

BIOGRAPHICAL INFORMATION

Barbara J Saunders
Supervisor, MARS North/Central Project
Data Integrity & Technology
DTE Energy / MichCon Gas

Specific Responsibilities

Joined MichCon in 1995. Responsible for maintaining the manual gas distribution maps and Cadd mapping system for the MichCon North/Central Region. The North Central region covers 3,224 square miles, with over 22,000,000' of main. In 1999 became lead on the GIS Conversion Project (MARS-Mapping and Automated Recordkeeping System). In January 2003 became supervisor of the MARS North/Central Data Integrity & Technology team.

Past Experience

SSOE Architects & Engineering (1992-1995). Project Manager for the MichCon Gas Company's mapping contract. Implemented a Cadd generated mapping process, as well as maintaining the existing manually inked Mylar maps.

BEI & Associates (1990-1992). Project Manager for the MichCon Gas Company's mapping contract. Maintained and created manual maps of the North/Central gas distribution areas.

Educational Information

B.S. Geography, Michigan State University

Professional Memberships

GITA – Great Lakes Chapter, President elect for 2004.

IMAGIN – Improving Michigan's Access to Geographic Information Networks

BIOGRAPHICAL INFORMATION

Lori A. McPhetridge
Project Manager, MARS North/Central Project
GIS Conversion
Analytical Surveys, Inc. – North Operations

Specific Responsibilities

Joined ASI in 1988. Responsible for the overall conversion effort for the MARS North/Central Project. These responsibilities included day-to-day communications with Michcon personnel, project workflow, employee management, source procurement from varying suppliers, outsourcing and managing the scanning vendor located in Michigan, managing the landbase creation at our Colorado and North Carolina locations. In addition, tracking and maintaining the financial health of the contract and ensure schedules were met and on track.

Past Experience

Project Manager for MidAmerican Energy's landbase conversion contract. This was a FRAMME-based conversion development project encompassing 1,875 square mile service area. The duties for this conversion project included delegation of work, employee management and project workflow, as well as client communications on a daily basis. ASI developed a digital landbase for the service area for the conversion of facilities for MidAmerican's electric and gas distribution records system.

Project Manager for British Telecommunication's conversion contract. Started on the project as a GIS Senior Specialist and advanced to the role of Project Manager throughout the duration of the contract. As a Project Manager, provided consulting, planning and implementation of geographic and facilities conversion using SHL VISION* GIS software. Managed the delivery of 40 out of 45 exchanges awarded since 1992 in addition to the conversion of 100 additional exchanges. Developed a strategy and motivated the project team to exceed aggressive schedules.

Records Conversion Technician, Southern Bell Telephone (SBT). Technical responsibilities included converting SBT's paper records to digital format, updating records, and answering technical questions. Gained valuable conversion experience setting up wire centers for and performing ASI's reconciliation, layout, rake-off and Final Quality Control tasks.

SURVIVOR GIS – FROM THE VAX TO THE FIELD

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ABSTRACT

The Michigan Consolidated Gas Company implemented a GIS project called MARS (Mapping & Automated Recordkeeping System) in 1984. In the twenty years since we began, there have been numerous challenges that have influenced the survival of this project. New technologies, both internal and in the external geospatial community, have tested our ability to stay the course and survive the challenges. A migration from one platform to another, software/hardware upgrades, Y2K issues and a corporate merger with new preferred methodologies and protocols also brought cultural change to the process. The importance of common goals and teamwork became even more essential to the success of our GIS project with the expectations of our management and our end-user clients driving us to provide the product and services regardless of the challenges we faced along the way. Implementing the new system, training, and user acceptance were achieved by good communication with our clients and respecting the possible impacts to our organization. Keeping the GIS torch lit and keeping the reality alive has been a success partly due to the long-term relationship and partnerships created between the user and the vendor. This was key to winning the GIS challenge given to us with our conversion to be fully complete first quarter 2004. This presentation will take you on a journey from the VAX to the field and how we survived and continue to accept the challenge.

THE GIS CHALLENGE

MichCon accepted their first GIS challenge in the early 1980's with various studies conducted to look at establishing a viable solution for automated mapping. In 1984 senior management approved the implementation of an AM\FM system. The next challenge was to choose the best platform to help move forward the goal of a successful GIS. In 1986 a pilot commenced using an Intergraph hardware\software platform. With the completion of the pilot MichCon acquired their own Intergraph system (VAX\FRAMME). In 1990 Intergraph FRAMME 1.0 design and implementation began and so did the Detroit Conversion Project. In 1992 the Detroit Project was going strong and the Grand Rapids\Muskegon conversion project began. In 1997 the North\Central project was initiated with commissioned aerial photography. Could MichCon survive the task of converting 150 years of history, with over 4,000,000 records, 20,000+ maps and close to 1,000,000,000 facility attributes? In surviving such a challenge no GIS project is without roadblocks and setbacks.

