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### **ANALYTICS AND APPLIED MAPPING 2007 ANNUAL REPORT**

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 28, 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**

The Analytics and Applied Mapping section of the Geomatics Branch provides analysis, high quality mapping, training and services to support the business needs of Regional Departments, the York Regional Police, YorkInfo Partners, and the public. This report highlights key activities, products and services delivered in 2007.

#### **3. BACKGROUND**

In addition to creating and maintaining a geospatial infrastructure, technology, tools, and management of information, Geomatics analyzes complex spatial relationships, develops quality map products and provides value-added services such as training and support.

Geographic Information Systems (GIS) information and technology has become an integral part of the way we do business in York Region. Introducing change management through the use of GIS and the delivery of effective mapping and analysis, Geomatics staff work with clients in a consultative approach to understand business requirements and provide GIS solutions. The increasing complexity and sophistication of requests received by Geomatics demonstrates the understanding and adoption of GIS technology into the corporation's business processes. Accessible information, technology combined with an extensive training program promote a self service environment, increasing the use of GIS in the day to day activities of Regional staff.

#### 4. ANALYSIS AND OPTIONS

##### 4.1 Geomatics Value-Added Products and Services Delivered in 2007

Geomatics responded to hundreds of requests for spatial analysis, and quality map products from the corporation, partners, private sector and the public. Efficiency, quality and customer service are fundamental to the delivery of these products and services. Products comprise spatial analysis, spreadsheets, project related datasets, spatial statistics, charts, and creation of hardcopy and digital maps. The time required to conduct analysis and create map products is determined by the complexity of the request and availability of information.

**Table 1**  
 Total Number of Geomatics Value Added Products Delivered in 2007

<b>Client Category</b>	<b>No. Products</b>	<b>Percentage</b>
Regional Departments	573	88%
YorkInfo Partners	45	7%
External Clients	31	5%
<b>Total</b>	<b>649</b>	<b>100%</b>

**Table 2**  
 Total Number of Products Delivered to Regional Departments in 2007

<b>Internal Client Group</b>	<b>No. Products</b>	<b>Percentage</b>
Transportation and Works	142	25%
Planning and Development Services	169	29%
Health Services	66	12%
Community Services and Housing	32	6%
EMS	6	1%
Emergency Management	27	5%
Finance	22	4%
Police	37	6%
Corporate Services	31	5%
York Region Transit (YRT)	19	3%
Council	10	2%
Office of the Chief Administrative Officer	12	2%
<b>Total</b>	<b>573</b>	<b>100%</b>

##### 4.2 Enhanced Service Delivery

A user friendly self service environment for GIS users within the corporation has remained a major focus aimed at enhancing the delivery of products and services.

#### **4.2.1 Self-Service Bureau**

The Self-Service Bureau is a point of access for GIS users across the corporation to geospatial information, standard symbology, published maps and GIS documentation. The Bureau allows GIS users to efficiently create quality GIS maps, view and download maps created by Geomatics from a digital MapLibrary and use reference materials from a growing Resource Library. In late 2006, a user focus group was conducted with GIS users to solicit their recommendations for changes to the Bureau that would enhance use.

Enhancements include:

- MapLibrary contains over 230 digital maps and is continuously updated
- 48 map templates available to staff with 18 new poster size municipal map templates added
- 145 standardized map layers with standardized symbology available to staff with 15 new map layers added
- Resource library updated annually with new GIS related reference materials

#### **4.2.2 Public Accessibility to Maps**

The public has access to a total of 150 published maps on YorkMaps that may be viewed, printed or downloaded. 44,000 maps were downloaded last year with an average of 122 maps downloaded each day. The most popular map is the *Take a Hike Trail Guide*.

#### **4.3 Analytics, Mapping and Application Development**

To ensure customer service and keep up with rapid change, products and applications that require regular maintenance or updates on a quarterly, bi-annual or annual basis are scheduled into a maintenance cycle. This approach improves work planning and ensures that clients receive their products when they are needed.

Key projects that required complex analysis, maps, and custom application development are highlighted to illustrate the diversity of GIS and its application across the Region.

##### **Subway Expansion**

In support of the continuing Spadina Subway Expansion project into the Vaughan Corporate Centre, Geomatics supplied current analysis and mapping as alignments, estimates, and proposals were updated. New maps focused on future road alignments, employment and population, building modeling, and official plan amendments were added. 3D visualization, planning, and financial analysis were based on these products.

