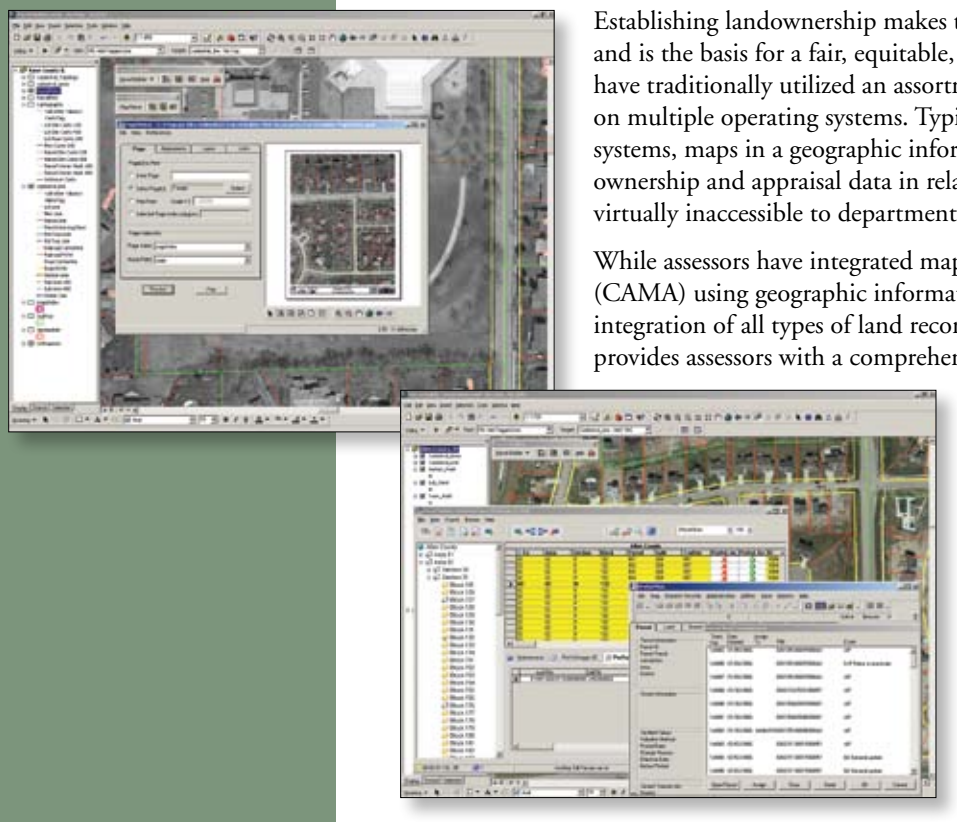
New ESRI enterprise licensing program for small municipal and county governments—see back cover.

Thought Leadership from ESRI

Assessing Fair Market Value with GIS



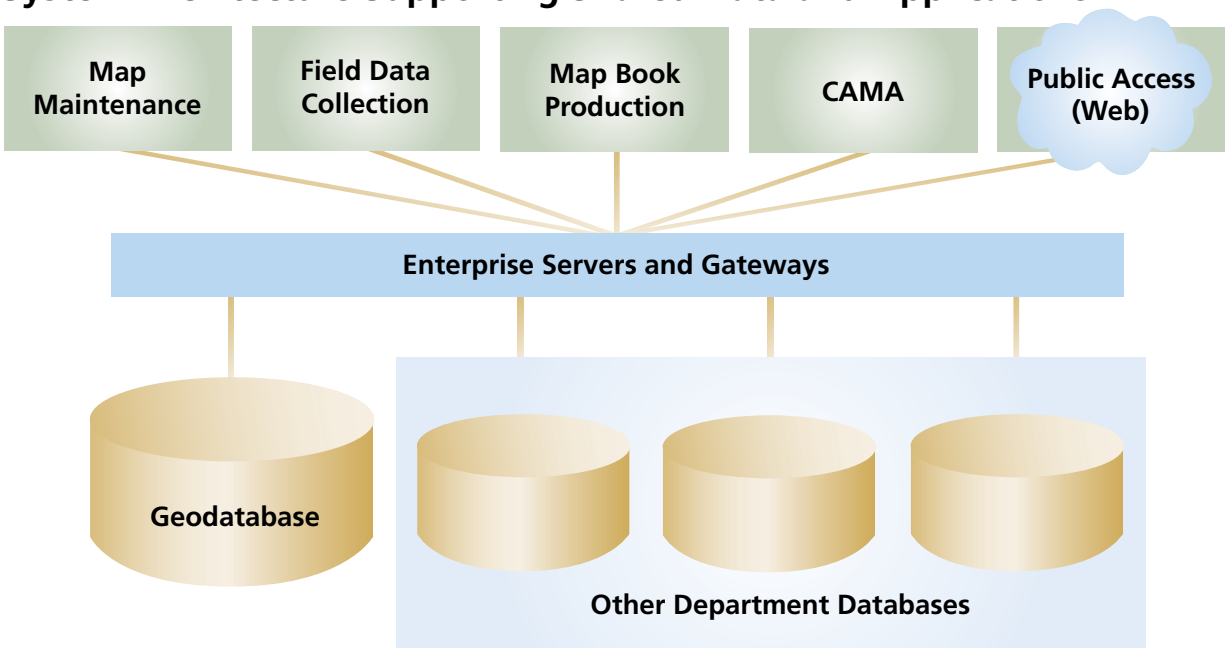
Establishing landownership makes the orderly transfer of real estate possible and is the basis for a fair, equitable, and open land tax system. Assessors have traditionally utilized an assortment of software programs that work on multiple operating systems. Typically, survey data resides in file-based systems, maps in a geographic information and/or CAD system, and ownership and appraisal data in relational databases. Often, this data is virtually inaccessible to departments other than those maintaining the data.