SURVIVING THE CHALLENGE

Numerous issues have tested the ability for MichCon to stay the course and meet the GIS challenge. In 1996 the first major system within MichCon to use NT technology was the MARS Project. A migration from the VAX\FRAMME platform to Windows NT and FRAMME NT was completed in 1997 and the final data migrated in 1998. In 1999, a merger between MCN Energy Company and DTE Energy was forged with MichCon becoming a part of the DTE Family. This alliance brought additional challenges with different methodologies and protocols new to the MichCon project. The cultural changes that come with such a merger can inhibit and slow down a project but it can also bring new energy to it as well. GIS on the electric side of the house (Detroit Edison/GENISYS Project) proved to be more accepted company wide as an enterprise solution and is interfaced with their Work Management and Design & Estimating Systems. With GIS being a key component of the DTE Company, this brought a new level of IT Support and initiatives not present prior to the merger. With the merger underway, the MARS conversion continued to move forward. Other issues affecting the challenge were preparing for Y2K and various system upgrades such as FRAMME 4.0 and Windows 2000. The technology issues and changes were not the only challenges that affected the success of our conversion project. Remaining productive and on schedule with less staff, increased budget constraints, all while facing today's economic challenges a reality that not only is an internal struggle but one facing the external geospatial community as well. The latest challenge the MARS Project faces is a new DTE corporate initiative underway looking at interfacing the Work Management system, Human Resources and Financial sides for both utilities. For the gas and electric GIS systems this may be another migration of data to a new platform.

BUILDING ALLIANCES FOR SUCCESS

Throughout the journey from the VAX to implementing our GIS in the field, the importance of teamwork has been essential to surviving the challenge. Despite the roadblocks and technology changes, the expectations of our management and end-user clients drove us to provide product and services regardless of the challenges we encountered. Nodal connectivity was established to enable the Engineering Department to utilize MARS data; a Leak Survey Application and a Corrosion Application to begin in February 2004 were all results of the expectations of our clients. Reporting was a key component to meeting our clients' needs and providing the information and data needed for compliance related issues. Implementing the MARS GIS system and its' applications required training and user acceptance. This was achieved by good communication with our clients. The importance of having common goals and teamwork was imperative to our success in keeping the GIS challenge alive. This success was in great part due to the internal teamwork but also from the alliance formed with our conversion vendor throughout the journey.

During the MARS Conversion Project a partnership was formed and a long term relationship created that has proved to be an alliance that has helped keep the GIS torch lit and facilitated MichCon in surviving all the challenges encountered along the way.

The partnership with ASI (Analytical Surveys, Inc) began in 1986 with the Detroit Conversion Project, and they provided ongoing support through its completion in 2000. ASI responded to the needs of MichCon with various levels of support such as data conversion, software support, training, and quality/audit and data maintenance throughout our GIS journey. The table below outlines the history and details of this partnership.

ASI / MichCon Partnership History

1986	Detroit Conversion Project - Completed January, 2000 Main and Service Scrub 1986-1995 Main Scrub Only, 1995-2000 Building Footprint Digitizing Project, 1995
1986-2004	Provided documentation for all procedures, training classes, workshops and project related information. Using Access Databases, Gantt charts, spreadsheets and manuals.
1990-1991	Data Capture System software developed. Informix System.
1994	Two ASI staff on-site for six months to support and help the Detroit Drafting Team.
1996	Data Capture System software migration from Informix System to PC format. On-site training provided to Detroit Drafting Team.
1990-1997	FRAMME and Rulebase development support.
1998	Aerial Photography flown for Transmission Project pilot.
1999	MARS North/Central Conversion Project Implementation.
2001	Conversion data revisited to set connectivity for Engineering Department application.
2001	Detroit Services Project. Targeted completion date: March 2004.
2002	MARS North/Central Quality Audit Project Implementation.
2002	Grand Rapids Service Backlog Project.
2002	Muskegon Rural Conversion Project
2003	Muskegon Urban Service Conversion Project
2003	Muskegon Urban Service Quality Audit Project Implementation.
2003	Corrosion Application Pilot
2004	Corrosion Application Project Kick-off – Feb'2004
2Q - 2004	MARS North/Central Conversion Project completion.

A SUCCESSFUL ALLIANCE

The MARS North/Central Conversion Project began in 1999. The challenge was to complete the data conversion of the Distribution Field Stations located in greater Michigan by 2Q-2004 (see map illustration on last page). The partnership history between MichCon and ASI was a key component to meeting this challenge. This long-term relationship between the user and the vendor helped us to achieve a successful implementation and meet our project goals. This alliance proved to be an important part of our successful GIS journey.

Pre-conversion meetings were held between MichCon and ASI to set the project scope and schedule. The partnering at this stage was crucial to its success. Identifying all sources and materials needed for each phase (internal and external) and assigning responsibility for obtaining them were tasks given to both the user and vendor. One missing source or non-completed task would affect the project's timeline significantly. A pre-conversion checklist was created for each of the MichCon territories to be converted with due dates and who was responsible for each task. Each MichCon field stations is unique in its geography, and what information may be available to us outside of MichCon such as addressing sources, tax maps, and various municipality publications. This pre-conversion exercise proved to be time well spent. The project was in a continuous motion of landbase creation and data conversion in multiple areas at the same time. The required sources and documentation needed to be available at the specified juncture of the projects. A lesson learned early in the process was to create the task due dates with a cushion of time in the event of a delay.

