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GEOMATICS BUSINESS SOLUTIONS - ANNUAL REPORT 2007

The Planning and Economic Development Committee recommends the following:

1. **The presentation by Nancy Prout, Director, Geomatics Branch and Debra Kelloway, Manager, Analytics and Applied Mapping, be received; and**
2. **The recommendation contained in the following report dated November 27, 2007, from the Commissioner of Planning and Development Services, be adopted:**

1. **RECOMMENDATION**

It is recommended that this report be received for information.

2. **PURPOSE**

To inform Committee and Council on the status of York Region's 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 in the corporation's operations. GIS applications allow users to use and analyze information with respect to location 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 a self-service environment used by staff throughout the corporation, as well as by staff in local governmental agencies and the public. The Geomatics Branch supports over 150 staff using desktop GIS applications in departments throughout the corporation. Other staff and the public, access the York Region GIS through YorkExplorer, the Region's suite of internet mapping services, which saw 150,000 visits in 2007.

4. ANALYSIS AND OPTIONS

4.1 2007 Highlights

4.1.1 YorkExplorer Internet Mapping Usage Growing

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 about York Region. YorkExplorer is used heavily by the public and regional staff, and site usage is continually increasing. For example, usage grew by 33% overall from 2006 to 2007;

- 150,000 visits to the site were made, with the average visit lasting longer than 10 minutes up from approximately 114,000 visits in 2006
- Over 1,400 visits/ month from internal users (York Region staff), up from 900
- 9,000 external users/month visited the YorkExplorer website, up from 7,850
- 13,500 published map products downloaded/ month, up from 6750
- 3,000 downloads/ month of the Take a Hike Index Map, the most popular download.

Web map services allow a GIS user to incorporate York Region map images into their own application through the internet. These were accessed approximately 8,000 times in 2007, up from 4,000 times in 2005.

Additional interactive views were added to YorkExplorer in 2007. These include:

- An *easy map view*, that has simplified map creation that mimic those found on commercial sites and enables users to send maps to other users for collaboration and communication (password protected for transportation and works staff).
- A *water and wastewater view*, that shows the recently developed asset management database.
- Additionally several existing views were improved with the addition of new data layers to improve context.

4.1.2 Regional Planning Atlas Responds to Places to Grow

In 2007 the Region was awarded funding from the federal GeoConnections Program for a project to develop a sustainable development regional atlas. The project runs from February 2007 to March 2008, and includes local municipalities and conservation authorities as participants. The project will deliver a suite of internet-based geospatial views and applications that will assist planners at York Region, local municipalities and conservation authorities in responding to the growth management provisions of the provincial Places to Grow initiative (see PEDC 2007:3(3)).

This project funding is enabling the Region's implementation of the next generation of internet-based mapping technology, which will include processing of complex geospatial queries over the internet. This capability will significantly increase the level of functionality, to the point where projects that previously required desk-top GIS applications can be done over the internet. The Region has engaged Latitude Geographics

Group Ltd., to develop the initial planning views and applications. The software and system architecture that the project introduces can be used for similar projects in the future.

4.1.3 Improved GIS Hardware and Software Helps GIS Data Maintenance

The following GIS software was installed in 2007 to improve the efficiency of data creation, geospatial analysis, and internet maintenance:

- Automated editing tools were introduced to expedite editing of roads, parcels and address points. These tools provide additional quality assurance in maintaining these foundational spatial datasets.
- ArcGIS Server and GeoCortex Essentials software to enable new internet geo-processing capabilities as part of the regional atlas project. Eventually, this software will replace ArcIMS and GeoCortex IMF software that support the current YorkExplorer suite of internet mapping applications. The new software makes it easier to create and maintain internet mapping services, and more closely aligns on-line and off-line mapping products.
- Software to enable 3D GIS.

4.1.4 Business Process Re-engineering Improves Regional Operations

Asset Management

The Geomatics Branch is actively supporting asset management initiatives in all Transportation Department and Environmental Services Department branches, through assisting in identifying technology and processes that will meet Regional requirements and through vendor meetings, assistance in RFI and RFQ's.

Planning and Sustainable Development

In the Planning and Development Services Department, the Geomatics Branch is helping support growth management and sustainable development activities by leading the regional atlas project. This project will provide new planning tools that automate density and intensification calculations, and enable monitoring of environmental change, and provide planners with a view of all the planning restrictions that relate to any parcel.

The Geomatics Branch continues to support commercial applications used by emergency services and Transportation and Works that have GIS components to them. Supported systems include:

- York Region Transit's Trapeze scheduling and routing software applications
- Transit's Transview scheduling software
- INIT Automated Vehicle Location (AVL) tracking for VIVA buses
- Police Services' Versaterm dispatch application
- EMS's Grey Island AVL application
- Marvlis Ambulance positioning application
- e-Drawings
- Traffic Engineering System

- Road patrol tracking application Mr. Compliance.

The Branch has worked to improve the efficiency of data provision to these applications using automated data transformations, and has created application support contracts to ensure timely maintenance and support for these applications. Geomatics also supports and upgrades as necessary the custom desktop and GPS applications (such as the transit facility, street light, street tree and West Nile Virus GPS applications) developed internally to assist regional business operations.

The Geomatics Branch hosted an AVL workshop to look for potential efficiencies with respect to tracking vehicles in the Regional fleet. Participants from Police, EMS, Transit and Roads reviewed current AVL implementations.

4.2 2008 Directions

In 2008, the Business Solutions Section will focus on upgrading ArcGIS software to the 9.2 version to enable users to take advantage of new geospatial processing functionality, and enable additional functionality to web-based GIS. This is part of an overall strategy to continually improve the self-service environment for GIS users across the corporation.

Building on a comprehensive regional address point database created in 2006-2007, the Geomatics Branch will create internet-based modules that can be incorporated into other applications to ensure that address information is captured correctly. Additionally a facilitated data delivery application will automate the provision of spatial data to consultants for environmental assessment processes.

We will continue co-ordination of AVL to seek efficiencies in how AVL is implemented in the Regional fleet, and minimize the effort required when AVL is introduced to other business units.

The 3D GIS program initiated in 2006 will continue to be developed. (see Urban Visualization Modelling, PEDC report, August 23 2006)

The integration of GIS into the Region's business processes will continue in 2007. Asset management remains a key area for further integration as the Transportation Department and Environmental Services Department branches move toward implementation of asset management systems, and the Geomatics Branch will actively participate in corporate initiatives aimed at improving asset management practices.

5. FINANCIAL IMPLICATIONS

Negotiated service agreements and partnerships support many of the business solution services provided to internal clients. GeoConnections matching funding for the regional

planning atlas enabled earlier introduction of advanced internet mapping technology than would otherwise have been possible (see PEDC 2007:3(3)).

6. LOCAL MUNICIPAL IMPACT

Local municipalities and the public use information made available through the YorkExplorer website. Through the YorkInfo Partnership, local municipalities and conservation authorities share technical innovations the Region develops. The regional planning atlas project is being completed in collaboration with GIS and planning staff from participating local municipalities, and planning staff in these municipalities will be trained and have access to the resulting views and applications.

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 access published spatial data through a Spatial Data Warehouse that is secure and robust. The YorkExplorer internet mapping website is heavily used by regional staff and the public. Next year the Geomatics Branch will continue to improve the self-service environment for GIS users by upgrading software and increasing the GIS functionality available to support regional operations.

For further information about this report, please contact Andrew Satterthwaite, Manager, Business Solutions at (905) 830-4444 ext. 1546, or andrew.satterthwaite@york.ca

The Senior Management Group has reviewed this report.