



imagiNEWS

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Data Documentation?

After spending lots of time and money developing digital data sets and map layers, it makes all kinds of sense to protect that investment. One of the basic steps you can take is to document what you have created and are maintaining. This data documentation, or metadata, comes in many forms, including free-form and pre-formatted reports, standardized spreadsheets, and metadata databases.



Dave Frey

Here are three questions you can ponder in deciding if you have adequate metadata for the various digital maps and databases you maintain in your organization:

1. Do you know what you've got? You have made a substantial investment in the creation of geospatial and related data sets. To protect and grow that investment you will need to get and keep your maps and data sets well organized. Adequate metadata provides an accurate inventory of what you've got.

- 2.** Can you describe to someone else what you've got? To maximize the usefulness and gain full value from the investment you have made creating and organizing these data sets, you will want to make them available to colleagues and coworkers, across departments and jurisdictions, and to citizens, clients, and businesses. Good metadata help you provide information about your data sets to all potential users of your data (e.g., what data sets are available for what areas, and what is the vintage of those data sets?).
- 3.** Can anyone figure out what you've done? Sometimes, despite our best efforts, data maintenance efforts get put on the back burner. When we get back to it, we need to know the rules of engagement — how did we get here and how do we proceed? What decision rules have we used? Was the data set double-checked and where is it on shaky ground? This is the kind of information we need to continue with a solid maintenance and growth program for every data set we work with. Equally important, this is the kind of information potential users of our

Who is Doing What in GIS and Spatial Technology

THE CHARTER TOWNSHIP OF GRAND BLANC

Population: 30,000 +

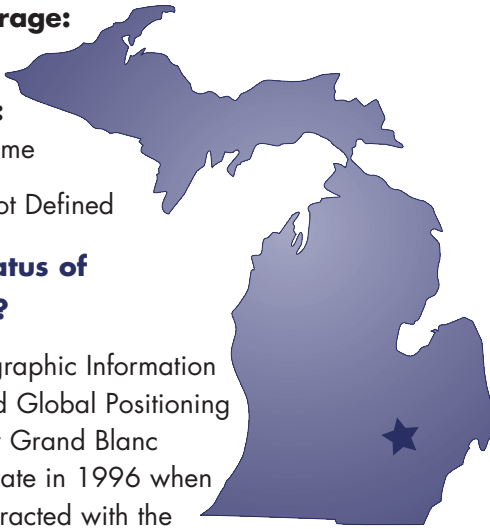
Geographic Coverage:

32 square miles

GIS Related Staff:

2 Full-time & 4 Part-time

Yearly Budget: Not Defined



1. What is the status of your program?

The idea of Geographic Information Systems (GIS) and Global Positioning Systems (GPS) for Grand Blanc Township began late in 1996 when the township contracted with the Land Information Access Association (LIAA) to develop a touch screen Community Information System (CIS). The basis for the CIS was divided into two distinct yet related components, one of which was a GIS derived mapping component. To facilitate the development of the CIS, preliminary GIS data sets were completed by LIAA. Realizing the GIS potential, the Township hired full-time staff to further its efforts. Therefore, the GIS development for Grand Blanc Township started in earnest in late September of 1997.

Township administrators are heavily involved in the GIS project. Those administrators include Township Supervisor William F. Delaney and Controller Larry J. Parks. They have both had a significant role in bringing the technology of GIS to Grand Blanc Township, as well as helping to solidify the means to allow the GIS project to grow. Members of the GIS/GPS Service Center (GGSC) include Jason J. Taylor, who is the GIS coordinator, and has been involved with the project since its inception, and Sharon J. Gregory, our primary GIS Technician who has been with the project since January 1999. To round out the GGSC group, four

additional employees have been assigned to work on the GIS project on a temporary basis. In addition, since most Township employees enter data on a daily basis that can somehow be related to geography, all Township employees are considered to be an important part of our GIS project.

