



Staff Report for Committee of the Whole Meeting

Date of Meeting: July 3, 2018

Report Number: SRCAO.18.12

Department: Office of the Chief Administrative Officer

Division: Strategic Initiatives

Subject: SRCAO.18.12 GIS Strategy

Purpose:

The purpose of this report is to recommend a Geographic Information System (GIS) Strategy for the Town of Richmond Hill.

Recommendation(s):

- a) That SRCAO.18.12 be endorsed by Council;
- b) That the GIS Strategy presented in SRCAO.18.12 be used as a basis for future GIS capital and operating budget requests.

Contact Person:

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Report Approval:

Submitted by: Gwen Manderson, Director of Strategic Initiatives

Mary-Anne Dempster, Commissioner, Corporate & Financial Services

Approved by: Neil Garbe, Chief Administrative Officer

All reports are electronically reviewed and/or approved by the Division Director, Treasurer (as required), Town Solicitor (as required), Commissioner, and Chief Administrative Officer. Details of the reports approval are attached.

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Background:

In June 2017 Council endorsed a 5 year corporate IT Strategy that identifies the Town's strategic information technology priorities and initiatives. The IT Strategy sets out a roadmap for achieving the vision of becoming *a leading smart community transforming municipal services and citizen engagement through innovative use of technology*.

The IT Strategy observed a number of challenges with the Town's existing GIS approach: the GIS program lacks leadership and governance, GIS responsibilities are divided between Divisions, and GIS tools may be dated. As a result, the IT Strategy recommended that the Town "develop a GIS strategy to set out how the Town will fully leverage a corporate GIS platform."

The purpose of this report is to obtain Council's endorsement of a Geographic Information System (GIS) Strategy for the Town.

Why is GIS important to the Town of Richmond Hill?

A Geographic Information System (GIS) includes the technology and capability that allow data to be located, mapped and analyzed. Location is fundamental to the services provided by the Town – knowing legal boundaries, understanding distributions, measuring densities, and setting policies to influence and monitor future development all rely on a good understanding of the geography of the Town. Page 10 of the GIS Strategy documents almost 60 municipal services related to GIS such as managing traffic congestion, finding the nearest recreation facility, asset management, property tax assessment, 911 dispatch, zoning, and reporting community inquiries/ service requests.

GIS supports service improvement. By applying a spatial lens to complex challenges, municipalities are gaining insights into service delivery, enabling the implementation of innovative solutions that improve efficiency and can have significant community benefits. GIS allows municipalities to capture and integrate location into its thinking and processes. GIS tools and processes enable map making, understanding what assets the Town has and where, analyzing proximity and spatial relationships between policy and actions, and developing detailed understanding of spatial distributions and patterns to address issues or optimize processes. Most municipalities have moved away from traditional paper map-based products to real-time, online GIS services that ensure that the most up to date and complete information is at the fingertips of its staff and citizens. When a municipality can achieve a comprehensive enterprise GIS platform it can be used to spatially enable all data and processes, empowering the application of location intelligence to every-day operational and strategic long-term decision making.

Furthermore, outside of municipalities the public has grown used to online mapping, relying on Google Maps and other location-based services. Consequently, municipalities have turned to user friendly interfaces, to enable the community to, for example, search planning applications, find the nearest park, search property history information, and look up zoning information.

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How was the GIS Strategy developed?

Perry Group Consulting Ltd was engaged to facilitate the development of the corporate GIS Strategy. Perry Group Consulting Ltd provided their knowledge of GIS best practices in Canadian municipal governments and assessed the Town of Richmond Hill using international GIS maturity models.

Given the importance of GIS to service delivery and improvement, the development of the GIS Strategy took a collaborative and consultative approach. The Strategy was co-sponsored by Strategic Initiatives and Information Technology. Over 90 staff from across all Departments were interviewed or participated in workshops. The GIS Advisory Committee, Information Technology Steering Committee reviewed the Key Findings and Direction Report and the GIS Strategy.

What is the current state of GIS at the Town of Richmond Hill?

The assessment of the Town's current GIS capabilities demonstrates that the Town is at a turning point to improve its GIS program.