While assessors have integrated maps and computer-assisted mass appraisal (CAMA) using geographic information system (GIS) technology, full integration of all types of land records has not been widespread. GIS provides assessors with a comprehensive solution for efficient and accurate mapping; fair and accurate property assessment; and timely access to ownership, assessment, and map data. With GIS, entire organizations can have a comprehensive and highly integrated platform for sharing, converting, editing, mapping, managing, analyzing, and disseminating land records data, as well as providing Internet access to that data to the public, business, and other organizations.

Integrating GIS and CAMA

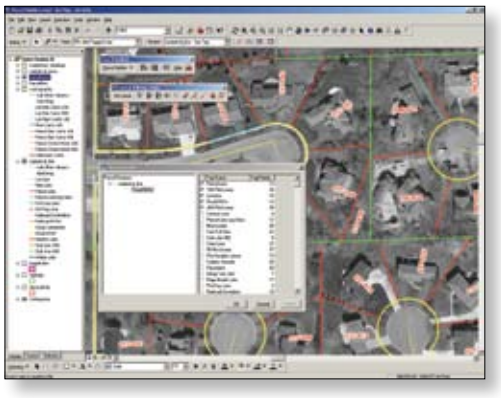
Integrating GIS and CAMA enables the tax assessment function of government to be concurrent with spatial data that is relevant to the tax valuation model. It also supports the creation and maintenance of a more accurate land records basemap using tools and functions of GIS such as topology checking, map projections and adjustments, and map editing tools. GIS provides a single repository of parcel geometry and descriptive data supporting workflow, updates, and mass appraisal input. It adds value to CAMA models, such as an appraisal model, which can place added value on property that has, for example, frontage on a golf course or lake. If the parcel data and land-use data is maintained in a geodatabase, the frontage calculation is simple and easy using the spatial intelligence of the GIS.

System Architecture Supporting Shared Data and Applications



GIS provides an integrated workflow for creating and updating land records that can be shared both within and between organizations and be easily published on the Web.

Maintain Cadastral Maps with the Advantage of a Geodatabase



Parcel Builder, a parcel mapping extension of ArcGIS® developed by Sidwell, provides users with a comprehensive GIS software-based land records management solution. Parcel Builder features simplified ArcMap™ interfaces; performs cadastral mapping tasks; and provides complete integration for GIS, tax, and CAMA workflows, all supported in an ESRI® geodatabase.

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.

Here's how three counties have found success using Parcel Builder.

How has Parcel Builder improved efficiency in your office?

Blue Earth County selected Parcel Builder-Administrator and MapEditor as additions to its ESRI platform because of the editing tools contained within MapEditor. These tools allow for efficient, easy, and consistent editing of our maps. The workflow that it provides is something that current staff is familiar with, so it was an easy transition. Parcel Builder's tools also provide "prettier" maps and allow us to retain most of the look and feel of the maps from our former platform.

Parcel Builder-Administrator enables us to easily and readily track and maintain our parcel inventory. The new genealogy tool provides the ability to generate reports of historical parcel changes and effectively replaces hard-copy information. Most importantly, as this information is created in digital form, it becomes more readily accessible to other users outside the mapping division than our former hard-copy data. Looking at the bigger picture, the Parcel Builder software better positions Blue Earth County as we work toward a live interface between Parcel Builder-Administrator and a new GRM tax system, which will allow for automatic creation and retirement of parcels within that tax system for property tax purposes.