The Township's current network infrastructure is driven with two IBM Netfinity network servers housing Microsoft Windows NT Server and an IBM Model 720 AS/400. Client operating systems throughout the building are divided between MS Windows NT and 95/98. All members of the GGSC are running Windows NT on either IBM or Gateway 2000 workstations. In-house GIS software includes two copies of Environmental Systems Research Institute's (ESRI) Arc/Info 8.1, six copies of Arcview 3.2, one copy of MapInfo, and one copy of Michigan State University's Cmap 4.0. Software related to GIS data storage and production includes Azteca Systems' Cityworks Facilities Management Arcview extension, Microsoft's SQL Server 7.0, Borland's Visual dBase 5.5, and Blue Marble Geographics' GeoTransformer. Current GPS related items are a Trimble ProXR GPS receiver and the associated Pathfinder Office 2.11 software.

Grand Blanc Township's hardware and software selections have significantly aided in development. To date, Grand Blanc Township's GIS efforts have assisted numerous departments, including Assessing, Building, Clerk, Fire, Police, Public Works, Treasurer and Zoning, as well as many Township residents, businesses, developers, and public facilities (ex. public schools and parks). In the way of data development or map production, some of the projects completed since late 1997 are:

- Converting the entire parcel layer from the single section dxf format that Genesee County used over to Arc/Info's Librarian structure where the data is stored as coverages (lot boundaries) with region (ownership) overlays.
- GPS inventory of 85% of all sewer and water infrastructure including fire hydrants, water valves, service

leads for water and sewer, manholes, lift stations, pump wells, and storage tanks and towers.

- Addition of Azteca Systems' Cityworks Facility Management software and the creation of the associated MS SQL databases to store engineering attributes about the sewer and water features.
- Purchasing of Digital Ortho Photos (6"pixel, flown at 1"=840') and the resultant registration of all geographic data to the photos.
- Integration of CIS as a GIS tool for departmental and resident querying, analysis, and map production.
- Examples of map production include: Crime scene mapping for use in court, tracking of parcels under development, school and voting districts, sewer and water facilities, variance notifications, roads, zoning, floodways, parcels, neighborhoods, and fire hydrant locations to name a few.

2. Do you have any new projects or activities?

We have several new projects starting in the near future, the largest of which is the integration of an optical storage system into our GIS program. The goal is to have all applications, permits, review materials, receipts, engineering prints and plans scanned so they can be stored digitally and linked to a geographic feature. All of these materials will then be stored by indexes like parcel ID number, permit number, date, address, etc. and then can be retrieved via a GIS. The end user can simply click on the parcel containing the desired information, a small script will send that parcel ID number to the query engine in the optical storage software and the software will return a categorized "hit list" based on document types. These different document types will all match the initial parcel number selected. The user can then select the desired digital document and display it on screen for review, or print out a paper copy.

The next fairly large integration deals with programming that will allow for a basic level of automation with our mapping screens. The goal here is to create interfaces that allow for members of the police, building, and tax departments to monitor actions within the Township on

a daily basis. In each case, departments will be able to track activity within their area as it happens. For instance, the police will have a mapping interface that refreshes as additional accidents or crimes are added to the associated databases. Along the same lines, the building department will be able to track all residential and commercial inspections as well as building permits, and the tax department will be able to monitor which parcels are paying their taxes and when the payments are made. Each of these tasks can currently be viewed through AS/400 databases, however we are simply trying to enhance their ability via mapping interfaces.

Additional tasks that are of a somewhat minor basis include adding geocoding ability to our roads layer, creating business sign and street light inventories, and beginning to track conservation areas and woodlot tracts.

3. What would you do differently if you had to start over? What valuable piece of information have you learned that you would you like to share with the GIS community?

To start over now, there are several things I would change. The main thing I would do differently is to incorporate Digital Ortho Photos into the GIS project at a much earlier time. In many cases, this would be a hard sell because of the upfront costs, but after seeing the benefits and realizing how effective the photos really are, I would recommend them highly. Another issue that I would like to have altered is that of patience and training. The impatience is generally linked to excitement, however, if there is no patience from end users, then there is no time for staff to get the proper training to use the needed hardware and software. In our case this was not a major issue, but at several points, if the patience factor was enforced and proper training engaged, we could have saved some repetition in work. Finally, the idea of using part-time employees to perform the fieldwork and data entry is okay if those employees are extremely mature and capable. Often, you will find people who either do not understand or do not care about the importance of accuracy and correctness when building a GIS. This is not acceptable. The trend of GIS is that it is continually growing. Therefore, I believe it is better to hire

one person full-time than several people part time, as there will always be a need for their services.

