

MetroGIS: Performance Measures Case Study

METROPOLITAN 911 BOARD

Organization: Metropolitan 911 Board
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Summary: New telecommunications technologies, such as wireless phones, are the catalyst for expanded use of geographic information systems (GIS) by the Metropolitan 911 Board and the 27 emergency dispatch centers in the seven-county metropolitan area. The culture of data-sharing nurtured by MetroGIS, and the regional data made available through MetroGIS and its web-based DataFinder, are saving time and money for the 911 Board.

Organizational Profile: The Metropolitan 911 Board supports public safety for the residents of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington Counties by maintaining and enhancing 911 emergency telephone service and facilitating coordination of Emergency Medical Services (EMS). This coordinated, regional approach to 911 and EMS ensures the integrity and accuracy of the Metro 911 system while reducing costs.

Uses of GIS: The Board's primary use of GIS is to create and maintain spatial databases for the 27 Public Safety Answering Points (PSAPs), or emergency dispatch centers, in the seven-county metropolitan area. For example, the 911 Board created and maintains datasets such as emergency service zones and PSAP boundaries. Work is under way on a dataset that will map the location of police stations, fire stations, cell phone towers and other facilities critical to the operation of 911 and EMS.

Current project: The 911 Board's biggest current GIS project is to reconcile the differences between spatial datasets, like street centerline data used to map locations, with the Master Street Address Guide data file, which is used by wired telephone companies to create the location database records for 911. Combined with mapping applications used by the PSAPs, the result will allow dispatchers to see the location of an emergency call appear automatically on a live map screen, as well as identify the correct response agency. This would shorten the time in which dispatchers and emergency personnel could respond to calls.

Looking to the future: The 911 Board has two goals with regard to GIS. The first is to provide accurate spatial data to the PSAPs. The second is to create mapping standards for applications that would allow the PSAPs to identify the location of an emergency call on a live map screen, regardless of what telecommunications technology the caller uses. If the PSAP had Automated Vehicle Location (AVL) technology, the screen would also show the location of public safety responders best able to respond to that emergency. A robust database could include a point file

linked to locally maintained databases that contain additional information about buildings, such as whether they contain hazardous materials.

But such a database is an ambitious goal in an environment of fast-changing telecommunications technology. The explosion of wireless telephone use has created a major challenge for 911 service. The Twin Cities area's 911 system was established in the early 1980s, based on wired phone service. The system was designed to immediately provide the phone number and location of incoming calls (as tabular data) based on phone company customer records, updated daily. The system has worked well, with a few exceptions – such as calls coming from large, multi-building facilities like college campuses – which require implementation of additional technology.

Wireless technology is one of several new technologies that are creating the need for new solutions. Wireless calls are not made from a fixed location. Only recently have the wireless carriers in the Twin Cities area begun delivering caller location information along with voice on 911 calls. One solution employed by carriers uses global positioning satellite technology built into handsets, which requires PSAPs to translate a longitude and latitude coordinate on to a map view that often can be translated into a street address. “Wireless technology has pushed us into the GIS world,” said Pete Eggimann, 911 Services Director for the Metro 911 Board, “and it’s the way of the future.”

In this new environment, the Metro 911 Board is working on a number of fronts to continue assisting the PSAPs to respond more quickly to 911 calls. Among these efforts are adapting current datasets or developing new ones for the PSAPS, and developing uniform regional 911 dataset standards. The Board also works closely with local governments – which provide the bulk of emergency response services – to advocate for regulatory changes that will serve consumers by making the 911 system work as well as possible.

Impact of MetroGIS: For almost 10 years, MetroGIS has been bringing together GIS technical experts, managers and policymakers to share information, work cooperatively on projects of mutual benefit, develop data standards and create regional datasets. The working relationships and atmosphere of cooperation created by MetroGIS is making 911 GIS Coordinator Gordon Chinander's job easier.

A multi-agency working group, with staff support from MetroGIS, is exploring ways to make street centerline data more usable for public emergency response purposes. The group is also attempting to devise a set of standards, or requirements, for software vendors that will maximize the value of street address data.

“Without MetroGIS, we'd have to start over and duplicate everything they have done,” said Chinander, “like the single license agreement for data sharing, and the contacts among data producers and users. MetroGIS is way ahead of the curve, and has saved us a tremendous amount of time and money to get the information we need. It's helping us work a whole lot more efficiently.”