The Town has many of the ingredients necessary for a successful GIS program including leadership support for the importance of high-quality spatial data, staff-level willingness to work together and technically capable GIS staff. The Town has reasonable GIS technology and architecture, and is implementing GIS-enabled enterprise systems such as the Customer Relationship Management (CRM) system for community inquiries, Maximo for work orders, and the Planning and Regulatory Management (PRM) system for planning applications.

However, The Town's GIS program lacks formal leadership, planning and coordination and instead takes a siloed, Departmental approach to GIS data, processes and staff resources. This approach has limited the Town from using GIS-enabled enterprise systems to their full potential, and has led to low confidence in GIS data.

Perry Group Consulting Ltd concluded that the Town's GIS program is "poised for greatness." Future directions for the Town's GIS program are to establish leadership, governance and a new organizational model, and to redesign and formalize approaches for data management, project identification and completion, and technology modernization.

What is the vision for the future of GIS at the Town of Richmond Hill?

The vision of the GIS Strategy is to *establish a collaborative geographic information system (GIS) that underpins exceptional public service to our community. A collaborative GIS will strengthen the management of data necessary to support service delivery, empower spatially informed decisions, and drive innovation.*

This vision is supported by 7 recommendations:

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1. Establish new GIS Leadership, GIS Organization and Operating Model:

Establishing clear GIS program leadership is the highest priority. The Town should create a GIS corporate team in the Information Technology Division led by a new Manager, GIS Program. This centralized team should be made up of the existing Town staff from all Departments who currently have primarily GIS responsibilities.

The annual GIS work plan should be governed by a GIS Steering Committee. A GIS Community of Practice, open to any interested Town staff, should be established to build awareness of and proficiency in GIS tools and analysis. Key performance indicators for the GIS program should be reported regularly to the IT Steering Committee and to the Executive Leadership Team.

2. Implement a Data Improvement Program: It is necessary to improve confidence in GIS timeliness and quality. The Town should inventory and prioritize its GIS data needs, and then should work, in cycles of initiatives, to improve the processes and tools for real-time, accurate data.

3. Provide Ongoing GIS Production Support: It is critical to continue providing existing mapping and data services, without interruption, while the GIS program is improving.

The Town should ensure service continuity by documenting current GIS services and service levels, physically locating (i.e. “embedding”) GIS corporate team staff in Departments, and putting in place a transition plan. The Town should also identify opportunities to strengthen GIS integration with enterprise systems.

4. Support Small to Medium Sized Projects: A healthy GIS program not only delivers large GIS projects to support enterprise systems, but also smaller projects that improve service delivery and test new tools and approaches.

The Town should establish a project intake and prioritization process to carry out these small to mid-sized projects.

5. Define Reusable Application Patterns: By working on recommendations 2,3 and 4, the Town will begin to develop GIS tools and solutions (applications) that can be reused and replicated across many services.

The Town should identify our GIS applications, configure these tools and solutions, communicate opportunities to use them, and continue to refine supporting software.

6. Build and Enhance Technology Platforms: Although the Town’s current GIS technology is reasonable for our needs today, GIS technology is rapidly changing.

The Town should proactively manage and evolve the GIS technology platform by defining our existing and “to-be” technology architecture, continuing to support and

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upgrade hardware and software, exploring options to improve our software licensing approach, and enhancing technology integration with enterprise systems.

- 7. Developing Content and Data Sharing Capabilities:** Access to maps and data improves community engagement by offering new ways to connect and tell stories. Today there is limited data sharing between Departments, with York Region and other partners, and with the community.

The Town should develop guidelines and standards for sharing GIS data and applications internally, with partners and with the community. The Town should look for opportunities to be open and transparent with data, applications and content on Richmondhill.ca and other platforms.

How will the GIS Strategy be implemented?

The Strategy recommends moving from a siloed, Departmental GIS approach to a corporate GIS approach that is open, accessible, integrated, collaborative and accountable. As a result, the Strategy will take approximately 3 to 5 years for full implementation.

