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Professional White Paper

Benefits of Countywide Geographic Information System

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GIS - Overall Functional Benefits

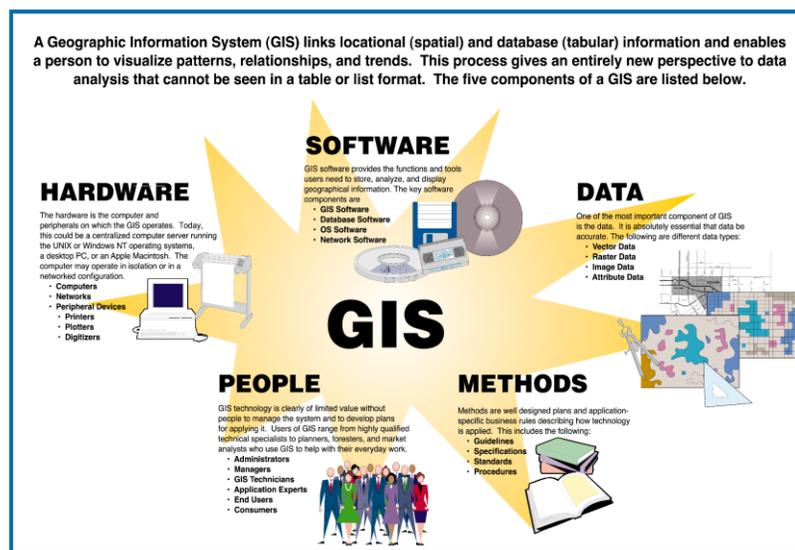
Geographic Information Systems combine and manage graphics and attribute databases in a computer system environment to facilitate the input, storage, retrieval, and analysis of geographically referenced information. GIS can have an influence on virtually every county department or agency and serve as the foundation for the development of many diverse applications. Faced with many of the problems typical of county government, GIS can play a significant role in the following:

- Reducing the inherently slow, labor-intensive, and costly aspects of manual technology.
- Eliminating the duplication of countywide mapping efforts.
- Increasing the efficiency and reducing the cost of data maintenance.
- Resolving discrepancies in current land records.
- Integrating all land-related information.
- Increasing accountability between offices that share information.
- Creating better and increased access to public data.
- Generating revenue through the marketing and sharing of data with outside agencies.

More importantly, access to current geographic information will allow agencies to improve service to the public and make better informed decisions. Sidwell's goal is to design a GIS base map that will cost-effectively supply the most benefit to the greatest number of users. In addition, there are various unquantifiable and sometimes intangible benefits provided by the various uses of GIS, including the following:

Meeting legal mandates
Locating information or places
Analysis
Publications

Responding to public inquiry
Contractual obligations
Demonstrations or presentations
Planning



In most local government jurisdictions there are significant resources typically spent on land management-related issues. Experience has shown us that approximately 80% of all activity within local government is in some way geographically related. Tasked with the management of increasing amounts of land information, local governments have recognized the need to better support business solutions to land activity by improving their decision-making capabilities.

A review of current practices in local government often reveals duplication of records and efforts; operations that are compromised by inaccurate, inadequate, or non-existent information; the inability to correlate information from multiple departments; and, ultimately, expensive staff time spent trying to correct or accommodate these situations. County decision-makers have experienced an increase in the complexity of problems and the costs associated with financing and providing services to support the following range of administrative operations:

- Valuation and Assessment Studies
- Annexation Boundary Analysis
- Economic Development Studies
- Taxing District Studies
- Infrastructure Site Verification
- Land Use and Development
- Utility Infrastructure Inventory

Our research into most counties' land records generally reveals inconsistencies in tax parcel numbers; inaccurate, incomplete, and unreliable maps that are not easily reproduced; and aerial photography that is out-of-date or has a different scale and format from the maps. Thus, the need for an accurate and up-to-date parcel inventory at the local government level is clearly evident. A consistent parcel mapping and permanent parcel index numbering system is an important tool for resolving discrepancies in a county's land records, with some of the immediate benefits including:

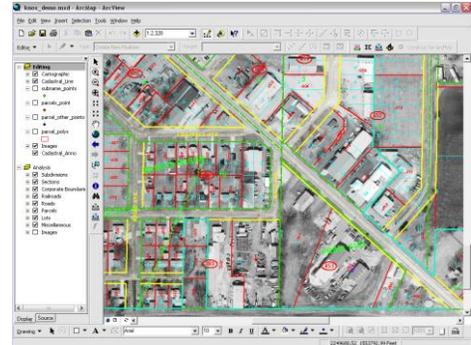
- Correcting inaccuracies within existing properties.
- Locating properties correctly.
- Verifying information on property record cards.
- Supporting property reappraisals.
- Locating and assessing property previously omitted from the tax roll.
- Creating more equalized and equitable parcel assessments.
- Identifying drainage districts and properties accurately.
- Defining T.I.F. districts and accurately identifying parcels lying within district boundaries.
- Defining taxing districts and accurately identifying parcels lying within district boundaries.
- Supporting tax collection and distribution.

Functional Benefits by Department

In addition to the overall functional benefits listed above, GIS can offer many specific benefits, which are unique to a given government department or agency. Below is just a partial listing of the potential benefits by department. (It is by no means an exhaustive list.)

