



Geospatial Maturity Index Results & Report - 2019

01 Introduction

Geospatial information is used throughout the public sector to support various activities that relate to service delivery. A GIS program has become an invaluable resource for public sector organizations and provides a wide range of benefits beyond its commonly perceived role of “map-making.” The evolution of GIS programs has shown that location data can play a significant role in enhancing corporate decision-making capabilities, communications, analysis, government transparency, and much more.

No two GIS departments are identical, as public sector organizations have taken different approaches to the development of GIS governance, implementation and program development. As a result, performance measurement in GIS maturity is a significant challenge for public sector organizations. In order to develop a plan to address gaps in maturity, GIS practitioners must be able to measure and understand their own progress over time, but also benchmark against other similar organizations to help pace development.

02 What is the GMI?

The Geospatial Maturity Index (GMI) was developed in 2018 to benchmark the maturity of an organization’s GIS program. The GMI is a standardized annual assessment of GIS maturity and capacity and provides insight into the three primary categories of GIS competency: Readiness, Implementation, and Impact.

In total, the 2019 survey contains 85 questions (compared to 74 from 2018). 11 questions have been removed from last year’s survey and 22 new questions were added for 2019. The majority of these changes from the 2018 survey were the conversion of open-ended questions to questions with more discreet answer options, limiting the risk of misinterpreting respondent answers and facilitating better trend analysis in future years of the survey. Newly added questions were largely driven by the feedback of 2018 GMI participants and other leading GIS professionals.

03 Top Performing GIS Programs

In total, there were 127 respondents to the 2019 GMI survey. 104 respondents were from public sector organizations located in Canada and 23 respondents were located within the United States. With the level of participation achieved this year in the United States, there is now enough comparative data to facilitate a dedicated GMI ranking for the US and for North America to supplement the existing Canadian ranking. As leading GIS programs seek other organizations to learn from and share best practices with, our inaugural North American ranking will provide a new platform for cross-border collaboration.

Top 25 GIS Programs in North America

Rank	Organization	Size	Type	Province/State	Score
1	City of Calgary	1001+	Single-tier municipality	AB	96.3%
2	Toronto Police Service	1001+	Law Enforcement	ON	94.7%
3*	City of Leduc	501-1000	Single-tier municipality	AB	93.7%
3*	York Region	1001+	Upper-tier municipality	ON	93.7%
5	District of Kitimat	201-500	Single-tier municipality	BC	92.1%
6	District of North Vancouver	501-1000	Single-tier municipality	BC	90.5%
7	Strathcona County	1001+	Single-tier municipality	AB	89.4%
8	City of Winnipeg	1001+	Single-tier municipality	MB	85.7%
9	City of Burnaby	1001+	Single-tier municipality	BC	85.2%
10	City of Mississauga	1001+	Lower-tier municipality	ON	84.7%
11	County of Newell	51-200	Single-tier municipality	AB	84.1%
12*	City of Cambridge	501-1000	Lower-tier municipality	ON	82.5%
12*	Grey County	501-1000	Upper-tier municipality	ON	82.5%
12*	Region of Niagara	1001+	Upper-tier municipality	ON	82.5%
15	Halifax Regional Municipality	1001+	Single-tier municipality	NS	82.0%
16	King County	1001+	Upper-tier municipality	WA	81.0%
17	Ville de Montréal	1001+	Upper-tier municipality	QC	79.9%
18*	City of Guelph	1001+	Single-tier municipality	ON	77.8%
18*	San Juan County	501-1000	Upper-tier municipality	NM	77.8%
20	Durham Region	1001+	Upper-tier municipality	ON	76.7%
21	City of Burlington	1001+	Lower-tier municipality	ON	75.7%
22*	Municipality of Chester	51-200	Single-tier municipality	NS	74.1%
22*	Municipality of the County of Kings	51-200	Single-tier municipality	NS	74.1%
24*	Conservation Halton	501-1000	Conservation Authority	ON	73.5%
24*	Stark County IT	1001+	Upper-tier municipality	OH	73.5%

*Tie in Ranking/Score

Top 20 GIS Programs in Canada

Rank	Organization	Size	Type	Province/State	Score
1	City of Calgary	1001+	Single-tier municipality	AB	96.3%
2	Toronto Police Service	1001+	Law Enforcement	ON	94.7%
3*	City of Leduc	501-1000	Single-tier municipality	AB	93.7%
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Top 20 GIS Programs in the United States

Rank	Organization	Size	Type	Province/State	Score
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2	San Juan County	501-1000	Upper-tier municipality	NM	77.8%
3	Stark County IT	1001+	Upper-tier municipality	OH	73.5%
4	City of Lewisville	501-1000	Single-tier municipality	TX	70.4%
5	City of Longview	501-1000	Single-tier municipality	TX	68.8%

04 Calgary Named North America's Most Mature GIS Program 2019

The City of Calgary continues to represent excellence in GIS program development, holding the top spot in the GMI Canada ranking for the second year and now also claiming the number one ranking for North America. Their top ranking can be attributed in part to their continued integration of GIS program activities throughout their organization, as well as regular internal assessments related to GIS program communication. For example, since the launch of the 2018 GMI survey, the City has completed both a GIS multi-year plan and a GIS data policy to guide and inform the governance of their GIS program.