The implementation plan includes a short term transition plan (mid-2018 to mid-2019) that is expected to maintain the momentum gained during the development of the GIS Strategy. The transition plan will manage the organizational changes required to establish the corporate GIS team, including analyzing job functions of GIS staff to ensure service continuity of GIS and non-GIS activities. The transition plan will identify and work with Divisions to disentangle the non-GIS activities that are currently performed by members of the proposed corporate GIS team. This disentanglement includes defining the resources necessary through subsequent operating budgets to continue providing these existing functions. The transition plan will also analyze current GIS data and processes, and look for immediate opportunities for improvement. The transition plan will be led by a contract Project Manager and Business Analyst, with consulting support.

Should Council approve the business case for a new Manager, GIS Program in the upcoming 2019 budget process, implementation activities will commence such as the transition of staff to the proposed corporate GIS team, initiation of the data improvement program, and launch of the Community of Practice and training to build awareness of and proficiency in GIS tools and analysis across the Town.

Financial/Staffing/Other Implications:

Implementation of the GIS Strategy will require an estimated \$438,900 in additional annual operating funding. This includes one new staff resource, the conversion of two existing contract positions to permanent jobs, and funding for software licensing and corporate-wide education and training. A business case requesting this operating funding will be provided for Council's consideration through the 2019 budget process.

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GIS Program: Estimated* Annual Operating Expenses (in 2018 dollars)

Manager, GIS Program	\$167,700
Contract Conversions (2 positions)	\$111,200
Licensing	\$60,000
Training and Education	\$60,000
Data Improvement Program Support	\$40,000
TOTAL	\$438,900

*A business case with actual expenses will be brought forward for Council's consideration through the 2019 budget process.

In 2018 and early 2019 staff will develop a transition plan to move forward with parts of the GIS Strategy. The transition plan will include continuing to provide existing GIS services, establishing the GIS Steering Committee, planning for the transition to the proposed corporate GIS team including disentangling GIS and non-GIS job activities, conducting a GIS data inventory, and identifying opportunities to improve high volume and priority GIS processes. These activities can be accomplished with existing resources.

Relationship to the Strategic Plan:

Completing and implementing the Town's corporate IT Strategy, including developing a GIS Strategy, helps to achieve Strategic Plan Goal Four, Wise Management of resources in Richmond Hill. With technology being central to delivering efficient and effective public service, investment in IT and data assets will not only improve service to the community but do so in a way that makes the best use of the resources stewarded by Council and staff.

The Strategic Plan Phase 3 Implementation Plan identifies the need to strengthen the approach to implementation of the Town's key plans (Official Plan, Transportation Master Plan, Cultural Plan, Parks Plan and Recreation Plan) by developing strategies for the resources needed to continue to put these plans into action. The IT Strategy is one of the three resource plans and the GIS Strategy is an important implementation component.

Conclusion:

GIS is central to the Town's services and to providing exceptional public service to the community. The IT Strategy recommended the development of a GIS Strategy to address challenges with the Town's siloed approach to spatial information. The GIS Strategy was developed in collaboration with staff from all Town Departments. It puts forward a roadmap for reaching the shared vision of *establishing a collaborative geographic information system (GIS) that underpins exceptional public service to our community.*

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The Strategy recommends moving from a siloed, Departmental GIS approach to a corporate GIS approach that is open, accessible, integrated, collaborative and accountable. As a result, the Strategy will take approximately 3 to 5 years for full implementation. To support the Strategy's implementation staff will provide Council with a business case for the staff positions and operating funding through the 2019 budget process. Should Council endorse the GIS Strategy, staff will develop a short-term transition plan to keep the Strategy moving forward in the interim.

Attachments:

The following attached documents may include scanned images of appendixes, maps and photographs. If you require an alternative format please call contact person listed in this document.

- Appendix 'A' - Corporate GIS Strategy, Final Report

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Report Approval Details

Document Title:	GIS Strategy_CoW_v5.docx
Attachments:	- TRH-GIS-GISStrategy - Final Report - 2018-06-08.pdf
Final Approval Date:	Jun 14, 2018

This report and all of its attachments were approved and signed as outlined below:

Gwen Manderson - Jun 11, 2018 - 2:50 PM

Anthony Iannucci - Jun 13, 2018 - 6:37 AM

MaryAnne Dempster - Jun 13, 2018 - 11:52 AM

Neil Garbe - Jun 14, 2018 - 3:25 PM