##### **Access to Population Information**

Population and Dwelling Densities from 2006 Census data has been mapped according to Census Tracts, Dissemination Areas and Traffic Zones. To further assist with service planning and decision making, a population analysis model was developed to support automated spatial analysis to obtain population figures for an identified service area.

### **York Region Delivery Route Analysis for Corporate Services**

Shortest delivery routes can be identified quickly with GIS technology. Geomatics helped Corporate Services to analyze, plan and visualize several routing scenarios for efficient delivery of printed materials to locations across the Region.

### **York Region Owned Network Fibre Optics**

Information Services asset allocation decision making was aided by creating map which showed existing and proposed segments of Local Area Network fibre owned by the Region placing emphasis on regional sites that would join regional network with utilization of the proposed fibre.

### **Health Services Healthy Beginnings Pilot Project Site Selection**

The Healthy Beginnings pilot project spearheaded by Health Services, utilized Geomatics Services in the site selection process. Analysis of demographic information, proximity to transit and community based services was conducted and communicated in maps to assist in the decision making process.

### **Analysis and Mapping of Tourism Reliant Businesses**

Geomatics performed a prototype analysis of businesses that are within a two kilometre radius of tourist attractions in the City of Vaughan. Geomatics coordinated efforts with the Long Range and Strategic Planning and Tourism staff to identify and map such businesses that could potentially be open under the Retail Business Holidays Act. The analysis and map products will assist the York Regional Council in decision making while determining exemptions from the Act.

## **4.4 Emergency Management**

York Region Geomatics provides geospatial information, technology, products and services to support the Region's Emergency Management activities and is a member of the Regional Emergency Operations Centre team. As emergencies are typically location based, GIS plays an essential role during all five phases of emergency management.

### **Operation Rising Waters**

GIS was essential to this year's regional emergency exercise *Operation Rising Waters*. Geomatics worked with the Lake Simcoe Region Conservation Authority to develop flood mapping used planning the exercise and also as reference material during the exercise. Geomatics also supported the Regional Emergency Operations Centre with geospatial technology.

## **4.5 GIS Training and Technology Transfer**

The Geomatics training curriculum is offered through the corporate learning program. 8 introductory to advanced level courses offers convenient and cost-effective access to training that provides users with the knowledge and skills necessary to take full advantage of GIS technology, information, and the self-service environment. The program is delivered through a modularized training approach which promotes a flexible,

phased approach to GIS training. As corporate GIS users become more proficient with the technology, new advanced level courses are added to the curriculum.

The Geomatics training curriculum continues to be highly rated by participants.

#### **Custom GPS Course for York Regional Police**

Geomatics developed and delivered a customized Global Positioning Systems (GPS) training course to 18 York Regional Police. This course was developed to meet the specific needs of Police Services and was provided at a significantly reduced cost from other similar course alternatives.

#### **4.6 Future Directions**

GIS analysis identifies patterns, relationships, optimizes network and resource allocation, providing answers from regional geospatial information to support smarter, faster decisions. Increased application of complex geo-analytical capabilities will help regional staff make informed decisions, highlighting the potential of GIS technology.

3D models provide a unique perspective of York Region's landscape and city centres. Modelling techniques and visualization will effectively communicate current and future scenarios for regional initiatives.

New interactive quality map products that are linked to robust geospatial information will be made more accessible to regional staff and the public by using new software capabilities and simplified web view publication processes.

Geomatics self service environment enhancements will continue through the creation of updated standard templates, symbology and cartographic standards for GIS users.

### **5. FINANCIAL IMPLICATIONS**

Service Level Agreements with key client groups define product delivery and service level expectation and associated costs.

### **6. LOCAL MUNICIPAL IMPACT**

Area municipalities benefit from York Region geospatial information, technology, products and services through the YorkInfo Partnership. Various products and services are also made available to residents on many municipal websites.

### **7. CONCLUSION**

Geomatics continues to achieve a high level of customer service and satisfaction through the delivery of quality, value-added mapping products and services in a timely manner, that have become an integral part of business processes in York Region.

Training initiatives, new internet mapping views and the enhanced GIS self service framework will put the power of routine map creation and analysis in the hands of the public and regional staff.

For further information on this report, please contact Kimberly Gray, GIS Analyst, Geomatics Branch at ext. 1510 or [kimberly.gray@york.ca](mailto:kimberly.gray@york.ca).

The Senior Management Group has reviewed this report.

*(The attachment referred to in this clause is attached to this report.)*