



Thought Leadership from ESRI

GIS Streamlining Land Records Management

Creating and maintaining landownership records traditionally involves many tasks that can be spread across many departments and produces workflows that are segmented and disconnected; sometimes the software used to perform transactions differs from one group of employees to the next. A routine information update, such as a change of ownership, can involve many employees and generate a slew of tasks ranging from updating historical information to amending tax rolls.

Land management systems require technology with the capacity to manage what is often an enormous number of parcels and real estate objects. A geographic information system (GIS) provides a framework for an integrated workflow for creating and updating a parcel base that can be easily shared both within and between organizations. Although GIS applications have been used to manage individual aspects of land records management, assessors are now realizing the full potential of GIS by applying it across the land records workflow.



GIS integrates workflows for creating and updating parcel databases.



Embracing GIS Across the Workflow

To its users, a GIS means accurate large-scale spatial data management; data integration; and reliable tools for mapping, analysis, modeling, and decision making. It also means streamlined workflows that avoid duplication of effort and problems with data accuracy. By linking maps and legal descriptions to landownership records, GIS provides an efficient method for record keeping as well as identifying errors in land records. A GIS-based workflow that uses topology tools helps eliminate errors resulting from overlapping boundaries, incomplete parcel descriptions, and other discrepancies in land records. Additionally, advances in Internet GIS make parcel information and maps readily available to the public, businesses, and other agencies, and that saves time and money.

GIS technology easily accommodates multiple users, parcel history maintenance, and data security. Its open standards for data sharing and documentation enable organizations to build and share information more widely, and a GIS facilitates the creation of data of known quality, making it the preferred means to distribute public geospatial data.

With its focus on data, GIS technology can manage large amounts of information covering a wide geographic extent in a single, seamless spatial database. GIS has the capability to accurately and effectively store real-world features. GIS features are stored as elements in spatial databases, and data structures manage the connectivity of linear features into linear or polygon networks. Boundaries can be made of simple

or complex linear features. GIS technology uses the concept of layering for segregating different kinds of information into more easily managed units. In a GIS, layers are used to organize geographic themes including the graphic definition of features, topology defining the spatial relationships between features, and attributes defining the characteristics of the features.

In a project's workflow, data moves from one source to another, and at each step, data may be converted from one format to another. Often it is printed and reused in various data forms. The interoperability tools of a GIS overcome the problems associated with file conversion. Users can perform data migration or support map distribution according to their specific needs. They can use the appropriate tool for the job while ensuring the flow of information across the enterprise.



Local governments generally are concerned with the issues related to a single, common geography, which points to the need for a centrally managed and shared GIS. An enterprise GIS enables users from different departments in an organization to use common data for their specific tasks. Adopting an enterprise geodatabase is more widespread because it helps organizations be more accountable and efficient. A GIS enables them to respond to requests for information faster, serve clients better, and respond to governmental issues, all while reducing costs. Enterprise GIS adopters have found that a system approach is better than a task approach.

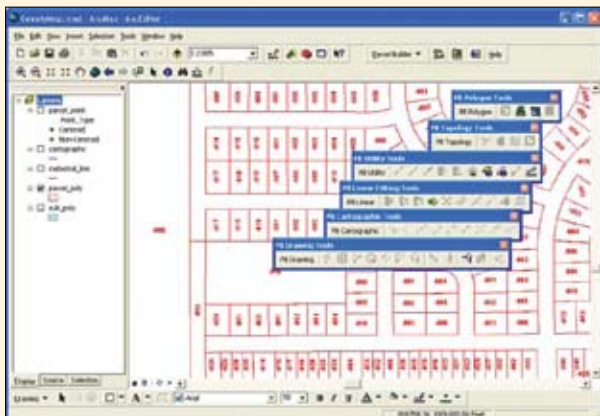
Managing the Parcel Database Gets Easier

Designed to optimize the process of maintaining cadastral maps within a geodatabase, Parcel Builder, a Sidwell software suite built on ESRI® ArcEditor™, adds tools that are specific to the needs of users who are maintaining parcel maps. Parcel Builder has four modules:

- Administrator
- Genealogy Extension
- MapEditor
- MapPlotter
- MapViewer

Administrator manages the parcel number inventory for the land records management workflow and provides the tools for creating, incrementing, retiring, and reporting parcel numbers. **MapEditor** adds more than 30 tools and commands to ESRI's ArcMap™ and is specifically designed to streamline cadastral map maintenance tasks. **MapPlotter** is a tool for creating consistent sets of printed plat book maps.

