

# Web-Based GIS Innovation Wins Accolades for Hamilton

By Stephanie Schappert

Web GIS is an important spatial data and application delivery channel. Its advantages include widespread usability, rapid application deployments, familiar browsing environment, ease of use and standardization. The City of Hamilton implemented a Web-based GIS portal and database to effectively manage its resources at [www.map.hamilton.ca](http://www.map.hamilton.ca). It was created in 1998 and publicly launched in February 2003.

This GIS innovation has proved to be both cost- and time-effective for Hamilton. It is limited only by imagination and creativity!

Hamilton has won several awards for its site. The City won the silver medal in URISA Ontario Chapter's Best Web-GIS Internet Application competition at Be Spatial 2003 in February. It also won the Gold Award at Intergraph's GeoSpatial World 2003 conference for the best Web GIS Internet presentation.

Hamilton's innovation was created using two Intergraph products, GeoMedia WebMap and GeoMedia Web Publisher. Intergraph Canada was also hired to assist internal staff with the development. Funding for the site came from Hamilton's Information Technology Services Division, the Economic Development Department and some federal government grant money.

## Background

The GIS Services division of the Corporate Services Department of the City of Hamilton consists of seven staff members: the manager of GIS Services, two GIS coordinators, two GIS analysts, and two GIS technologists. A number of staff in other departments are also dedicated to GIS and mapping activities.

In the past, Hamilton had to create its Web site from start to finish, with constraints in each step of the process. It was difficult to change information on the Web site and update information and maps once they were in place. It was also difficult to configure the site to certain specifications. A lot of time and money was needed to create a site that, in the end, staff were unable to change or configure properly.

In 1989, Hamilton and Intergraph teamed up to create the City's first landbase and application environment. Hamilton eventually upgraded to the GeoMedia suite of products. Al Little, Hamilton's manager of GIS services, says GeoMedia was chosen because the City had a positive working relationship with Intergraph, and GeoMedia offered the potential for storing spatial data as a single unified record database in a non-proprietary, industry-standard database (Oracle).

Furthermore, whereas the earlier versions of Hamilton's Web-GIS required a significant amount of programming

skills, the Web publishing tools employed today make it relatively easy to build, deploy and maintain a Web-GIS application. Technological advances in processing power and bandwidth availability also played an important role in bringing this channel to life.

## Benefits

The Web-GIS portal provided Hamilton with the opportunity to create a database and mapping portal to meet the needs of its citizens and tourists. GeoMedia has enabled the City to store geospatial data in one database, instead of several databases, saving time and money. Hamilton has been able to redistribute its costs to different departments, with a fair split of the costs among them.

This delivery channel permits widespread viewing and use of Hamilton geospatial data by internal staff, business and residents, and potential developers and investors from around the world. The ability to deploy these services without having to visit a user's desktop physically is a major benefit. Data is more current, and more consistent compared with the variety of standalone, redundant databases that existed in the past.

The Web-GIS portal contains several static online maps that users can view and print at their convenience. Most of these maps are stored as PDF files.

They include topographic maps, thematic maps and aerial photographs. There is a link to Adobe Acrobat, so readers can download software to view the maps if necessary.

The portal also includes interactive mapping tools such as zoom in, zoom out, zoom area, pan and print. These tools enable the user to select the area that he/she wants to view and to print. The user also needs to download Active CGM, which helps to properly view the maps. The author tried it on her computer and found it easy and effective.

The portal was designed to attract investment and to provide assistance in locating existing and potential businesses. For example, it can locate the ideal site for a new shopping mall, fast food restaurant, or men's clothing store. Viewers can also link into real estate listings and city-owned properties.

In general, Hamilton receives many positive comments from citizens regarding the Web-GIS portal. Nevertheless, "No matter how hard you try to generate good documentation and help files, many users do not want to read it," Little says.

He says the City realizes that most users are not GIS professionals, so is attempting to do a better job of making tasks more simple and intuitive.

### Future Applications

In the near future, Economic

Development will have a site selection tool on the Web that will enable developers around the world to search Hamilton for available properties that could meet their requirements. An integrated Business Directory will permit these investors to investigate possible competition, or identify a supply chain. Demographic data will permit analysis of potential customers and markets.

"As oddly as it sounds, future directions will also be away from the central GIS portal in some cases," Little says. "We would like to see more tightly integrated spatial services extending existing business functions in their own environments."

Organization of services around business and ratepayer "life events" will increase, as the central portal idea

decreases. This model, however, will continue to be the virtual organization for presentation of GIS data. Physically, data warehousing concepts will still be employed to maintain a cost-effective and standardized spatial data repository.

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## Richmond Hill Implements Interactive Mapping Feature

The Town of Richmond Hill has implemented a new interactive mapping feature on its Web site <http://www.richmondhill.ca/maps/maps.asp> permitting viewers to navigate roads, geographical features and services by clicking and zooming in on electronic maps.

Launch of the service was announced September 3 by Orion Technology Inc., [www.orion-gis.com](http://www.orion-gis.com), supplier of the mapping technology, called RHexplorer, which uses Orion's OnPoint product to serve map-based products and services to the public over the Internet.

Jury Konga, manager of GIS services for Richmond Hill, said, "OnPoint has provided the Town with an excellent and cost-effective tool to achieve a significant business need — efficient and user friendly access to land-related data."