

10

GEOMATICS BUSINESS SOLUTIONS - ANNUAL REPORT 2005

The Planning and Economic Development Committee recommends the adoption of the recommendation contained in the following report January 30, 2006, from the Commissioner of Planning and Development Services:

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

To inform Committee and Council on progress in the development of a geospatial information infrastructure, and of GIS business solutions developed to assist in the efficient delivery of York Region operations and growth management.

3. BACKGROUND

The Geomatics Branch develops business solutions, implements applications and re-engineers business processes to incorporate geographic information and create efficiencies throughout the corporation. GIS applications allow users to view, edit, and store geographic information as part of their business processes. The geospatial infrastructure to support business applications is responsive to the needs of the corporation, encouraging data-sharing and reducing information silos. With the strategic goal of providing access to managed geospatial information, the geospatial infrastructure includes the development of a self-service environment. The Geomatics Branch supports over 100 power-users using desktop GIS applications in departments throughout the corporation. Other users access the York Region GIS through YorkExplorer, the Region's internet mapping service.

4. ANALYSIS AND OPTIONS

4.1 2005 Highlights

4.1.1 YorkExplorer Internet Mapping

YorkExplorer is an internet mapping service delivering interactive geographic information and map products to staff, partners, and the public. YorkExplorer is the tool of choice for many to access geographic information. YorkExplorer is used heavily by

the public and regional staff: on average in 2005 users interacted with these online maps 67.3 times per hour.

In 2005, work under a grant application with the Federal GeoConnections program for \$100,000 was concluded (see Advancing YorkExplorer Through GeoConnections Funding, Planning & Economic Development Committee, March 3, 2004; also see Advancing YorkExplorer Final Report, Planning & Economic Development Committee, June 15, 2005). Web map services were added as part of this scope of work. Web map services allow a GIS user to incorporate York Region map images into their own application through the internet. These were accessed 4,050 times in 2005.

Following completion of the Advancing YorkExplorer project, additional improvements were made to the website. These include changing the coding from the ColdFusion application language to JSP (Java Server Pages), for more efficient site maintenance, and enables an easier integration with information stored in the Spatial Data Warehouse. When this integration is concluded in 2006, the YorkExplorer internet mapping will be directly accessing the Region's most recent published spatial data, and duplicated data will be eliminated.

Additional interactive views were added to YorkAtlas to aid specific business units. These include:

- A transit planning view, that allows overlays of scanned plans of subdivisions and regional land-use layers with Viva and YRT transit routes and transit stops (password protected for RapidCo and YRTP).
- A SCADA view that shows how SCADA lines connect to the water and waste water systems (password protected for transportation and works staff).
- An updated and improved vacant employment land view for planning economic development purposes (publicly accessible).
- Additionally several regional infrastructure views were rationalized to improve data maintenance and updating (publicly accessible and password protected views).

4.1.2 Improved GIS Hardware and Software Environment

The Operational Data Store and Spatial Data Warehouse servers were brought into production service early in 2005, and data was added during 2005. Regional staff were able to access spatial data through the Spatial Data Warehouse starting in November 2005, with significantly improved performance. These geospatial servers enabled spatial information to be created, edited and accessed securely and reliably, and represent a significant step in the evolution of the York Region GIS infrastructure.

Detailed plans for upgrading the Regions GIS software (to version 9.1) without service interruptions were developed, in order to better support editing of geodatabases in the

ArcSDE environment, and leverage new functionality in support of vehicle and utility routing. The development environments were upgraded to ESRI ArcSDE 9.1, and an automated deployment module for the desktop GIS application was updated to enable deployment of ArcView 9.1 to over a hundred desktops in 2006. Production software will be updated by March 31st 2006.

New GIS software to extend map-making functionality was installed in 2005 included mapbook software that can be used to generate paginated and indexed mapbooks and map strips of linear features such as hydro corridors, complete with indexes. To date, this software has been used to create:

- Regional mapbook for EMS use.
- Hydro corridor reservation mapping (for planning department submission to MMAH).
- Annotated parcel mapping along arterial roads (for RapidCo and realty services)
- Speedzone bylaw schedule.

Additionally, ArcReader software was piloted with the Water and Wastewater Branch to determine its suitability as a mapping distribution tool capable of being used for read-only office based and field-based mapping.

A Geomatics FTP site was established to facilitate the efficient transfer of large spatial data files between the Region, local municipalities and consultants working on behalf of the Region.

4.1.3 Business Process Re-engineering

In 2005, business solutions were developed and implemented for internal clients to create more efficient and effective business processes. Such applications include:

- YorkExplorer interactive mapping was integrated into public websites for the York Durham Sewer System 16th trunk sewer and 19th Avenue interceptor, enabling the public to locate themselves in relation to the project impacted area.
- Land Securement website improvements (multi-agency collaboration tool).
- New mapping components for the Growth and Development Information Management System – including a process for scanning and geo-referencing maps so that they are correctly positioned (to be deployed in 2006).
- Commercial Pollutant tracking application (to be completed in 2006).
- Asset management applications including transit facility and street tree GPS applications were tested and supported in the first year of field operations.
- An automated spatial data request form was added to the intranet to improve service to internal clients, and improve GIS project and product tracking.

The Geomatics Branch continues to support commercial applications that have GIS components to them (such as York Region Transit's Trapeze and Wheeltrans scheduling and routing software applications, the Police Services' Versaterm dispatch application, and EMS's Grey Island Automated Vehicle Location application), as well as the custom desktop and GPS applications (such as the transit facility, street tree and West Nile Virus GPS applications) developed internally to assist regional business operations.

4.2 2006 Directions

In 2006 the business solutions group will focus on completing the GIS software upgrade to support editing geodatabases in the ArcSDE environment, and complete the integration of the YorkExplorer website with ArcSDE data sources, enabling all GIS users, both inside and outside the corporation, access to the latest published data. This is part of an overall strategy to continually improve the self-service environment for GIS users across the corporation.

Data automation will be another focus during 2006. Routine data exports to support third-party applications that use GIS, such as YRT's Trapeze bus routing system will be automated. Similarly routine data exports to support YorkInfo Partners that use York Region spatial data will be automated, saving time and improving export reliability.

The integration of GIS into the Region's business processes will continue in 2006. The Region's speedzone bylaw schedule, for example, will be integrated with the new road network geodatabase, improving the security and accessibility of the speedzone bylaw information. Water and wastewater Branch spatial data will be incorporated in geodatabase format in the Operational Data Store.

New tools are evaluated as they become available. GoogleEarth and similar internet-based GIS applications will be evaluated to determine if there is any opportunity to integrate them into the Region's business activities.

5. FINANCIAL IMPLICATIONS

Development of YorkExplorer was subsidized through a grant from the federal GeoConnections Program of \$100,000 in 2004-2005.

Negotiated service agreements and partnerships support many of the business solution services provided to internal clients.

6. LOCAL MUNICIPAL IMPACT

Local municipalities and the public use information made available through YorkExplorer. Through the YorkInfo Partnership, local municipalities and conservation authorities are made aware of technical infrastructure the Region develops. An

application for funding led by York Region in co-operation with local municipalities was made to the federal GeoConnections program in 2005, to develop internet mapping infrastructure to support growth management, however the application was unsuccessful.

7. CONCLUSION

The Geomatics Branch continues to integrate GIS into business processes across the corporation, providing needed information for regional operations, planning, and the management of growth. York Region GIS users now access published spatial data through a Spatial Data Warehouse that is secure and robust. The YorkExplorer internet mapping website offers more services, and is heavily used by regional staff and the public.

The Senior Management Group has reviewed this report.