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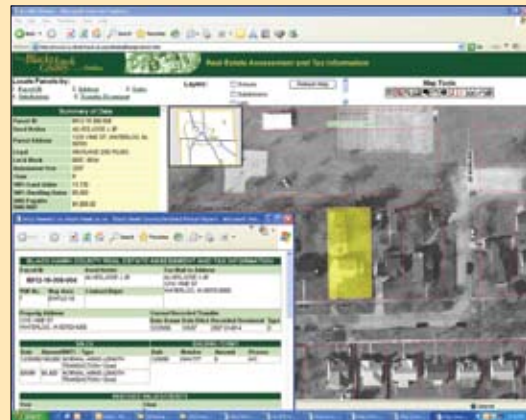


MapEditor Tools

Iowa County Advances Its GIS

More than a decade ago, the assessor in Black Hawk County, Iowa, realized the value of automating property data with GIS. Over the years, increased growth and development within the county brought a growing number of users who needed access to the county's cadastral GIS data. In response, the county has worked toward maximizing the full potential of its ArcGIS® database with the Parcel Builder software suite.

The results have been considerable, including increased productivity in mapping from the streamlined GIS maintenance flows, enabling staff to provide a higher level of service. Black Hawk County's information technology director, Kim Veeder, says, "With the versioning design we established, we have been able to shorten the time required for quality control and the post/reconcile process. This has dramatically shortened the time between the actual parcel maintenance and when the updated data is available to the remainder of our users."



Results of a parcel search display the parcel in question as well as detailed information from the assessment records regarding the property selected.



The highlighted parcel is showing parcel and lot data with aerial photography.

It operates outside the ArcMap layout window, performs automated, on-the-fly resymbolization of map components, and automatically populates map page-specific title components. **MapViewer** is a stand-alone map viewing application that is built on the ArcReader™ control and enables real-time access to all ArcGIS software-supported data formats, including tabular land records data such as tax and appraisal information. **Administrator–Genealogy Extension** acts as the home for control of the parcel number inventory and ensures that parcel number assignment between the GIS, tax, and appraisal databases stays in sync.

Currently in its third release, Parcel Builder has been successfully implemented by nearly 100 counties throughout the United States. Sidwell is now offering special pricing arrangements that will help make your migration to GIS easier. ■



Rapid development of agricultural areas generates many updates to a parcel database.

For more information on how you can streamline your workflow, visit www.parcelbuilder.com.

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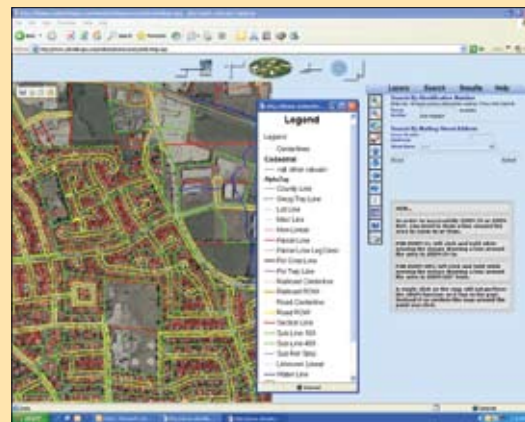


CASE STUDY

A Progressive Technological Outlook Brings Productivity

Kane County, Illinois, located near Chicago, has always been at the cutting edge of technological developments. In 1985, the county began to convert its existing cadastral maps into a comprehensive GIS. Recent growth has brought new challenges to the county including the need to increase the productivity and responsiveness of its GIS and find a more streamlined way to make data widely accessible and usable to various county departments and the public. In 2003, the county began to implement an enterprise geodatabase and shortly afterward adopted the Parcel Builder data model, which has significantly improved productivity.

Kane County can now serve a wider user base with its GIS, expanding from just two county offices to more than 200. To meet the needs of a large and diverse group of users, county staff have developed custom applications that enable data to be used effectively by each office.



Map display from Kane County's GIS Web site shows basic property boundaries and search capabilities for a selected area.



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