Grand Blanc Township had enough foresight to hire someone to organize its GIS efforts. This fact is key for what I am about to propose, and most, if not everyone, will disagree with the one aspect of our development that I am very pleased about. This aspect is that we proceeded with starting the development of our GIS prior to constructing a GIS Master Plan. The absence of a master plan in the beginning may have caused some work to be performed out of the "correct" sequence, but this route allowed us to start building a GIS and creating a product to show our officials exactly what they are providing funding for. I have a notion, though I possess no data to back it, that many attempts to start a GIS get dropped because they are caught in government processing and the true potential for GIS in their municipalities are never discovered. We are just now completing our master plan after two and half years of successful development. I do believe we waited about one year too long to create our plan, but I still believe that is better than attempting to do it too soon.

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Notes and News

Barry County announces their exciting new web services now being offered. Land information is now available in the form of viewable parcel maps and a searchable parcel database with realtor summary information. The introductory service is free of charge. An official unveiling, brief training and Q & A session was offered on Thursday, June 15. Check out the site <http://co.barry.mi.us>. They also remind us that personal service and attention is still available by visiting their office.

The State of Minnesota announced a revision to their Clearinghouse that includes a new way to search for data on the web. The Clearinghouse can be found at www.lmic.state.mn.us/chouse. The link to "free data online" will get you to about 150 metadata records, most of which were created using **DataLogr**. The search tool is called the GeoGateway, and can be accessed from the Clearinghouse, or by directly entering the URL:<http://geogateway.state.mn.us/>.

Congratulations to Oakland County staff member **Karla Richey**. Karla recently won an award for Best Presentation/Paper at the annual ERDAS User Conference held in Washington D.C. ERDAS creator of the IMAGINE suite of software products being used as part of Oakland county's Historical Aerial Photography Project. Karla presented this unique project to a group of photogrammetry professionals and users at the conference.

2000 IMAGIN MAP GALLERY

For the first time, the IMAGIN fall conference will include a map gallery. The posters will be displayed at Shanty Creek Resort during the Fifth Annual IMAGIN Counties and Local Users Conference held October 15-17, 2000.

Winners will be based on ballots filled out by conference attendees and announced at Tuesday's Luncheon. Awards for 1st, 2nd and 3rd place will be given in the following four categories:

Best Cartographic Design — Maps in this category may include a single map product or a map series of related maps that together express an overall theme.

Best Analytical Presentation — Maps in this category will present the results of a spatial analysis project.

Best Data Integration — Maps in this category will show effective use of diverse data formats (e.g., raster, vector, text) in one consistent presentation.

Best Cooperative Presentation — This category includes maps that were created by two or more agencies.

A Map submission form will be available in the next few weeks (look for a PDF on the IMAGIN Website). The submission form is due by September 8, 2000. Registration will be \$5.00 for each submission (includes series presentation), which can be paid with your conference registration. There will be no limit on the number of submissions.

MAIN STORY *continued from page 1*

data sets need in order to understand the limitations inherent in the data they are using — where can the data be trusted and how far can it be trusted? Good metadata allows users to understand and wisely use what they've got, and helps data creators maintain and update the data sets they have created.

A quick review of Computer Mapping 101 reminds us that, by far, the largest expense in getting computer mapping up and running in an office is the time and effort spent in creating the GIS and related data sets that are the life blood of our programs. Metadata are the diagnostic tools needed to spot and track defects in our data structures. Metadata are the insurance policies against the day our GIS operator forgets what was done or moves on to greener pastures.

Metadata are the institutional memories of where we were and what we did.

So how did you score? If you are like most of us, you had good intentions at the start, then time and money constraints pushed the bulk of your data documentation efforts down the "to do" list never to be seen again. But — if you are like most of us — your GIS and related digital data sets are extremely important to your organization. A little effort documenting what you've got now will save you from a massive effort recreating it all later on.

To paraphrase from everyone's favorite homemaker...Data documentation? It's a good thing.

— Reprinted from **Beyond Borders**, a newsletter from the Land Information Access Association, March 21, 2000

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IMAGIN is a nonprofit 501(c)3 organization comprised of individuals and organizations interested in the use and application of geographic information system (GIS) technology in Michigan. Our members are committed to improving the quality and availability of digital data necessary to make good use of GIS. We believe that cooperation and open communication are necessary to achieve these objectives.

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