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GEOMATICS BUSINESS SOLUTIONS - ANNUAL REPORT 2004

The Planning and Economic Development Committee recommends the adoption of the recommendation contained in the following report, February 3, 2005, from the Commissioner of Planning and Development Services:

1. RECOMMENDATION

It is recommended that:

1. This report be received for information.

2. PURPOSE

To inform Committee and Council on the progress in development of a geospatial information infrastructure with applications and tools to serve York Region through business solutions and business process engineering.

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. These 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 power-users and a self-service environment.

The Geomatics Branch supports over 100 power-users in departments throughout the corporation, and hundreds of internal users and thousands of external users through YorkExplorer, the Region's internet mapping service.

4. ANALYSIS AND OPTIONS

4.1 2004 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 had over 18,000 site visits in 2004 and over 70,000 maps were downloaded in the year.

Following a successful grant application with the Federal GeoConnections program for \$100,000 (see Advancing YorkExplorer Through GeoConnections Funding, Planning & Economic Development Committee, March 3, 2004), work on the YorkExplorer has resulted in better site navigation and help documentation, a searchable on-line catalogue of the Region's geospatial data holdings, an improved mapping application, a distance measurement tool, and creation of web map services allowing partner organizations to access live map information in a controlled way.

As part of this initiative, comprehensive system documentation and training materials were created. These improvements serve both internal and external users of York Region and builds the foundation of an internet infrastructure to support intelligent, on-demand exchange of geographic information to meet user needs. This infrastructure supports Regional participation in broader internet mapping initiatives in concert with other jurisdictions at the local, provincial and national levels to realize efficiencies in the exchange of geographic information.

4.1.2 Global Positioning Systems

Demand for using geospatial technologies in the field to support various business activities is increasing and advantages are being realized. Global Positioning Systems (GPS) are being used to document Regional physical assets in the field as a step toward better maintenance and management. GPS programs are also used in support of the Health Department's West Nile Virus program. Automated Vehicle Location (AVL) systems are already being used by several departments in the Region, including Health, Police, Transportation and Works, and Transit.

Asset management projects for regional trees and transit facilities were initiated in 2004 with the Transportation and Works Department. Upon engineering the business processes, asset collection was automated with the development of mobile applications on hand-held GPS devices. These applications will be used to collect information about the location and condition (e.g. age, dimension, type) of regional assets while in the field, and then this information was synchronized into master databases on return to the office. The result is better managed information and a methodology of field data collection that will be applied to other assets.

4.1.3 Improved GIS Hardware and Software Environment

Coordinated through the Information and Technology Services Departments (ITS), the Region's GIS hardware environment was redesigned and upgraded to improve reliability and performance in order to support client demands. The hardware environment is scaled to support client requirements for the next 3 years and is scaleable for the longer term.

Spatial database management software (ArcSDE) was installed and configured on the database server, to enable data migration to a structured database format. In addition to

improved capacity, performance and reliability, the same data will be used by all clients thereby creating consistency and efficiency.

Over 100 regional staff who use desktop GIS on a regular basis received an upgrade customized to create efficiencies in accessing the Region's geographic information.

4.1.4 Business Process Re-engineering

In 2004, business solutions were developed and implemented for internal clients to create more efficient and effective business processes. Such applications developed through consultation, collaboration and establishment of standards, models, databases and documentation include:

- Field map reporting of vertical benchmarks for field surveying of design & construction projects
- Mobile asset management for capturing information about regional street trees
- Automated mapping of motor vehicle collisions for the analysis and creation of reports to management and council
- Map-enabled roads inventory management system to improve understanding of road assets and corresponding maintenance operations
- Yard-waste drop-off verification tool
- Property notification

Geographic data management practices and requirements were designed for:

- The transportation systems of YRTP and YRT
- The hydraulic modelling of the wastewater system in York Region, and
- The significant woodlands study

Business process modelling, business requirements and system design were carried out for:

- West Nile Virus program for the Health Department
- Growth and Development Information Management System for the Planning and Transportation & Works departments

4.2 2005 Directions

Geospatial infrastructure comprises technology, tools, business solutions, and information integral to the Region's businesses. Business solutions deliver on the need for efficiencies and information for regional operations, planning, and the management of growth. A strategy is in place to improve self-service, support client applications and drive business process re-engineering initiatives.

Self-service is a key part of the corporate geographic information infrastructure to achieve operational efficiencies. This includes continuous enhancement of the self-service environment through YorkExplorer that provides efficient access to geographic information.

Asset management will continue to be important initiatives led by internal clients. In cooperation with the ITS, scheduled work includes finishing the field data collection projects on street trees and transit facilities. Integration, convergence, best-practices and geographic decision support are the guiding goals that geographic information and solutions critically support.

In the context of growth management, continued involvement in the analysis of business processes and information flow across business units in several departments will be reviewed toward automating these processes. Additional components to the Growth and Development Information Management System are proposed in the 2005 budget and work plan.

There has been significant growth in the number of business applications that require geographic information and business solution services. In 2003, there were 2 such business applications. In 2004 there are over 12 business applications. Most of these applications require geographic information to work, with the balance requiring geographic information to be effective. The challenge is to lead the evolution of these applications as an integrated facet of an overall geographic information architecture. Open standards and specifications, along with vision, leadership and cooperation, are essential.

5. FINANCIAL IMPLICATIONS

Development of YorkExplorer was subsidized through a grant from the federal GeoConnections Program of \$100,000 in 2004. This continues until March 31st, 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. Improvements to the YorkExplorer site will also promote efficient exchange of geographic information between the Region and local municipalities.

Through the YorkInfo Partnership, local municipalities are made aware of technical infrastructure that the Region develops, and we look toward sharing applications that we develop with the local municipalities. As an example, the Region is developing a street tree GPS asset management application, and Richmond Hill has expressed an interest in adapting this application for its heritage trees program.

7. CONCLUSION

Significant success has been achieved to meet the challenges faced by York Region through the establishment of a geospatial information infrastructure including development of an enterprise geospatial architecture, creating access to geographic information, supporting client applications, and developing solutions.

During 2005, geospatial technologies and solutions that benefit the Region's operations and promote productivity and efficiency will be integrated through business process re-engineering to create efficiencies and leverage the value of geographic information in decision making.

The Senior Management Group has reviewed this report.