

Case Study:

GIS and the City of Midland, Michigan: Outstanding Commitment and Success
City of Midland, Michigan

Geographic
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Local Government*

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The ability to use disaster as an opportunity to make things better has always been a characteristic of great communities in America.

In Midland, Michigan, a City of 42,000 in the center of the state, disaster came in the form of two major floods that overwhelmed the City's sanitary sewer infrastructure in 1986 and 1996. City leaders began to search for technology that would allow them to develop and test a new system that would better prepare the city for the next natural disaster.

The technology turned out to be GIS, and today in Midland, it is making life better for citizens in areas far beyond the sanitary sewer system.

"The floods were definitely the catalyst that led us to GIS," said Tony Foisy, the City's GIS Manager. "Parts of our sanitary sewer network didn't function well and our elected officials wanted a solution. We had been outsourcing our sanitary sewer modeling, and we recognized that GIS was the answer to being able to do that ourselves. We had a very clear-cut objective for GIS, even though our program has taken us way beyond that already."

Foisy came to the City only a year ago, just in time to lead the implementation of the three-year phased plan developed with the help of Geographic Technologies Group.

"Right now we are only in year two of implementation, but already great things are happening throughout the City as a result of GIS," he said.

Year one of the aggressive plan focused on data development. "We had no GIS data, so we had to gather all of the data and develop base map layers," Foisy said.

Now in year two, the City's focus is on making the data available to users throughout the City with LGweb, Geographic Technologies Group's intranet browser. Some custom GIS applications will also be developed.

"We're already testing LGfires and LGcrimes, and two other GTG applications that let us extract the data from our SunGard-HTE CRIMES and FIRES data. It's really amazing for the users to see their seemingly boring data come alive on a map. It's a basic GIS function, but people learn things from the data they never even imagined when they see it on a map," Foisy said.

"I was helping one of our detectives map B&Es in a particular area the other day. They have been looking at that data for five or six years, but now, with LGcrimes, they can see the bigger picture, the trends become obvious. As a GIS Manager, there's nothing you like to hear more than a user say 'wow'."

Foisy is hearing the word a lot lately. Managers of the sanitary sewer network reaped benefits of GIS this spring when GTG developed a data model that helped them develop priorities for repairing and upgrading the infrastructure.

"We did a project with GTG that involved evaluating every manhole, chamber and pump station feature in the City, a total of more than 4,000 data points. Field crews using GPS units located each manhole, popped each lid, assessed the quality of the lid, checked for water infiltration or other problems, and logged all of the information," Foisy said. The result was a robust database of the type and quality of everything concerning those structures."

The Wastewater Division used the data for its manhole rehabilitation this year. Rather than taking a haphazard approach to repairs, managers were able to look at a map showing where all of the castings were categorized as poor, at all of the locations where water infiltration was noted, or at any other category.

"They could make a quick identification of the hot spots and plan their repairs accordingly. With only a finite number of dollars to spend, they were able to make the best use of the money they had," he said.

"That's the underlying benefit of GIS: it all adds up to better decision making."

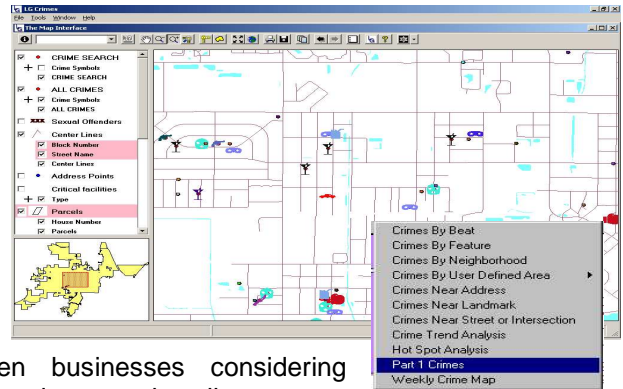
Year two also includes further data development, including building footprints, sidewalks, tree canopies and elevation contours.

"The practical applications are endless. The Parks and Recreation Department can use the sidewalk inventories for planning new locations, and Public Works can use the tree canopy layer to plan pest control efforts through their forestry applications," Foisy said.

Year three of the plan sees Midland deploying GIS information on the Internet for community use.

As the international headquarters for Dow Chemical, the City is flush with well-educated, technology hungry residents and business leaders who are sure to be heavy GIS users upon availability.

"So many of the calls we get are for basic information that will be easily served on the Internet," Foisy said. "I see this is a great economic development tool, when businesses considering locating here can pull up our fiber optic network online, or see aerial photographs of our parks system, or any number of other features they might be interested in.



"And for citizens and realtors to be able to research home locations and all of the amenities we have to offer, will be tremendous. I think people will snap it up."

After the plan is completely executed, Foisy sees himself and GIS technician Dan Bruman moving into a maintenance mode, continually refining data and developing custom apps they are already receiving requests for.

"We'll have a great foundation in place but there will always be exciting projects to work on. We've already been asked by the City Clerk to map out the city cemetery. And, updating parcels, adding points and street centerlines will be a never-ending task."

To Foisy, the quick success and widespread of acceptance of GIS in Midland was not surprising. "We had a great game plan, adequate funding and the support of everyone involved, from elected officials down to the end users. It's a perfect combination: how could we fail?"

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Geographic Technologies Group
1202 Parkway Drive
Goldsboro, NC 27534
Phone: 1.888.757.4222
Fax: 919.759.0410
E-mail: info@geotg.com