For counties the pressure is on again. More than forty-five states have passed enabling legislation to fund and provide Enhanced 911 service (E-911) to their citizens. With only 30% of the geographic United States covered by E-911, states are demonstrating a growing commitment to fill in the blanks and provide this service more broadly. This state movement has counties around the country scrambling to find ways and means to meet yet another responsibility. At this time about 30% of counties are in compliance, 20% have a game plan, and the rest, well...

E-911 service enables emergency dispatchers to instantly correlate an incoming 911 phone call with an address and a location. Identification of the location of the distress call helps dispatchers rationally distribute scarce emergency services, minimizing rescue time and, incidentally, saving taxpayers the cost of expensive, cross county excursions.

Sounds great but, for counties, there are a few hitches. To achieve E-911 service, counties must have a georeferenced address for every residential and business parcel under their jurisdiction. That means in the cities, where a number of addresses are Post Office Boxes (no location reference), and in the less inhabited countryside, where often a rural carrier route has sufficed, addresses either have to be found or newly generated. Because of this, some counties are discovering they need to completely readdress their parcel base in order to provide E-911 service.

The need to georeference numerous parcels for correlation with addresses and phone numbers, has increased county government interest in both GIS and in a quick, accurate means of building a GIS or CAD data base. GeoResearch, Inc., the developer of the patented GPS/GIS GeoLink Field Mapping System, has worked with many counties to produce a geocoded address guide for E-911 service. Using a combination of GIS data integration with GeoLink field data collection, GeoResearch has been able to deliver an accurate road network and unique addresses for each parcel, in record time.

Addressing the Issue

Montgomery County, Indiana, with a population base of about 40,000, and a land area of 440 square miles, found it had a substantial number of unaddressed parcels and made a decision to generate a completely new and consistent address guide to achieve E-911 service. The County, from a GIS technician’s point of view, has several blessings—it is flat, wide open, and laid out in a regular grid of sections bounded by county roads.

This made the readdressing process relatively simple. The County designated the intersection of a central north-south county road, called Division, and an east-west county road,
called Baseline, as 0-0. All addresses were generated according to their distance and direction from zero point.

Using GeoLink GPS/GIS, a field crew consisting of GeoResearch’s Manager of Technical Support Services, James McInerney, assisted by a County employee, geocoded and digitized all occupied structures in the County. Daunting as this sounds, the crew was able to georeference about 900 parcels a day in urban areas, and about 100 in rural areas, due to the greater distance between structures. According to McInerney, "There really isn’t a faster way of collecting the data. It takes about half the time as traditional field mapping and hand digitizing. And while you’re in the field, you can geocode additional information which you may need later."

In address coding, data collection represents about 30% of the total process. Field observations are easily integrated into the GIS using the GeoLink Data Manager. The generation of address is automated by macro (AML) programs which calculate the candidate address by computing the distance from a point of origin in address units equivalent to 50 feet. Next, an odd or even address is assigned based on the position of the parcel relative to the road.

GeoResearch technicians scanned a hand edited land ownership map of the county and by using GeoLink’s Raster Background Module it was available for display and reference during the data collection. The ownership map was also used for reference during the editing of the collected data.

Some Things are Free

The nice thing about driving around every road in a county with GeoLink is that a georeferenced, digital county road network is a natural by-product. Other counties, such as Lawrence County, South Dakota and Big Horn County, Montana, have used the E-911 mapping process as a kick-off for creating a complete county GIS land base.

"Having an accurate, digital road network," says Jere Folgert, a GeoResearch GIS analyst, "is a bit like having an X-ray of the body. It’s like a skeleton to which all the other information can be attached and rectified." Eighty percent of a county’s responsibility is associated with land issues. Once a county has a digital road network as a solid foundation for a GIS land base, it can fully populate that land base with GPS/GIS data collection techniques.

Big Horn County started with E-911 mapping and has since added detailed road attribution, hydrography, irrigation, railroad lines and crossings, tax boundaries, and much more. Lawrence County now includes Lot and Block Numbers, County and Corporate boundaries and other information tagged to location for easy access.

For many counties, a state E-911 commitment may appear to be another overwhelming housekeeping task. However, new computer mapping techniques can collect and organize data cheaper, faster, and more accurately than ever before. Perhaps once the dust has settled, we’ll all breathe easier.