A pilot area was selected in our Traverse City service territory. An area was identified that contained a good overall picture of the land, main, services and facilities that would be typical throughout all areas. The MichCon team performed the quality audit of the pilot. A three-day workshop was held with team members from both MichCon and ASI to review the pilot and establish rules and procedures for the scrub effort. Documentation from this workshop became a working document throughout the project. All procedures and conversion rules were added and edited whenever appropriate.

Once the pilot was complete and met the MichCon acceptance criteria, the remaining Traverse City data conversion began while land base was being created for the remaining service territories. At this point we were winning the challenge and on target. The conversion deliveries were arriving on schedule and the MichCon team began the task of QA/QC. The MichCon Team was comprised of four Cadd Technicians with 35 years experience between them in gas distribution mapping. They knew their jobs, knew how to interpret our records and followed established drafting standards. The problem encountered was how to interpret and understand the GIS deliveries from the conversion team. Giving proper feedback, and scoring using the established acceptance criteria and all in a scheduled timeframe is key to keeping the flow of work on schedule. It was apparent that a QA/QC training class was needed. This enabled the QA/QC team to become more efficient and productive.

The Traverse City conversion deliveries were now going through the QA process and the training class proved to be a success. We were proceeding on schedule. At this point in the project a decision was made at Michcon to make a model enhancement to the MARS system. Nodal connectivity was to be set so that the Engineering Department could extract data out of MARS for an application being developed. All North/Central Conversion deliveries that were received and accepted were returned to ASI. These deliveries were revisited and redelivered with nodal connectivity set. This was added to the scope of work for all remaining North/Central deliveries.

The next issue to overcome was the ability of the MichCon QA/QC team to keep up with the high rate of deliveries coming from the vendor. It was apparent that the project timeline would be compromised if we didn't make some adjustments. A project meeting was held to discuss the problem and propose a solution that would get us back on track with our schedule. The working history between MichCon and ASI led to another successful partnership solution.

A team at ASI was established with its own project manager to take over the QA/QC process. This team would essentially be wearing a "MichCon" hat and function as representatives of MichCon. They would follow the MichCon QA Process Guide and procedures and there would be no member of this team working in conjunction with the ASI Conversion Team in any way. A training workshop was held to identify any problems or interpretation issues. Although some would think this was a "fox-in-the-henhouse" type scenario, it has proven to be a sound decision. A random sample report was designed and implemented by ASI that programmatically identified the 10% sample to be QA/QC'd. This eliminated any possibility of influencing the scoring. As part of this initiative, a MichCon employee would be on-site monthly to oversee the project for auditing purposes. This partnering between the user and the vendor enabled the project to get back on track.

There were other issues or problems that were encountered throughout the project that also impacted the schedule:

- The creation of the Geo-Index and Plot Boundaries assigned to ASI. MichCon IT resources unable to meet deadlines. This solved the possibility of the project being delayed.
- The vendor had to be in sync with MichCon's rulebase at all times. When the North/Central Project began we were on version 136 and are currently in version 150. This was a constant impact to the timeline.
- ASI had several project manager changes.
- The imaging/scanning vendor was fired and a new one hired.
- The task of creating and assigning MARS street codes became a shared effort between MichCon and ASI to keep landbase creation on schedule.
- MichCon merged with DTE Energy.
- Budget constraints that impacted travel expenditure.
- Vendor Questions not being answered by MichCon field personnel. Proposed solutions were used and a database was provided identifying them for reference.

These problems or issues were always discussed, solved and monitored between MichCon and ASI through weekly conference calls, status sheets, Gantt charts, and on-site visits. A meeting was held each time a MichCon Service Area conversion was started. We called these “Oddity” meetings because each service area is unique and had their own oddities particular to their location. These were important on the conversion side and the QA/QC side to know what to look for and/or recognize as a standard method of practice. By establishing the avenues of communication and knowing that ASI has a good understanding of MichCon standards and practices due to our history of working together, there were few issues or problems that were not solved in a timely manner. By having this alliance between the user and vendor we were able to overcome and survive the numerous GIS challenges encountered since we began the MARS North/Central Conversion journey.

A SUCCESSFUL IMPLEMENTATION

The North/Central Conversion Project is targeted to be complete by 2Q, 2004. The map illustration found at the end of this paper illustrates the implementation of each of the service territories. We have held four training classes for our end-user clients with two more scheduled for late February. Monthly extracts of the data are burned onto CD's, and sent out and accessed by our clients from a laptop in the field or from their office desktop.

The North/Central team is currently working on maintenance fixes identified during the QA/QC process and working on the backlog created during the conversion process. We are in true maintenance mode adding new landbase, new main and services. The one component that tells us that our implementation and partnering was a success is that our clients are using the data. Our conversion journey is done and the maintenance journey begins.