

GIS Enabling Partnerships in Sault Ste. Marie

Sault Ste. Marie is the third-largest city in Northern Ontario, with a population of 75,000. It is located at the hub of the Great Lakes and is the seat of Algoma District. The steel industry provided a boom for the city's economy in the 1960s and 1970s. However, as time passed, demand for the city's steel diminished. To help diversify the local economy, it created the Sault Ste. Marie Innovation Centre (SSMIC) in 1999 to drive innovation and create opportunities in the science and information technology sectors in the region.

The SSMIC focuses on encouraging the creation and growth of Algoma's small and medium-sized businesses, initiating and improving advanced research studies, and pursuing strategic market development projects. One of its highly successful projects is a community-based GIS, developed and operated by its Community Geomatics Centre (CGC). The project was established initially as a shared GIS to serve the information management needs and increase efficiencies of the Corporation of the City of Sault Ste. Marie and PUC Inc., the City's local utility.

The project involved creating a central data warehouse to be used by all departments of both organizations to share geographic information, technology, knowledge and skills. Working with ESRI Canada, the CGC leveraged ESRI's ArcGIS Desktop technology to compile the City's and PUC's inventories of administrative, water, wastewater, electric, transportation and telecom infrastructure into a single system. The GIS has been used to improve various areas including asset and facility management, land use planning, road maintenance and network planning and design.

"Sharing information through ESRI's GIS technology has provided greater efficiencies and significant cost reduc-

tions for the City and the PUC," said Tom Vair, Executive Director, SSMIC. "This has led to more effective use and management of Sault Ste. Marie's resources, improved safety in utility operations and enhanced delivery of services to citizens."

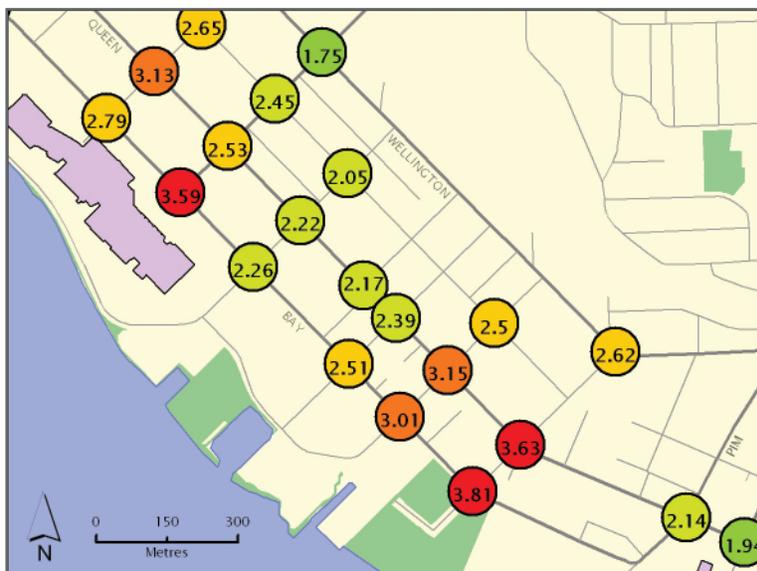
"Over the past 10 years, ESRI GIS has played a key role in improving municipal and utility operations and enhancing public services in Sault Ste. Marie. It has provided a stable platform for increasing collaboration within the district to build safer, healthier and more prosperous communities."

Tom Vair,
Sault Ste. Marie Innovation Centre

The CGC reached out to other local public sector organizations to encourage data and skill sharing to improve the community's overall operations and health. Today, the SSMIC has more than 60 community partners including the City's fire and police departments, school boards, public health, social services and economic development agencies. In addition to PUC Inc. and the Corporation of the City of

Sault Ste. Marie's public works, transportation, and engineering and planning departments, Algoma Public Health's departments of environmental health and infectious diseases and the Healthy Babies Healthy Children program are also connected with the CGC. Other community organizations provide their data and leverage the centre's expertise in conducting in-depth GIS analyses to support strategic planning.

Using ESRI technology, the CGC transforms raw data into highly visualized maps that help agencies to see trends not conveyed in traditional spreadsheets. It enables broad analyses of information never previously combined or understood, revealing new insights and relationships between data. Tapping into the CGC's GIS information, technology and skills has enhanced the way partner organizations conduct their business and helped reduce their IT spending, information-gathering requirements and labour costs. Agencies gain affordable access to ESRI technology through SSMIC's enterprise licence agreement with ESRI Canada. Using ESRI solutions and Citrix virtualization software, agencies have a secure and efficient means to share data with other community partners while respecting each organization's privacy policies.



