

Data, Analytics & Information Access

Led by: Director of Collaboration, Analytics & Innovation

Service Description

Data, Analytics & Information Access (DA&IA) provides Geographic Information System (GIS) platforms, Imagery, intellectual property management, innovation training and consulting services, Computer-Aided Design and Drafting (CADD) platforms, asset drafting, base maps, addressing and open data hubs for administration, council and citizens.

We connect customers with accurate, consistent location intelligence data and analytics. We also support emergency response and recovery under the Municipal Emergency Plan, 911 dispatch routing and mapping, open data, advanced analytics and engineering design, to enable more proactive data-driven decisions, improved services, reduced cost and time saved.

Service Updates

Highlights

Led by Collaboration, Analytics & Innovation's Innovation Lab, a cross-corporate team was trained by the Bloomberg Center for Public Innovation at John Hopkins University to tackle challenges affecting Calgary's Youth. Youth ideas gathered are now forming the foundation for developing a Youth Strategy within Community Strategies. Further, Youth ideas were aligned with a Transit pilot to support public safety, and discussions with Arts & Culture continue for downtown activations.

Continued GIS platform modernization through the expanded use of GIS data portals, ArcGIS Hub, ArcGIS Urban, automations, server upgrades and improvements to corporate base maps and GIS applications (i.e. Building Central). Old applications were decommissioned.

The Calgary Equity Index (CEI) is a data-driven tool to help residents, planners, researchers, and decision makers identify disparities or equity concerns across Calgary. The CEI is composed of 20 indicators in five domains affecting overall health.

Challenges

- Challenges to recruit, develop and retain staff with high demand skill sets that support the region's economic diversification efforts (e.g., data, technology and innovation sectors) due to increasing competition with the private sector.
- The new organizational structure is solidifying, and a demand for scaling and embedding an innovation practice is occurring in step.
- Challenges establishing and maintaining a data governance model, to keep up with the rapidly growing need for access to authoritative data, and maintaining transparency of City operations, as more data is becoming available.



Measuring Our Performance

Legend

— Actuals

■ Expected Future Performance

→ Progressing as planned

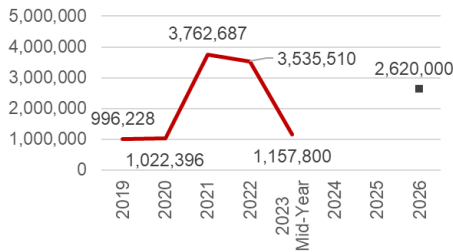
⊖ Not progressing as planned

Performance Measures

Story behind the numbers

Status

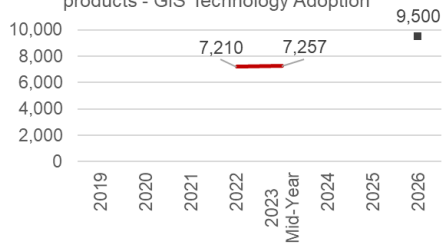
PM 1: Annual number of mapping product views on calgary.ca - WebMapping Views



For the first half of the year our number of map views remain stable and on course to achieve our year-end target. For the second half of the year, a work plan will be developed to boost public awareness through social media such as Facebook and YouTube.



PM 2: Number of City employees accessing GIS data and mapping products - GIS Technology Adoption



We anticipated an increase in number of City employees accessing GIS data and mapping products due to growing demand. We continue to work through our GIS community of practice to educate and share best practices across the organization. Projections are on track to meet our year-end target.

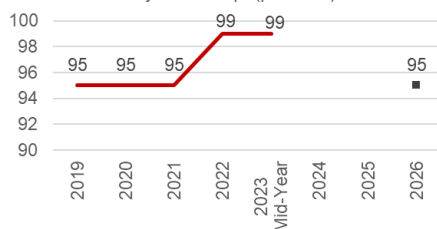


This metric was derived using information from our divisional quarterly report and system diagnostic dashboard.