The City continues to maintain involvement with key GIS stakeholders both internal and external to the organization. Calgary is one of only 7 respondents that indicated they had a GIS communications plan that is aligned with corporate strategic goals, tailored to individual stakeholders, and has a process in place to evaluate the communications plan. In terms of capacity, the City of Calgary goes above and beyond to provide its GIS staff with professional development opportunities:

“We provide opportunities for our staff to gain diversity in experience through rotations in job roles, backfilling for other specialized positions, and through participation in corporate wide initiatives. We also host a formal community of practice that is used for both professional collaboration and skills development. Hundreds of hours are also spent each year by GIS staff participating in the above training and sharing their knowledge with each other and with external GIS staff.”

Calgary was also one of only 30 organizations that reported having metadata available and maintained for all business and foundational data layers. Even among the larger organizations that participated in the GMI, only 37.5% were able to report having this level of data maturity.

Congratulations to the City of Calgary!

“We continue to be a proud leader in the use, management and evolution of geographic information systems which enable The City of Calgary's location analytics. Our success is not achieved independently – it would not be possible without our collaborative partnerships inside and outside our organization.

PSD's GMI Rankings continue to demonstrate that our decades of focus on this valuable technology has positioned us well for today's economic climate. Locational intelligence is the foundation for well-connected data and shareable data, enabling us to expand our Smart City infrastructure, utilize big data and continue to efficiently provide decision-support for citizen services. Not only does it provide a solid backbone for numerous City operations, but it also supports the growth of technology industries locally. The GMI Ranking gives us valuable insight and adds another benchmark to which we can gauge our effectiveness and efficiency. Last year's GMI results helped us focus on areas of improvement and we've spent a lot of time refining our strategic direction to ensure sustainment of our core, reliable geospatial technologies.”

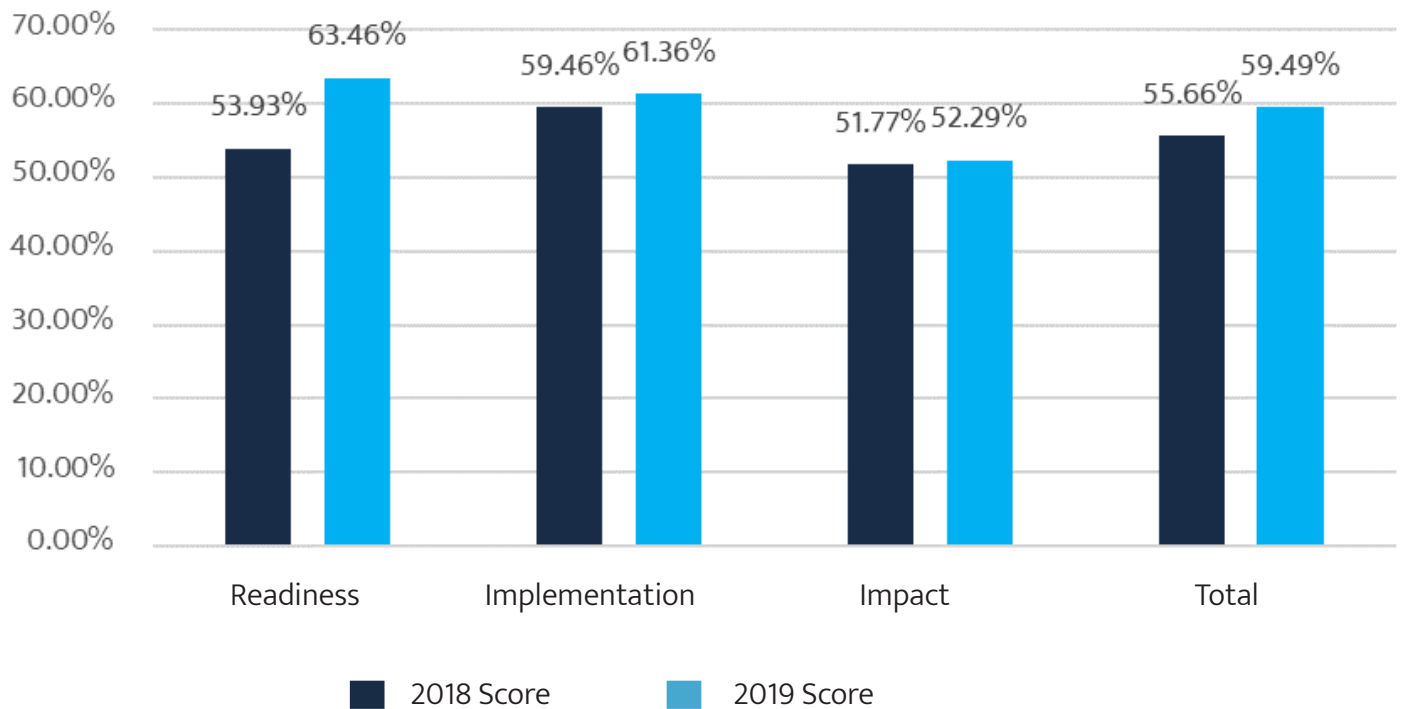
- Liz Findlay, Manager, Geospatial Business Solutions, Corporate Analytics & Innovation, The City of Calgary

