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SUSTAINABLE DEVELOPMENT AND GROWTH MANAGEMENT INTERNET ANALYSIS AND MAPPING APPLICATIONS

The Planning and Economic Development Committee recommends the following:

- 1. The presentation by Paul Bottomley, Manager, Growth Management Economy and Information Research, Long Range and Strategic Planning, and Andrew Satterthwaite, Manager, Business Solutions, Geomatics, be received; and**
- 2. The recommendation contained in the following report dated May 29, 2008, from the Commissioner of Planning and Development Services, be adopted:**

1. RECOMMENDATION

It is recommended that:

1. The Regional Clerk forward a copy of this report to local planning staff in municipalities in York Region, Conservation Authorities, and the GeoConnections Program.

2. PURPOSE

To report back to committee and council on the successful completion of a collaborative internet mapping project designed to assist planners across York Region in analysis and decision-making for growth management and sustainable development.

3. BACKGROUND

In 2006, a needs assessment led by York Region Geomatics was undertaken with the planning departments and GIS staff in the YorkInfo Partner agencies including local municipalities and conservation authorities. The review identified the need for planning tools for analysis relating to growth management, including regulatory restrictions, density and scenario analysis. Based on these needs, York Region, in collaboration with seven local municipalities and two conservation authorities, submitted a proposal for funding from the federal GeoConnections Program in the Environment and Sustainable Development sector.

The proposal was successfully endorsed and viewed by GeoConnections to become a “flagship” project. Following approval of a report to Planning and Economic Development Committee (PEDC 2007: 3(3)), the Region signed an agreement with the federal GeoConnections Program to receive project funding up to a maximum of

\$182,000. The GeoConnections Program co-funds projects that advance the development and use of geospatial infrastructure by implementing standards-based internet mapping applications within Canada. The GeoConnections secretariat is part of Natural Resources Canada.

4. ANALYSIS AND OPTIONS

Planning Internet mapping applications completed successfully

The project was designed for iterative interaction with the partners, including progress toward standardization of definitions, density calculations and spatial data, application testing by and training of users / planners. In addition to the goal of creating tools to assist in planning and monitoring, the project was also intent on embedding GIS into business processes, enabling data sharing within and among partners for more efficient operations, and to implement a geospatial infrastructure for a connected region. Latitude Geographics Group Ltd. was contracted through an RFP process to develop the specific applications based on the planners' needs.

The project created six internet mapping views and applications to enable decision-making for planners in relation to regulatory land-use restrictions and intensification of existing urban areas.

1. Density Assessment Application
2. Development Intensification Capacity Application
3. Environmental Monitoring Application
4. Regulatory Lands View
5. Public Regulatory Lands View
6. Property Lookup View

Each application brings together planning, regulatory and spatial data from several agencies across York Region. The applications provide planners with new capabilities to calculate built density and prioritize sites for intensification potential, review regulatory restrictions and environmental changes based on up to date information provided and integrated from several agencies. This means all planners in York Region will be able to base their decisions on the same current GIS data for the first time. Over time, improved data inputs to these applications will make their results more widely applicable.

The following interactive applications were developed to enable analysis by providing quantitative results for specific geographic areas. These applications evaluate current densities, intensification potential, and environmental change, and were designed to meet reporting requirements in relation to the Places to Grow Act defined by the Ontario Ministry for Public Infrastructure Renewal.

1. Density Assessment Application :

Reports in tabular and map format are generated for user-specified areas including:

- Density calculations (gross, net and net-net Floor Space Index (FSI). Net and net-net calculations exclude greenlands and non-buildable sites.
- Current population (based on people/unit factors)
- Jobs supported (based on the regional employment survey)

2. Development Intensification Capacity Application

This application builds on the Density Assessment Application, and will aid in developing secondary plans in existing built areas, and provides calculations, reports and maps for the user-specified areas:

- Parcels as candidates for intensification are identified (e.g., under-built parcels not occupied by an existing institutional land-use or significant environmental restrictions.)
- Comparison of current density with planned or targeted FSI
- Potential additional new building floor space and number of units achievable

3. Environmental Monitoring Application

Environmental reporting through change detection will be enhanced by this application which generates calculations, reports and maps for defined neighbourhoods or in user-created polygons.

