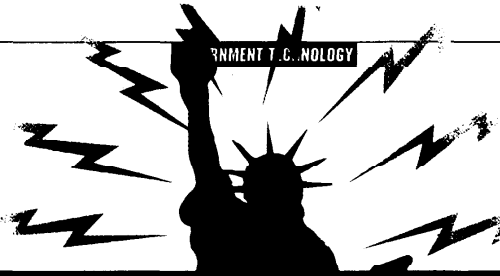


Public property

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How
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Access



Public Access to GIS Parcel Tax Maps

As once-arcaic geographic information systems move into mainstream applications, even the public can get into the act, pulling up land maps at a public-access terminal.

By Laura Long
Contributing Editor

When officials of Lincoln County, N.C., made the decision to automate the county's parcel maps in 1985, Tax Administrator Jay Heavner made a startling discovery. Some of the acreages traditionally used by the Tax Department for appraisals were off by as much as several acres. Those discrepancies affected the property owners' assessments in many cases and would change the property taxes collected each year by the county.

At 300 square miles, the county is fairly large by most states' standards. Except for about 2,000 parcels in the county seat of Lincolnton, these parcels were unmapped. "Obviously, the first steps in our program had to be reconciling our tax assessment acreages to the mapped acres," Mr. Heavner explained. "But we also wanted to ensure public acceptance of the new information. Their cooperation was important since the new records would be used by our office and made directly available to the public."

GATHERING DATA

To compile a map database that would offer software tools for planning activities and create an easy-to-use mapping reference for the public, the county in 1985 contracted L. Robert Kimball & Associates — a photogrammetry, engineering and architectural firm based in Ebensburg, Pa. — to supply "a turnkey digital map database." Under the company's five-year contract, they would create a digital database from aerial orthophotos and digitized soil, forest and land use maps.

The county received the first of the hard copy files from Kimball in March 1990 and began receiving digital data by August. In February 1990, they sent out a request for proposal for GIS software and hardware. In June 1990, they selected Arc/Info GIS software from Environmental Systems Research Institute Inc. of Redlands, Calif., running on IBM hosts, termi-

nals and peripherals.

During August 1990, the first hardware and software was delivered to project organizers; that same month Kimball loaded the first township (about 8,000 parcels of land) which had been built by the consultants in Arc/Info. "Within a couple of hours, we were looking at about 130 maps that were fully joined and had all of the ownership data attached," recalled Mr. Heavner.

The nearly 6,000 owners of parcels affected by these changes were sent letters of the new calculated acreage (which also removed all road rights-of-way for assessing purposes). Each was invited to contact the department for an appointment so he could be shown the new information. Many taxpayers accepted Mr. Heavner's offer, traveling to the offices in Lincolnton to view the maps and aerial photographs firsthand. "For the most part, the taxpayers were

"We're the only program right now in the state allowing the public full access to our mapping information at a public access terminal."

The remaining four townships were regularly received and loaded into the GIS for a total of about 380 digital maps (containing 31,000 parcels) over the next six months. All of these maps were fully joined coverages with parcel lines, streams, railroad rights of way, road rights of way, centerlines, annotations for acreages and measurements, and PINs (12-digit parcel identification numbers). According to Mr. Heavner, the digital files are updated daily by the GIS Division of the Tax Department, as changes are made in property lines or ownership.

In early 1991, the final township tape was received from Kimball — just in time for the completion of the countywide program for reappraising parcels. The new values were effective Jan. 1, 1992. "I wanted to appraise land parcels at the proper acreage, not just on what acreage had been recorded for them during the past hundred years," said Mr. Heavner. His department reconciled all 31,000 taxable parcels of land to the assessing database, so the records matched the new maps within nine months. Some parcels were found to be larger than shown on the tax records; others were smaller. Most acreage tracts were off by as little as 1/100th of an acre up to many acres, said Mr. Heavner.

impressed with the new calculated acreages," Mr. Heavner recalls. "We basically resolved 99.9 percent of our land potential problems before the reappraisal because we'd already discussed the land situation with the public prior to the reappraisal date."

PUBLIC ACCESS

Since the information would be made fully available to the public, it was essential that the department be exact in its new calculations for each parcel. In April 1992, the county set up a public access monitor (with the assistance of its new GIS Coordinator Lew Harford), so anyone could look at the digital land information. "We're the only program right now in the state (and according to some sources, the nation) allowing the public full access to our mapping information at a public access terminal," said Mr. Heavner.

