

The Invaluable Role of Graphic Information Systems (GIS) Mapping in Community Mobilization

Note: The following information has been graciously provided by Tom Casady, Chief of Police in Lincoln, Nebraska

In Lincoln, Nebraska, essentially all of their police dispatches and incident reports are automatically geocoded, so they can use GIS to reveal patterns, study proximity to other features (like liquor outlets), and perform a variety of analyses. Mapping police incidents helps the community and decision makers understand the nexus between alcohol and other phenomena – such as violent crimes, party disturbances, DUI arrests, and so forth.

For a police department, using mapping software is ordinarily a matter of marrying the data they are already collecting in computerized databases (such as dispatch records and police incident reports) with the electronic base maps that already exist in their community.

Police officers have been sticking pins in maps since there were pins and maps. The use of GIS software to automate and enhance this process is similar to the change from lead typesetting to desktop publishing. The real value in GIS use in policing is the ability to slice and dice data in a visual interface that is especially powerful.

Casady encourages people who are new at this to go to their local planning department, county surveyor, public works department, or county assessor – agencies of local government that are almost certainly old hands at GIS. Frequently, a city or county will have a rather robust GIS system well before the police begin to use this incredibly valuable resource.

Training and Technical Support

Technical support and assistance with GIS planning, software selection, training, and so forth is available for law enforcement agencies from the United States Department of Justice. The DOJ's research arm, the National Institute of Justice (NIJ), hosts the Mapping and Analysis for Public Safety program:

<http://www.ojp.usdoj.gov/nij/maps/>

In addition, the Justice Department also funds a technical assistance and training project at the National Law Enforcement and Corrections Technology Center. This project is called CMAP (Crime Mapping and Analysis Program):

<http://www.crimeanalysts.net/index.htm>

Another NIJ-funded project that focuses on GIS training is hosted by the Carolinas Institute for Community Policing:

<http://cicp.org/index.html>

NIJ also funds a Crime Mapping Laboratory at the Police Foundation, which provides training and technical assistance:

<http://policefoundation.org/>

Implementing GIS Mapping Software

The steps to implement GIS in policing go something like this:

1. Inform Yourself

- Find out what already exists in your community: what other government agencies are using GIS, and how willing are they to share their resources and expertise?
- Find out if you can partner with other local agencies in a GIS enterprise.
- Find out what other police departments doing. Study their websites, visit the various technical support sites listed above, talk to other departments in your state that are doing GIS work to get an idea of the GIS work they are doing.

2. Develop a GIS Plan

- Outline what you want to accomplish, the products you would like to produce, and the audience for these products.
- Identify the key personnel who will be responsible for the project.
- Lay out a timeline, milestones, and preliminary budget.
- Identify any obstacles, and potential solutions.

3. Inventory Your Data

- What do you want to map?
- What databases already exist, and what is their condition. Pay particular attention to the currency of the data, because good GIS work for police departments depends on timely data. Likewise, the quality of data is important. Is your data in a consistent format (especially addresses), or can you take steps to improve the data so it will be recorded consistently and accurately?
- What geographic layers are available for you to use, and are they located on a server you can access, or will the owner of the data provide you with copies that you can load locally on your own PCs?

4. Select Software Products

There are a growing number of GIS software vendors, and Lincoln Police Department uses the biggest – ESRI’s ArcView: <http://esri.com> Lincoln Police Department has been using ArcView since 1997, and are currently using ArcView 9.0. Hundreds of law enforcement agencies are using GIS software to map crime and incidents, although Lincoln Police Department was an early adopter.

The major GIS software all provides basically the same functionality, and compatibility of files is not a huge issue. It is wise to stick with the products that other agencies in your governmental unit are using. If the other city and county agencies use MapInfo, don't pick ArcView. You will benefit from having a community of government users who can help one another if you try to stay on the same software platform.

5. Hardware Selection and Acquisition

- Don't skimp by trying to load ArcView 9.3 on a 6 year-old Windows 98 PC. Full-fore GIS software is pretty heavy stuff, and needs fast processors, big hard drives, and good graphics cards.
- You don't need to buy the hottest PC around, but you will need a good competent machine. GIS software can coexist fine with other applications, so there is no need to have a "dedicated" GIS computer.
- An important hardware/software component is connectivity – you need to make sure that you have a capable network backbone so you can move data from a CAD system, for example, to your GIS computers.

6. Training

You'll need plenty. Fortunately, it's widely available. GIS software is fairly high-end, so this is not for the feint of heart. Make sure the personnel selected for GIS work are either pretty software-savvy already, or are fast learners. You'll benefit from two types of training: general GIS training that is specific to your software platform and specific police GIS training – which focuses on the analytical techniques particularly applicable to police work. CMAP is a great source for both.