Julie Roisen, County Assessor
Blue Earth County, Minnesota

Explain how the combination of ArcGIS and Parcel Builder has allowed St. Clair County to maximize its GIS investment.

We had a lot of separate pieces of data, and the ArcGIS and Parcel Builder software combination gave us the opportunity to bring our data together. Previously, our GIS data was not getting the use it could. It was viewed as more of a by-product. We needed to change the way we thought about doing business—change people's view of the data and how it could be used. The data integration did change people's view, and it's clear because we're able to produce data for more users than ever before. I like to think of our GIS as being a "data enabler" as opposed to a "map creator."

Dr. Charles Kofron, Ph.D., GIS Coordinator
St. Clair County, Illinois

How has Parcel Builder helped Peoria County?

Our parcel inventory contains almost 30 years of parcel history dating back to 1978, so from my perspective, the most useful model is Parcel Builder-Administrator, because of its digital inventory function. I appreciate that the design of Parcel Builder-Administrator keeps the user in mind. With our heavy parcel activity, a critical element in map maintenance is time. Data entry related to retiring, adding, and linking parcels at the proper map scale is done in a user-friendly table format. In addition to the ease of data maintenance, a parcel search toolbar is provided and allows the user to instantly locate a specified parcel in ArcMap. Parcel Builder-Administrator also enables inventory data corrections and adjustments to be performed quickly. The Genealogy extension to Parcel Builder-Administrator provides parcel history and functions as an important research tool for abstractors, surveyors, and the county's Recorder of Deeds. It provides the critical data needed for transferring property exemptions and building data from retired to new parcels. In my opinion, Parcel Builder-Administrator sets the standard for a parcel inventory control tool.

Nannette Scrivner, Manager, Land Records and Mapping,
Supervisor of Assessments Office
Peoria County, Illinois

CASE STUDY

Enterprise GIS Improves Parcel Maintenance Productivity

Elkhart County, located in north central Indiana, has 16 townships, 84,000 parcels, a land area totaling 464 square miles, and a population of more than 198,000. In 2000, Elkhart County seized the opportunity to develop a GIS project using an ESRI® software platform with data stored in coverage format. The project included new aerial photographic surveys; orthophotography; countywide, two-foot-contour topographic mapping; and cadastral data conversion.

The integration of GIS data into the county's cadastral workflow required frequent maintenance of parcel data in relation to new subdivisions, parcel splits, and parcel combinations. With ongoing development growth, county staff found performing parcel database maintenance for a rapidly developing area to be time consuming. Within two years, GIS parcel maintenance had fallen behind and the county had a mounting backlog. As a result, the county was unable to provide current data to its internal GIS users and its public.

Elkhart County determined that the best solution to improve its GIS parcel maintenance backlog was to advance its use of ESRI's ArcGIS® technology. Sidwell, an Illinois-based GIS and mapping service provider, migrated the county's GIS data from coverage format to an enterprise system and implemented a tagged data model using Parcel Builder, built on ArcGIS software. Within a tagged data model, cadastral geometry is stored as line features, where one line can be tagged with multiple identities such as road right-of-way, parcel line, lot line, and subdivision line. This data model mimics the real world because map features are often coincident.

To satisfy countywide demands for GIS data, Parcel Builder's MapPlotter module was implemented to produce standard-format maps with high cartographic quality. The maps are viewable on an Elkhart County intranet Web site, which uses ArcIMS® as its online mapping application. To better serve the public, the county upgraded its existing public access GIS Web site with new information, rapid response, and easy-to-use tools. The public Web site delivers current map data such as aerials, parcels, roads, water features, contours, and political townships. Searchable topics include parcel number, parcel address, or subdivision name. Advanced searches by sale price range and/or sale date range are supported and can return tax records that fit these criteria.

Moving to an enterprise GIS has allowed Elkhart county to capitalize on its GIS data and boost its service to public and county employee users. Within three months of receiving ArcGIS and Parcel Builder training and instruction, county staff erased its parcel maintenance backlog. As a result, the GIS Web site is serving the public, property appraisers, and others in the real estate community. With its progressive use of technology and software, Elkhart County has streamlined its parcel maintenance workflow and successfully deployed GIS throughout the county. ■

For more information on how you can optimize the process of maintaining cadastral maps with the advantage of a geodatabase, visit **parcelbuilder.com**.

New ESRI Enterprise Licensing Program

ESRI now offers an Enterprise License Agreement (ELA) Program that allows unlimited deployments of ESRI ArcGIS software to small municipal and county governments in the United States with populations of 100,000 or less.

For more information, locate your nearest ESRI U.S. regional office at **www.esri.com/usalocations** or call 800-447-9778.

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