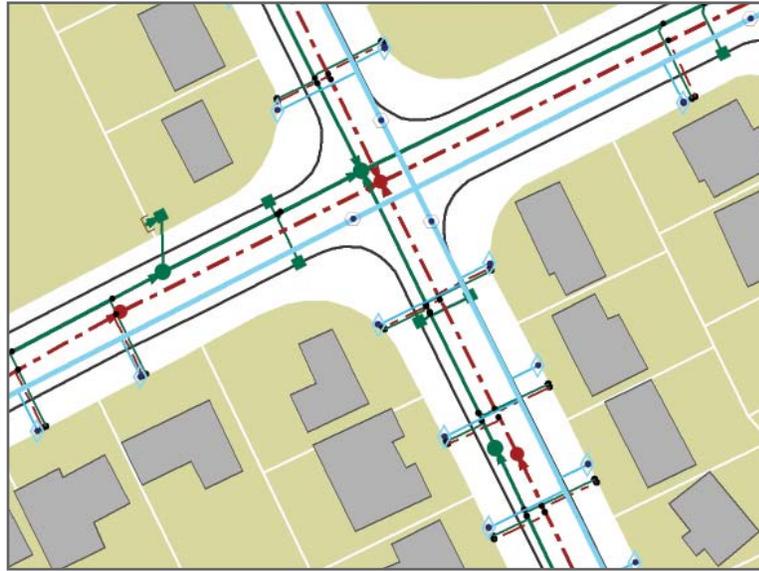
This map shows high-risk intersections in Sault Ste. Marie. This helps the City to prioritize locations for audible pedestrian signals to enhance safety for individuals with vision loss.

This approach has helped to facilitate a better understanding of community needs and significant improvements in public safety and health services delivery, reductions in municipal liabilities, and more effective use of budgetary resources in the community.

For example, the CGC recently worked with the City and the Canadian National Institute for the Blind (CNIB) to determine the best locations for five new audible pedestrian signals. The devices are expected to enhance safety for individuals with vision loss when crossing at signalized intersections. Traditionally, the

City would spread installations evenly across its six wards. Using geographic analysis, the CGC compiled several datasets including the postal codes of CNIB clients, facilities they frequent, bus stop locations, automotive collisions involving pedestrians, street speed limits, traffic volume on each street, and crossing widths for each intersection in the city. The features were then weighted against each other to build a suitability grid, and a map was produced illustrating priority intersections that needed audible crosswalks. It was found that areas where the CNIB conducts its training were the same locations the model determined to be the highest-risk intersections. With this information, the city can allocate its budget and resources where it will provide the greatest benefit to the community.

The CGC has expanded its GIS expertise to the health and human services sector. It has been involved in various projects including enhancing the delivery of diabetes services across Northern Ontario, analyzing emergency



Through data sharing, Sault Ste. Marie's water infrastructure, managed by PUC Inc., and wastewater infrastructure, managed by the City, can be viewed by both organizations' engineering departments in one map. This supports the coordinated and effective planning of projects.

room and alternate level of care (ER-ALC) patterns in the Waterloo Wellington region, reporting on the spread of *C. difficile* at Sault Area Hospital, and developing a vulnerable persons registry within Sault Ste. Marie. It has also collaborated with ESRI Canada, the Northern Ontario Heritage Fund Corporation and Algoma University to expand health care technology research in the district.

Now in its tenth year, the SSMIC continues

to help organizations in Sault Ste. Marie to leverage technology and share information to reduce costs, optimize workflows, capitalize on opportunities and enhance decision making. In a comparative study of GIS spending against 10 other cities of similar size in Ontario, the City found that its spending was half that of other cities while delivering significantly more GIS services and results. It's multi-enterprise system is considered one of Canada's most comprehensive GIS and serves as an excellent example of civic cooperation and partnership. The centre is working with other cities and companies to facilitate knowledge transfer and replicate its effective Community Information Utility model in other municipalities throughout Ontario.

Vair adds, "Over the past 10 years, ESRI GIS has played a key role in improving municipal and utility operations and enhancing public services in Sault Ste. Marie. It has provided a stable platform for increasing collaboration within the district to build safer, healthier and more prosperous communities." ■