Mapping Coordinator will have administrative access to all computers and servers that support a GIS/LIS function in order to load software updates, software patches and to administer & manage the GIS/LIS data.

The Mapping Coordinator will work in cooperation with the IT Department.

Director of Information Technology

The City of New Berlin's Director of Information Technology is responsible for basic hardware support functions of the GIS/LIS system. The Director of Information Technology is responsible for the system's overall security, and for the back up of data on a regular basis. The person in this position may be authorized to upload new data as it is received from Waukesha County and other approved sources if the Mapping Coordinator is not available.

The IT Department will work in cooperation with the Mapping Coordinator to provide access and compatibility to all city databases.

Municipal Department Users

As previously discussed, a substantial number of municipal departments have or need to have desktop access to the wealth of information contained in New Berlin's Geographic Information System. The access rights of each Department User vary, and are detailed in a separate chapter of this policy. In its most basic form, the role of the Department User is to apply the available data in a manner that enhances workplace efficiency. Department Users are generally authorized to have read-only access to data. However, in many cases, individual users may

develop custom databases and applications for their specific operations that may be linked to the GIS/LIS upon approval of the Mapping Coordinator. In such cases, the Department Head of the department involved becomes responsible for managing the retention and disposal of the record in accordance with Municipal Ordinances.

Residents and Businesses

The local community is ultimately the beneficiary of the Geographic & Land Information System. Individuals have increased access to data and for the first time, can view the data in a spatial context. Developers can obtain digital data and analyses.

The City of New Berlin makes its GIS/LIS records, available to the general public in accordance with its open records policies. In order to accomplish this, the Mapping Coordinator is responsible for recommending policies to educate the public, as well as putting forth budget requests for Internet Mapping.

Elected Officials

Elected Officials receive support from GIS in many areas. They are able to obtain; analyses, general maps/notifications, project maps, census maps and analysis, cadastral/property maps, Board and commission graphics, zoning and land use, reports, professional expertise and custom products.

CHAPTER 3: SECURITY AND DATA INTEGRITY

INTRODUCTION

The City of New Berlin has invested a substantial amount of resources to develop the data resources that comprise its Geographic & Land Information System. When this volume of information has the potential to be accessed by multiple users, steps must be taken to assure the security and integrity of data. This Chapter is intended to outline the security protocols that are required to limit the chance of security breach or data corruption.

PHYSICAL ACCESS SECURITY

The Director of Information Technology is responsible for all elements of physical access security. The following have been identified as key elements:

SECURE LOCATION: Physical access to mainframes and servers provides access to the information stored therein. Mainframe, servers, and other essential devices must be located in areas that are protected from unauthorized access. The City currently maintains these appurtenances in a secured location within City Hall.

REVIEW OF NEW CONNECTIONS TO OUTSIDE SOURCES: Any new access to the City of New Berlin's mainframes or servers may provide access to information. Any proposal for new connections, including dial-up access for authorized users, must be reviewed and approved prior to making the live connection.

REVIEW OF HARDWARE AND SOFTWARE INSTALLATIONS: All new installations must be reviewed for security risks. All new installations bring up compatibility issues as well.

INFORMATION SECURITY

The Director of Information Technology is responsible for certain elements of information security, while other elements are the responsibility of the Mapping Coordinator or other Department Users. The following have been identified as key elements:

LOG ON SECURITY: Access to all computers with GIS capability requires user identification and password authentication. All Users must access the system using only their assigned user identification and password. Any change in the employment status of users must be immediately reported to the IT Department, and access restrictions modified as necessary. Employees who have workstations located in public areas or who have access to restricted information should not leave an unattended terminal logged on.

TRANSACTION CONTROLS AND DATABASE SECURITY: The ability for multiple Department Users to link databases to the GIS provides an opportunity for the severity of a single data entry error to be compounded. As a result, no Department User is authorized to create data links without the expressed approval of the Mapping Coordinator. All users shall be limited to Read & Execute access, except the Director of Information Technology and Mapping Coordinator, who shall have Full Control authorities.

DATA INTEGRITY

Users shall not attempt to alter files without the expressed permission of the Mapping Coordinator. In the event of a threatened loss of data, Users shall comply with mandatory log off requirements, as may be issued by the Director of Information Technology or Mapping Coordinator.

Users are prohibited from establishing the "link" between their databases and the GIS/LIS system. The Mapping Coordinator must make all new database links. The Mapping Coordinator will only establish a new link upon reviewing the accuracy and integrity of the database.

Any action by a User that threatens the integrity of the system is prohibited.

Any use of the system which may threaten or which may perceive to threaten the safety of others, or that are otherwise illegal, is prohibited.

DATA BACKUP: The Director of Information Technology shall conduct daily data backups, and shall establish a mirrored or redundant data system. Access to the GIS/LIS shall not be made directly to the master data files.

DATA UPLOAD AND DOWNLOAD: The introduction of new information from outside sources has the potential to corrupt data files. The Director of Information Technology shall conduct a backup prior to uploading new information from Waukesha County or other approved sources. The Director of Information Technology and Mapping Coordinator are the only persons authorized to introduce new data to the system.

CHAPTER 4: OPEN RECORDS POLICY

INTRODUCTION

The information available to users of New Berlin's GIS system has varying degrees of sensitivity. Chapter 3 addresses the security of information, while this Chapter addresses the public availability of GIS/LIS records.

