

# City of Moncton Operates as an *Intelligent Community*



With a population of 124,055, Greater Moncton is the largest census metropolitan area in New Brunswick. It offers a thriving cultural scene and was recently voted one of the Top Seven Intelligent Communities of 2009 by the International Intelligent Community Forum (ICF). This dynamic metropolis relies heavily on a six-person GIS team to perform a multitude of daily municipal and regional operations. To meet competing demands and offer superior service to a wide range of clients, Moncton's GIS team integrates full-colour, aerial imagery with ESRI technology.

In 2008, Moncton made the switch from analog imagery to a full-colour digital solution with an aim to improve data quality while minimizing costs and turnaround time. First Base Solutions was requisitioned to produce aerial photos of the city, along with the neighbouring City of Dieppe and the Town of Riverview. An area totaling 963 square kilometres was captured in May and the images were leveraged by city staff within three months. They were made widely available through lightweight data-viewing applications and also provided as a service to both Dieppe and Riverview.

To fully utilize the power of this imagery, the city manages a GPS reference station that has been federally surveyed and is a recognized New Brunswick Active Control Station that also provides regional services. GIS field crews are equipped with TabletPCs that contain ArcInfo's editing capabilities and an aerial image backdrop so that city workers can easily identify

their surroundings and locate changed features. Asset data such as curbs, sidewalks, hydrants, manholes and terrain are collected in 3D, layered over the imagery and quickly updated so that information contained within the geodatabase is always current with a high level of spatial accuracy.

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**Jean-Guy Leger, City of Moncton**

The full-colour, high resolution imagery provides a snapshot of the city that improves the safety of Moncton residents. City planners can analyze where local fire stations should be built to minimize response times, and the imagery also supports the management of regional civic addresses to ensure that emergency responders get to the right location. Police vehicles equipped with GPS units can be viewed in the emergency dispatch centre with overlaid GIS information, which helps dispatchers make quick, informed decisions.

The Public Works and Building Inspection departments also take advantage of the imagery to get a bird's eye view of backyards and hard to

reach areas - something that was not possible prior to integrating imagery with GIS. This has significantly increased operational efficiency as field crews can now easily assess drainage issues and identify new construction. By comparing and contrasting imagery over a period of time, building inspectors can determine environmental changes, such as illegal tree removal and non-compliant activities.

Capital construction projects have benefited from increased clarity as the imagery provides an effective backdrop for CAD drawings. Engineers and recreation and parks officials now have access to a new level of detail and can visualize important assets such as streets, sidewalks, manholes, flower beds, trees, trails and park details in order to make more informed decisions.

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As the fastest growing city in Eastern Canada, Moncton relies on the high-resolution aerial imagery to facilitate successful land development projects. When a new development is being planned, stakeholders can refer to the photos to gain a comprehensive view of a selected site and its surrounding area, which cuts down on costly site visits. During the planning and de-

sign phases, engineers utilize the imagery to determine relationships between the project, environmentally sensitive areas and landscape or topography. The photos are also presented to developers both locally and abroad to provide a visual context for potential projects.

“The integration of imagery and GIS means that data can be easily understood by everyone from concert promoters to local entrepreneurs,” said Jean-Guy Leger. “It enables our department to serve as information organizers and distributors so that our clients only need to focus on their business, allowing them to get the answers they need quickly and accurately.”

The City of Moncton recently signed ESRI’s Small Local Government Enterprise License Agreement (ELA) that will provide a cost-effective implementation of enterprise GIS through ArcGIS Server. The City plans to leverage the ELA to make imagery and data available online through web applications built for clients such as municipal departments, land developers and engineers as well as the general public. The web applications will include custom tools to let users interact, provide feedback and even change assets when authorized. Making the information available over the web



A full-colour, high resolution aerial photo of downtown Moncton. The imagery is tightly integrated with ESRI technology so that the city’s GIS department can effectively process thousands of requests.

will streamline processes by creating a central location for stakeholders to share information, collaborate on proposals, strategies and new ideas. For example, a land developer will be able to access all of the information required to support a subdivision development.

The city is also in search of an even quicker way to access up-to-the-minute imagery during emergency situations, such as a flood. The GIS department is currently investigating the ArcGIS Server Image Extension as a possible solution as it works directly with source data and eliminates the need to preprocess imagery. Images can be served on-the-fly as requested, saving time and providing instant access to critical information in urgent situations. As part of a commitment to continuous improvement, this Intelligent City will also develop a 3D City by extracting digital facades from existing imagery to generate 3D structures. ■