- compares environmental feature classes representing current conditions against baseline feature classes from State of Environment SOE)
- detects and quantifies environmental change

The following interactive views were developed so that all planners in the Region would have common access the most up-to-date information from the Region, local municipalities and Conservation authorities down to the parcel level. These views access several databases that were not previously in digital form or available to many of the users, and makes them easily useable in relation to their workflow. The public view enables the public to see planning restrictions in relation to individual parcels.

4. Regulatory Lands View

This view shows all the development restrictions that apply to individual parcels of land, neighbourhoods or in user-created polygons.

- Zoning codes and zoning bylaws
- Official plan designations
- Specific environmental restrictions
- Airport-related restrictions

5. Public Regulatory Lands View

This view will be accessible through the websites of any of the participating agencies. It provides a more generalized view of planning data and broad indications of restrictions, but does not show detailed data where professional planning advice is required to interpret them.

- Zoning codes and zoning bylaws
- Official plan designations
- General environmental restrictions

6. Property Lookup View

This view provides access to property information, and is based on York Region's Parcel and Address Point models. It facilitates creation of mailing labels for any area for notification of public meetings and infrastructure projects.

- Parcel information (rollnumber, address, area, landuse, owner, etc.)
- Mailing label creator

Improved Internet mapping technology

A key outcome and benefit of this project is the establishment of a sophisticated geospatial infrastructure for collaborative projects in York Region, in addition to the initial views and applications relating to land-use and sustainable development. This new core geospatial infrastructure, based on ArcGIS Server and GeoCortex Essentials substantially enhances the Region's capacity to serve highly interactive mapping applications over the internet.

At the City of Vaughan and the Town of Markham, new Web Map Services were established that represent a further evolution of the collaborative geospatial infrastructure in York Region. Another significant benefit of the technology solution for the project enabled each municipality to have its own branded view of the applications even though the application and data is hosted by the Region. For example, this means that Aurora planning staff see an Aurora page header, and the geographic extent of Aurora in each application.

Information updated by each of the participating agencies will be available to planners in other agencies, and the applications and views will foster further information sharing between York Region and its municipal partners.

This infrastructure will be used in the future to address other projects with a geospatial element that require collaboration between local municipal staff and regional staff, including in the health, transportation, infrastructure, and public safety sectors.

5. FINANCIAL IMPLICATIONS

The project was delivered within the original budget with our project partners. GeoConnections funding amounted to \$173,606, per project eligible funding rules, allocated over two fiscal years.

A requirement of the GeoConnections program is that at least 70% of their funding flows through to the private sector. The purchasing bylaw provisions were followed, with Latitude Geographics Group Ltd. being awarded a contract for developing the views and applications.

6. LOCAL MUNICIPAL IMPACT

The project involved collaboration with Town of Aurora, Town of East Gwillimbury, Town of Georgina, Town of Markham, Town of Newmarket, Town of Richmond Hill, City of Vaughan, Lake Simcoe and Region Conservation Authority and the Toronto Region Conservation Authority.

Staff from local municipalities were engaged in a user needs assessment prior to the proposals being submitted, reviewed functionality with the application developer, preparing relevant data from each organization for use in the views and applications, establishing WMS and data transfer, and in user testing and training.

Each of the participating agencies has its own branded website, so that it looks like it is that organization's application. These sites use the same services that the primary York Region site uses. The project will simplify access to land-use regulations, and enable geo-processing of planning information.

The major benefit to local municipalities is that they have access to geospatial tools for sustainable development planning that they would not otherwise be likely able to develop.

The project also provides a distributed geospatial infrastructure, and advances the geospatial capabilities and access of each participating agency. This infrastructure can be used in the future to address other projects with a geospatial element that require collaboration between local municipal staff and regional staff.

The project additionally helps fulfill strategic goals identified by the YorkInfo Partnership, to reduce duplication, improve efficiency, and to provide a parcel-based look-up accessible to all agencies, and further integrates geospatial information with business processes in participating agencies to create a connected region.

7. CONCLUSION

GeoConnections funding was a significant subsidy for the Region to develop geospatial applications that will be useful to planners as they deal with intensification, sustainable development, and the Places to Grow legislation. The project enabled York Region and its project partners in the YorkInfo Partnership to reduce duplication, improve efficiency, and to develop useful planning tools that will help us address the Places to Grow legislation, based on a distributed internet architecture that we can build on in the future for other projects.

For more information on this report, please contact Andrew Satterthwaite, Manager, Business Solutions, Geomatics Branch at (905) 830-4444 ext. 1546 or Nancy Prout, Director of Geomatics at ext. 1529.

The Senior Management Group has reviewed this report.