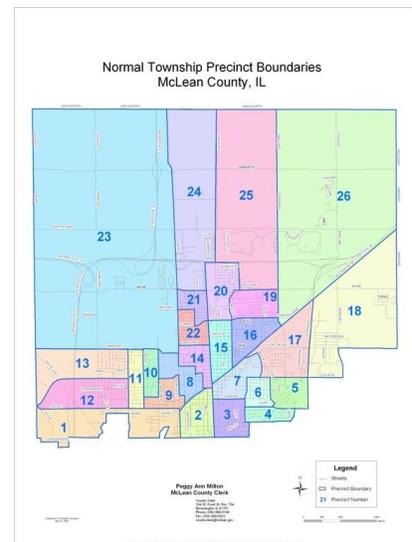
Supervisor of Assessments

- Generating accurate tax assessment maps
- Generating farmland assessments, soils and land use types
- Displaying parcels within a region by specific sale type
- Analyzing properties based on neighborhood factors and sale type
- Direct linking into tax cycle administration software
- Direct linking into mass appraisal software
- Comparing commercial vs. residential properties
- Querying by owner name, address, and parcel
- Comparing deeded acreage vs. calculated acreage
- Retrieving deeds and subdivision plats by address and scanned documents
- Preparing documentation for Board of Review, PTAB hearings
- Viewing sale ratios using GIS
- Facilitating mail merge workflows
- Aiding field data collection



County Clerk - Recorder

- Mapping taxing district boundaries, tax codes
- Managing drainage district data
- Mapping voter registration information and facilitating elections administration
- Locating polling sites
- Mapping precinct and political office boundaries
- Delineating current annexation and tax boundaries
- Producing plat, easement, and special maps
- Retrieving deeds and subdivision plats by address and scanned documents
- Facilitating mail merge workflows

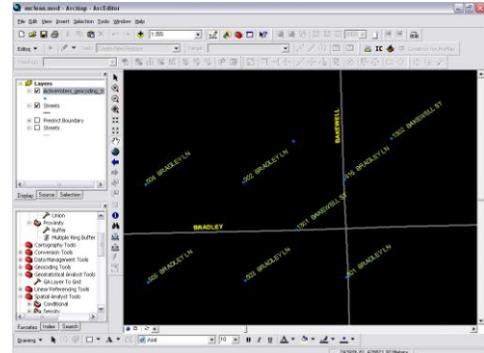


County Treasurer

- Accessing tax maps and tax administration data
- Producing delinquent tax sale maps
- Mapping paid/unpaid property taxes

County Sheriff - Public Safety 911

- Facilitating 911 Emergency response dispatch
- Phase II Implementations
- Countywide rural addressing
- Delineating ambulance response districts
- Analyzing crime statistics
- Planning officer patrol routes
- Mapping accident statistics, incident locations
- Delineating fire protection districts
- Planning methamphetamine lab raids
- Tracking sex offender locations
- Mapping school sites



County Health/Emergency Management

- Accessing demographic data
- Locating underground wells and accessing septic systems data
- Tracking hazardous waste sites and handling landfill management issues
- Dealing with chemical spills and plumes
- Accessing building and zoning information
- Tracking building permit notifications
- Creating special purpose maps
- Locating and mapping viral outbreaks

Municipalities

- Mapping public works infrastructure
- Verifying water line, storm sewer, sanitary sewer, and manhole locations
- Locating natural gas lines and underground power utility lines
- Viewing property easements and building setbacks
- Delineating zoning and political boundaries
- Planning police patrol routes

Cost Benefits

The three basic techniques available to justify the cost of implementing a mapping and GIS project are cost displacement, cost avoidance, and value added. They are detailed below.

- 1) Cost displacement is an approach in which cost savings are portrayed via the displacement of existing equipment, a decrease in manual procedures, and/or an overall reduction in operating costs.
- 2) Cost avoidance is equated to cost savings as a result of providing the facilities to increase productivity without increasing staff and accommodating future growth in the county.
- 3) Value added represents the benefits that are derived by an agency that, with the proposed system, has the capability to perform services it could not have previously performed, or the ability to perform the same functions with more efficiency.

It is difficult to ascertain the hard dollar savings in applying the value-added or cost-avoidance benefit. The benefits are definitely there, but can only be estimated in terms of dollars. Therefore, the methodology to justify implementation of mapping and GIS will vary by county office or department. Some departments may experience cost displacement while others might avoid new or greater costs, or experience added value through better information management and accessibility. The potential cost benefit is probably best illustrated by the virtual elimination of the duplication of effort in map preparation and maintenance.

It is expected that all participating government departments will experience some form of cost benefit, depending upon how aggressively they recognize, implement, and utilize the GIS. It is a transition that will occur over a long term. One additional cost benefit that can be realized, and which we highly recommend, is for a county to fully exploit the ability to market its mapping database and map products to various government and private-sector entities. These potential users may include municipalities, townships, school and park districts, transportation and communication agencies, utility companies, cable television companies, title companies, realtors, land developers, land surveyors, architects, and engineers. This benefit has the potential for recouping a portion of the county's investment in the GIS and can help to subsidize its growth. The county may choose to establish fees for database purchases, annual leasing and maintenance, or to negotiate fees for municipalities through inter-governmental agreements.