

Data Analytics & Information Access

Led by: Corporate Analytics & Innovation

Description:

Data Analytics & Information Access (DA&IA) provides citizens and employees Geographic Information System (GIS) platforms, innovation and data hubs for The City. It connects customers with authoritative, reliable, consistent, tabular and location-based data. With broad service areas such as support services for emergency management response and recovery as per the Municipal Emergency Plan, emergency dispatcher's routing and mapping, open data for citizens and businesses, and advanced analytics, customers are enabled to make proactive data driven decisions to improve services, reduce costs, increase value and save time.

Customers:

Data and information users such as Government Agencies, Partners, Utilities, Calgary Real Estate Board, School Boards, Civic Partners, Individual Businesses, Client Business Units and General Public.

What is delivered to customers:

Accessible and actionable data, information, products and services using web based technology. This includes: Open Data Catalogue data sets, eCommerce, Corporate Dashboards, Map Gallery, Emergency Routing, Aerial Imagery, Tree Canopy, Terrain Models, Decision Support Analytics, GIS Platform, and Location Analytics for Emergency Response.

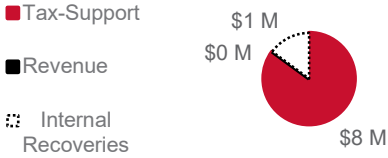

Partners:

Information Technology, Supply Management, Law, Customer Service & Communications (311), Calgary Emergency Management Agency, University of Calgary Urban Alliance, SAIT, Mount Royal University, Calgary Housing Company, Calgary Parking Authority, ENMAX, Calgary Airport Authority, Calgary Police Service, Southern Alberta Regional Partnership, Municipal Emergency Partners.

Service need (value proposition):

Our customers require an authoritative source for reliable and accessible City of Calgary data analysis, maps and open data, to enable transparency, and allow for customers to make more informed decisions.

Current state service value

<p>98% GIS services available during core hours</p> <p>871,000 maps.calgary.ca users</p>	<p>250,000 online transactions through CityOnline</p> <p>1st place ranking on Canada's GIS Maturity Index</p>	<p>2018 Budgeted Gross Operating Expenditures Funding Breakdown (\$ Millions)*</p>  <p>\$500 Annual operating cost per employee</p> <p><small>* Gross operating budget and the service cost ratio may include internal recoveries that are also included in other services gross operating budget.</small></p>
<p>Connections to Citizen Priorities</p> 		<p>What the service includes (\$000s)</p> <p>Geospatial systems - (GS), data integrity & solution delivery (GS, data management & analysis, solution delivery): \$5,645</p> <p>Advanced Analytics - (Actionable insight and data visualization): \$808</p> <p>Imaging and Content Delivery - (Solutions to digitize physical content into City repositories): \$808</p> <p>Innovation - Human centred design and prototyping of ideas to innovate City service delivery: \$844</p> <p>Intellectual Property (IP) Management and eCommerce (Managed access to City IP and corporate data/products): \$1,137</p> <p>Key Capital Investments</p> <p>The programs and projects will maintain current software upgrade versions supporting our eCommerce and GIS systems, along with regular imagery updates.</p>



What we've heard and service outlook

What we heard: Research & Engagement Results

This service has a diverse customer base within the corporation and externally with citizens and industry. Interaction and engagement with customers is done through various methods. In a recent survey, 100 per cent of customers were satisfied with the overall service delivery. Customers value the availability and accessibility of data to optimize their operations and find innovative ways of doing business. They also value the quality of data and responsive service, enabling them to make more informed decisions. Based on our interactions with customers, we know that customers value the ability to customize service offerings for their unique needs.

What Council has directed

W2/W3/W4 – Promotes data informed decision-making, sharing of data, research and expertise across the corporation, and facilitates collaboration and connection to help customers eliminate service silos and simplify process to be more cost-effective.

N1/M2/M3 – Geospatial analytics, routing and emergency mapping support The City's front line service providers to ensure neighborhoods and public spaces are safe, and also supports efficient transportation of people and goods throughout the city.