05 North American Trends in Maturity

The overall average score for respondents increased from 55.66% in 2018 to 59.49% in 2019, with an average category increase of 7.29%. Note that this change in part can be attributed to the addition of US respondents to the sample. While some respondents indicated an improvement in activities, (e.g. The City of Calgary, City of Winnipeg, and Grey County) a primary driver for the trends are based on better clarifying questions.

For example, within the implementation section, the survey asks respondents about what processes are in place to ensure data quality and maintenance. In 2018, the question sought to understand the existence of Standard Operating Procedures within organizations to maintain data quality to which 41.94% of respondents indicated they had no process in place to address data quality. In 2019, the question expanded the options for activities employed by public sector organizations to address data quality by including proper naming structures and data uniformity protocols. The results from 2019 indicate that only 18% of respondents identified a lack of process in place to ensure data quality and maintenance.

Scoring Trends



Overall, the level of geospatial maturity in this sample represents a promising outlook towards the continued development and enhancement of GIS programs. However, survey respondents again indicated continuous barriers, such as limited budgets and decentralized teams, that have caused concerns related to the capacity of their respective GIS programs to meet the future needs of the organization. Specifically, 63.78% of respondents believe their organization does not have a sufficient number of staff or resources to meet future needs, while 62.99% of respondents indicated that their organization had sufficient staff and resources to meet current needs. These results highlight the importance of maintaining continuous corporate buy-in to ensure that GIS programs can continue to improve and meet demand.

Respondents also indicated that enhancing corporate buy-in from senior management and council is an ongoing effort, and 51.18% of respondents indicated that regularly scheduled meetings occur between senior management and the GIS team to enhance those initiatives.

Another key result was the improvement in activities by public sector organizations to understand how the public uses GIS data. In 2018, only 11.61% of respondents indicated that they had performed some form of usability analysis to determine how the public is using GIS data. In 2019, that number increased to 16.54%, with another 14.96% of respondents revealing that activities were currently underway to perform such an analysis.

06 Methods of Improvement

Our top ranked organizations in 2019 are achieving incredible results in geospatial programming. There is no shortage of insights related to their activities and strategies across all 127 participating organizations. In the new year, PSD will produce three comprehensive reports and corresponding webinars exploring the trends, challenges, and innovations shared by our survey respondents under the three competency categories of Readiness, Implementation, and Impact.

Participating organizations are also encouraged to contact PSD to obtain a personalized GIS State of Maturity Report based on their specific results where actionable improvements can be easily identified to assist organizations through guidance of where GIS program development can be prioritized. Of all organizations that acquired a State of Maturity Report from the 2018 GMI survey, their average scoring increase was 11.62% compared to 5.01% for all respondents. Many organizations have identified the GIS State of Maturity Report as a key tool to address gaps in maturity and contribute to continuous program improvement. [Click here](#) to learn more about the GIS State of Maturity Report.

Thank you to all of our GMI respondents and contributing advisors. We look forward to continuing working with exceptional GIS practitioners in this international benchmarking and capacity building exercise. Stay tuned for the upcoming Open Cities Index results to be launched December 4, 2019.

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PSD is an industry leading research, consulting services and software solutions firm for enterprise asset management and budgeting. Our team consists of former local government executives, senior managers, and technical specialists with decades of hands-on experience in the fields of corporate services, public works, asset management and finance.

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