All information, regardless of the storage medium, is subject to local, State and Federal laws which govern access, protection of privacy and / or unauthorized disclosure. As a result, all data collected and maintained in the GIS/LIS system should be categorized by the Mapping Coordinator in conjunction with the appropriate Records Custodian.

DATA CATEGORIES

The following information categories are provided as a means for separating data files that have different security requirements, and to assist in the identification of appropriate Users and recipients.

PUBLIC INFORMATION: Data that is available to any person or user, regardless of one's status or interest.

RESTRICTED INFORMATION: Data that is not necessarily public information pursuant to Wisconsin Open Records laws, disclosed to specific representatives of the City of New Berlin for the purpose of carrying out their duties, so long as there is no legal bar to disclosure.

RECORDS REQUESTS

Chapter 59 of the Municipal Code, <u>Records</u>, specifies the requirements for access to public records, as well as retention of public records. This Section is intended to identify the procedures to be used in administering GIS/LIS records.

For the purpose of this policy, there are two types of information that can be obtained from the City of New Berlin: Available Records and Custom Products.

DEFINITIONS: Available records are defined as any information, either in hard copy or digital format that has been developed or produced in the normal course of activity for the operation and conduct of City government. Available records are further defined to be in a format that already exists, and which can be provided to the requestor in existing form.

Although not required by statute, Custom Products can be created by GIS Staff. These are defined as any information, either in hard copy or digital format, which the City has the ability to create, but which is not required for the normal operation and conduct of City government. Custom Products are further defined to be in a format that does not exist at the time of the request. For Custom Products to be developed, the City will be required to expend resources to collect, manipulate, format, and quality control the end product.

AVAILABILITY: GIS/LIS records that are categorized, as Public Information shall be made available in their existing format as required by Wisconsin Open Records Laws. Custom Products will be made available after the request is received and processed and payment has been made. Records that have been categorized as Restricted shall generally not be made available as Public Record or Custom Product, unless otherwise required by Wisconsin Open Records Laws.

PROCESS: Requests for Available Records may be submitted verbally or in writing to the Mapping Coordinator for processing. The requestor will be contacted as soon as practical and will be advised that the request has been processed and the information is available for pick up, or that the request must be processed as a Custom Product. Requests for Available Information and Custom Products will be delivered to the requestor upon payment of applicable fees.

Requests for Custom Products must be submitted verbally or in writing to the Mapping Coordinator for processing. It is recommended that requests for Custom Products be presented in writing, in order to help assure that the product compiled by the City is suited to the requestor's specific needs. The requestor will be contacted as soon as practical and will be notified that either:

▪ The request may be processed upon receipt of fees as determined by the Mapping Coordinator in accordance with fee schedules. All such notifications shall include an estimated cost and time for delivery.

▪ That additional information or clarification of the requestor's desired product is needed.

▪ That the request has been denied. Denials shall be in written form and shall state the Mapping Coordinator's reasons for disapproval. Examples of reasons for disapproval include: the request is for Restricted Information and authorization for release is not required by law and release is not granted by the legal custodian of the records; the request is of a scope and nature as to be unmanageable with the resources available to the City of New Berlin, and the City is not required by law to create new records by extracting and compiling information from existing records in a new format.

DEPARTMENTAL REQUESTS FOR INFORMATION

Municipal Department Users may request Available or Custom Products from the Mapping Coordinator, using the same *Availability* criteria and *Process* established above, except that no fees shall be charged.

RECORDS RETENTION AND DESTRUCTION

All information must be retained and / or destroyed in accordance with Chapter 59 of the New Berlin Municipal Code. The Mapping Coordinator shall function as a liaison to the legal custodians of public records. The Mapping Coordinator, in coordination with the appropriate legal custodian, shall administer the records retention and destruction program for all GIS/LIS records.

CHAPTER 5: ACCEPTABLE USE

INTRODUCTION

This Chapter defines the City of New Berlin's parameters for acceptable use of its Geographic & Land Information System resources. This policy is based on the belief that GIS has been implemented in order foster the City's mission of providing cost effective and efficient services to its citizens. All other uses of GIS are secondary.

IDENTIFICATION OF USERS

All Users must enter their assigned user identification and password when accessing GIS/LIS resources. Use of others' identification or passwords with or without their consent is expressly prohibited. Except as required for department heads or the IT Manager, acquiring or attempting to acquire other user passwords is prohibited.

ACCESS TO RESTRICTED INFORMATION

All data that is categorized as Public Information will be available in read-only format to all users without restriction. Select users may be authorized to view restricted information. The use or access of restricted information without authorization is expressly prohibited.

Users with access privileges to restricted information may not make said information available to unauthorized users, except in conformance with Chapter 3 of this policy, or as may be required to comply with Wisconsin Open Records laws.

PERSONAL USE OF GIS RESOURCES

During non-work hours, Department Users may access information that is categorized as Public Information. Department Users may not access Restricted Information for personal use.

Department Users may not access New Berlin's GIS/LIS resources for private business. Users are prohibited from obtaining information from the GIS/LIS for the purpose of private sale or resale of information.

Department Users who wish to receive either hard copy or digital copy of information gathered for personal use must adhere to the Open Records request policies detailed in Chapter 3.

PENALTIES FOR VIOLATION

Department Users who violate the terms of acceptable use may be subject to disciplinary action.

Any action taken with the intent to corrupt data or damage the integrity of information is expressly prohibited and is grounds for dismissal. Any use of Restricted Information without authorization is grounds for dismissal.