P3/H2 – Quality data, products and services through channels such as CITYonline, Calgary.ca and the Open Data portal support Calgary businesses.

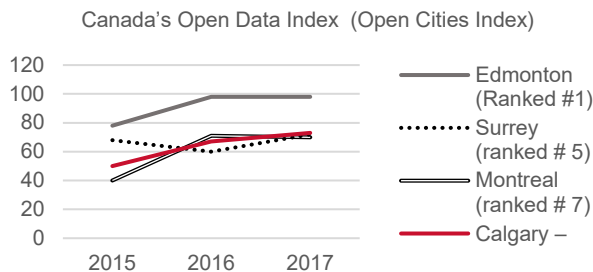
H3 – Helps to ensure our water utility's asset data is accurate, and supports flood mitigation and modeling of Calgary's watershed.

This service aligns to the Information Management and Security Policy, Open Data Strategy, Digital Strategy, and GIS Roadmap.

What are we watching?

The current pace of technological development and connectivity is profoundly changing the way people live, work and make decisions. It impacts all services and products throughout the organization. This service plays a huge role in managing the impacts of this trend by working with technology such as Aerial Imagery and artificial intelligence. Many of these technologies have yet to realize their full potential and contribution to City operations. Accessibility of authoritative data and transparency of City operations is another growing trend that builds trust, allowing further connections and innovative uses of data. It promotes the use of data mining, locational intelligence, numerical modeling and algorithms. A "single source of the truth" accomplished through a centralized data repository modelled after the successful Geospatial platforms, is on the horizon for analytics.

Benchmarking



Source: Open Cities Index

The growth of open data initiatives across Canada represents a trend towards more open, transparent, accountable government where open data and quality information are available and accessible by citizens. The Open Cities Index is Canada's first study to benchmark municipal open data initiatives. The index measures the readiness, implementation, and impact of the participating cities' open data initiatives. Compared against 60 other municipalities, Calgary's overall index ranking retained fourth place in 2016 and 2017. This was well above national average score of 43 per cent for 2017.

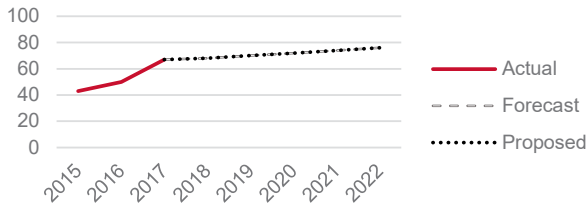
What matters to Calgarians

VALUE DIMENSION	DESCRIPTION
Convenience	Outputs from the service are accessible by the customer easily.
Availability	Data and information is available 24/7 (except scheduled down time).
Quality	All outputs are accurate and up to date.
Responsiveness	Requests are responded to in a timely manner.
Reduces effort	Analysis provided gives information and insight to gain more value from city investments.

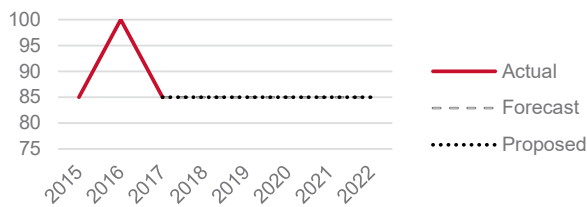


How is the Service performing? Where we are headed and where do we want to go?

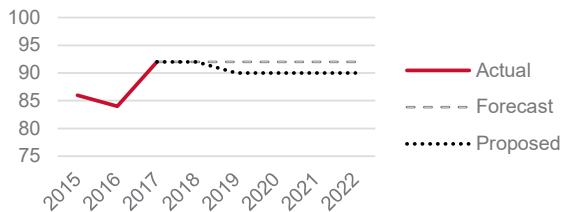
Per cent of City of Calgary business units that have data sets in the Open Data Catalogue (Per cent)



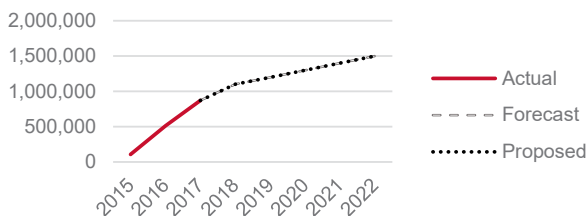
Per cent of customers satisfied with data formats delivered in the Open Data Catalogue (Per cent)