The system has an easy-to-use public menu designed by Kimball and ESRI's regional office in Charlotte. The public menu access terminal and the menu design were Mr. Heavner's ideas.

Using this system, the public can view and print maps or view all property ownership data, but they are blocked from making changes to the database. These maps show parcel lines, soil types, woods and cleared

land, and structure symbol types (such as residential, commercial, government buildings, mobile homes, schools, or fire departments). The structure symbols were digitized from the orthophotos by Anderson & Associates, a civil engineering and planning firm based in Blacksburg, Va., which the county chose to complete its turnkey E-911 project during 1990-1992. The E-911 personnel of Anderson verified the type of structure during their door-to-door canvassing of all structures in the county including all mobile homes. The symbol was digitized exactly on top of the structure.

From the database, they can look at information attached to the map graphics, such as ownership (current owner plus the previous four owners), PINs, and the last five deed books and pages plus approximately 20 more items of interest. It's free to browse maps online, said Mr. Heavner, however a cost of \$3 to \$5 is charged for printed maps.

SYSTEM BENEFITS

Because the county now has up-



Lincoln County
software tests
System/6000 computer
ing a Model 530 functioning as
the main host) and a Model 320

Four other terminals for the Tax Department's Appraisal Division and GIS, including a Model 120 that is used by the public, are connected via TokenRing to the host.

The public may print maps (8-1/2" x 11") on an IBM Model 4029 laser printer. Maps are priced at \$3 for a regular map, \$5 for a more complex, map, such as a map showing soils, woods and cleared and/or structures. They also plot black and white on paper on its CalComp 53/ plotter on paper of maps is available at either CalComp or



THE RILEY REPORT

By Tom Riley

PRIVACY PROBLEMS INVISIBLE

A recent survey on the attitudes of Canadians toward privacy has revealed that "Many privacy problems may be invisible to the average Canadian." The survey, entitled: "Privacy Revealed: The Canadian Privacy Survey," was conducted by EKOS Research Associates Inc. in Ottawa, for a consortium of private sector organizations and government agencies. It is considered the most comprehensive report to date on the subject of privacy.

Even though 92 percent of those surveyed expressed some concern about possible privacy violations — with 52 percent expressing extreme concern — only 8 percent related their concerns to unauthorized release of personal information through information technology. Of the 18 percent who said they had experienced a serious privacy invasion, most related it to robbery, breaking and entering, assault, junk mail and telemarketing.

And although 62 percent of those surveyed said that they had less privacy than they did a

"Paradoxically, people arrive at the 'most extreme concern' position either because of knowledge or ignorance."

decade ago, only two groups of respondents named the abuse of information technology as a cause for concern. One group — the underprivileged and less-educated — fear technology "because they have no idea what the consequences of the technology are."

Another group — those well-educated and knowledgeable about technology — "fear privacy abuse because they believe they know about the sheer capacity of information technology to threaten their own interests." As the report stated, "Paradoxically, people arrive at the 'most extreme concern' position either because of knowledge or ignorance." To those people between the two extremes, potential privacy abuse through technology remains invisible.

Those wishing a copy of the report can contact: Sally Jackson, Office of the Privacy Commissioner, at (613) 995-8566.

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to-date records of who owns property and how much land they have, the Assessors Department is much more accurate with assessment procedures and is generating additional revenue for Lincoln County. "Believe it or not, we weren't assessing enough acreage countywide. The mapping and reconciliation process has created additional funds and has given us much better records for recording changes now and in the future."

In all, acreage changes were well-received by the public, he added.

"They readily accepted changes to their property lines and acreage when they could see the aerial orthophoto with the property lines overlaid. This let them 'view' their properties in a new way. We could also print maps or give them hard copies of the aerial orthophotos (30" x 42") with the property lines drawn on top.

"When you're able to share good, accurate data with the public, they receive it with an open mind and understand it more fully," he said.

According to Mr. Heavner, the

progress that Lincoln County has made during the past few years (from no maps to a modern digitized database) has been made possible by the progressive management and commitment of its County Manager Mr. A.R. Sharp Jr. and the Board of County Commissioners. "We're proud that anyone can sit here and look at what we have free of charge. We think that's quite an accomplishment," Mr. Heavner said.

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