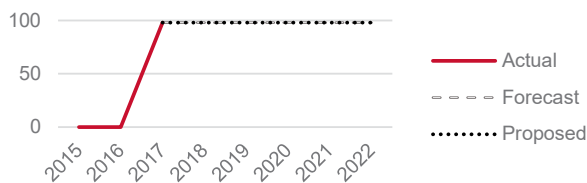
Per cent of customers satisfied with ease of navigation CITYonline website (Per cent)



Number of users that view products on maps.calgary.ca (Number)



Per cent of Geographic Information System (GIS) Production Services uptime 24 hours/ day, 7 days/week (Per cent)



Story behind the curve

Per cent of City of Calgary business units that have data sets in the Open Data Catalogue.

- With the additional resources proposed to continue to operating a cross corporation program (i.e. AnalyticsCalgary) that is intended to implement Open Data initiatives, we anticipate that number of open data sets available will be increasing slightly over the next four years. The program is currently being funded through one-time corporate costs for 2016-2018. The permanent funding will allow us to continue our commitment to providing public access to City data, promoting transparency in government and innovation within our community.

Per cent of customers satisfied with data formats delivered in the Open Data Catalogue.

- The customer satisfaction surveys are conducted annually for Open Data portal. Open Data Portal only has history for the current budget cycle 2015-2018. Based on the historical trend and additional resources proposed to maintain the current service level that is currently being funded through one-time corporate costs, it is anticipated that customer satisfaction with data formats delivered in the Open Data Catalogue will remain steady over the next four years.

Per cent of customers satisfied with ease of navigation of CITYonline website.

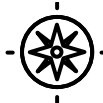
- The customer satisfaction surveys for CITYonline have been completed annually for the past 15 years and reasonably steady at 90 per cent. However, limited capital investment for the next generation CITYonline system may result in losing some online functions and services. As a result, we may see a slight decrease in customer satisfaction over the next four years.

Number of users that view products on maps.calgary.ca

- The Map Gallery will be maintained and updated in a timely manner over the next four years. It is anticipated that the trend will go up as a result of information being accessible, accurate, reliable and trustworthy for citizens.

Per cent of Geographic Information System (GIS) Production Services uptime 24 hours/day, 7 days/week

- Although we strive for the highest possible server and service uptime for GIS systems, this performance will not increase but will likely remain at 2018 uptime levels.



What do we propose to do?

What we propose to continue doing

STRATEGY
Provide accessible, authoritative and connected data to customers.
Expand the use of The City's location-based data and open data portals, to support new and changing communities and infrastructure.
Refine the Corporate Imagery Program, in line with industry best practices.
Develop and manage the Corporation's geospatial technology infrastructure, providing guidance and sharing best practices.
Utilize technology advancement and process improvement to offset inflation in manageable costs.
Increase data sets available in the Open Data Catalogue.
Nurture a culture of innovation and expand human-centered design and prototyping, to develop the next generation of civic services.

Why?

These strategies deliver on Council Directives and support our key value proposition of quality, accessibility and availability as top values for citizens. As well, these strategies are essential to support the vision of Calgary's Digital Strategy. Its vision is to use innovation and engagement to enable secure anytime, anywhere, access to an open government for today's and tomorrow's citizens.

What we propose to do less of

STRATEGY
Employee engagement events.
Contracting and consulting for innovation and business development, research, pilot projects and process improvements.
Business development and testing of emerging or maturing technologies including less proactive collaboration between service lines.

Why?

What we propose to do more of or include as a new offering

STRATEGY
Work closely with service owners to proactively identify challenges and make improvements using a targeted approach.
Provide targeted analysis for service lines to address challenges, rather than providing a blanket approach to solving issues.
Leverage the results of the Zero-Base Review.

Why?

This service will focus on continuous process improvement to ensure processes are the most effective and efficient to meet evolving customer needs.



What Operating Budget do we need to achieve these results and strategies?

For Council Approval

SERVICE PERFORMANCE RESULTS FOR 2019-2022	CURRENT	TREND
Per cent of City of Calgary business units that have data sets in the Open Data Catalogue (Per cent)	68	↑
Per cent of customers satisfied with data formats delivered in the Open Data Catalogue (Per cent)	85	↔
Per cent of customers satisfied with ease of navigation CITYonline website (Per cent)	92	↔
Number of users that view products on maps.calgary.ca (Number)	1,100,000	↑
Per cent of Geographic Information System (GIS) Production Services uptime 24 hours/ day, 7 days/week (Per cent)	98	↔

Breakdown of net operating budget

	2019	2020	2021	2022
Previous Year's Budget	7,851	9,083	9,083	9,083
Less Previous Year one Time	-	-	-	-
Base	7,851	9,083	9,083	9,083
Revenue Changes	-	-	-	-
Internal Recovery Changes	-	-	-	-
Inflation	18	20	19	19
Operating Impact of Previously Approved Capital	-	-	-	-
Operating Impact of New Capital (Incremental)	-	-	-	-
Efficiencies	(18)	(20)	(19)	(19)
Service Reductions	-	-	-	-
Service Increases	1,164	-	-	-
One Time	-	-	-	-
Realignments	68	-	-	-
Total	9,083	9,083	9,083	9,083

Total Operating Budget (\$000s) for Approval

	2018 Budget	2019			2020			2021			2022		
	At Mar 31	Base	One-Time	Total	Base	One-Time	Total	Base	One-Time	Total	Base	One-Time	Total
Expenditure	9,242	10,384	-	10,384	10,384	-	10,384	10,384	-	10,384	10,384	-	10,384
Recoveries	(1,379)	(1,289)	-	(1,289)	(1,289)	-	(1,289)	(1,289)	-	(1,289)	(1,289)	-	(1,289)
Revenue	(12)	(12)	-	(12)	(12)	-	(12)	(12)	-	(12)	(12)	-	(12)
Net	7,851	9,083	-	9,083	9,083	-	9,083	9,083	-	9,083	9,083	-	9,083



Recommended Capital Investment to Support Service Delivery

For Council Approval

Capital Budget for Council Approval

ACTIVITY	DESCRIPTION	2019 REQUEST (\$000s)	2020 REQUEST (\$000s)	2021 REQUEST (\$000s)	2022 REQUEST (\$000s)	2023+ REQUEST (\$000s)	Total REQUEST (\$000s)
Annual Investment Program(s)		-	-	-	-	-	-
Project(s)		2,450	2,298	1,527	2,456	-	8,730
411308	Corporate Imagery Program	928	824	824	1,660	-	4,236
480700	City Online Next Generation	1,075	885	285	285	-	2,530
480703	Corporate GIS Upgrades	446	589	419	511	-	1,965
Program(s)		-	-	-	-	-	-
Sub-Total (New Budget Requests)		2,450	2,298	1,527	2,456	-	8,730
Previously Approved Budget Remaining		-	-	-	-	-	-
Total Capital Investment		2,450	2,298	1,527	2,456	-	8,730

Explanation of Capital Budget Requests

Project(s)

Activity 411308: Corporate Imagery Program

New Budget Request of \$4,236 thousand ensures The City of Calgary has essential, accurate and current imagery products and solutions that will meet the needs of Corporate projects, business and services.

Funding from Pay-As-You-Go

Operating Impact of Capital: None

Activity 480700: City Online Next Generation

New Budget Request of \$2,530 thousand to replace City Online with a simpler platform. This solution will significantly lower the cost of maintenance and allow for better delivery of critical retail services.

Funding from Pay-As-You-Go

Operating Impact of Capital: None

Activity 480703: Corporate GIS Upgrades

New Budget Request of \$1,965 thousand for Corporate GIS Upgrades to ensure the GIS platform technology and data are current, resilient, compliant and supported to meet operational and business needs.

Funding from Pay-As-You-Go

Operating Impact of Capital: None