It is a combined number made up of:

- Building Central 3.2 users
- Licensed users for ArcMap
- Licensed users for ArcPro
- Users of ArcGIS Portal

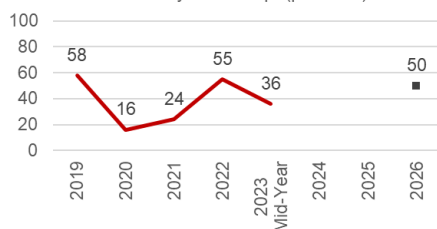
PM 3: Base Map Updates - registered survey plans that are mapped within 21 days of receipt (per cent)



Despite a 51 per cent increase in the number of plans received and processed in the first six months of 2023 (568) versus 2022 (376), base mapping staff were able to maintain the efficiency of our operations and meet targets for processing.



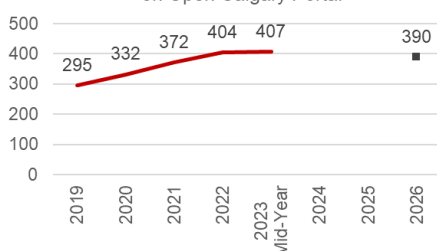
PM 4: Addressing Updates - external addressing service requests resolved within 10 days of receipt (per cent)



New developments and redevelopments have led to a significant workload increase of 60% in the first six months of 2023 (22,096) versus 2022 (13,792). As well, more on-line systems leveraging addressing information in recent years requires more extensive triage for suspected invalid addresses, creating additional delays in address validation. Staffing levels continue to be an issue due to the combination of increased workload and budget reductions in 2021. Contingent staffing is being brought in to ensure service continuity but may require permanent funding increases if the trend continues.



PM 5: Number of open data sets available on Open Calgary Portal



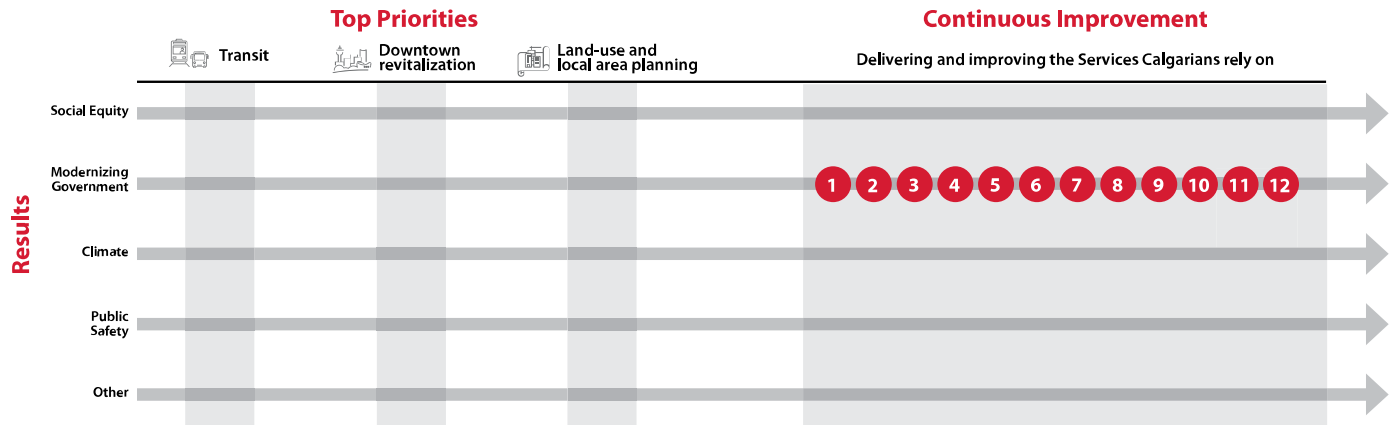
Continual work to increase organizational awareness of the value, policy requirements, and efficiency of publishing and consuming open data, is helping to achieve our projected targets for 2023.





Progress on Service Delivery

Alignment with Council Refined Priorities and Result Areas



Legend



Completed



Progressing as planned











Not progressing as planned



Initiative number

Initiative	Initiative Update	Status
1 Create, manage and provide corporate-wide geospatial technology, data and analytics that are reliable, secure and accessible for customers and Calgarians.	<ul style="list-style-type: none"> Southern Alberta Partnership (SAP) Aerial Imagery is available to the public. Published standards and guidelines for Calgary.ca and corporate Geospatial Portal for webmaps/apps and dashboards. Project team completed the project charter and resource requirements for the Building Maintenance Tools Upgrade and Building Central Data Upgrade projects. Project Managers are in place for major capital programs (i.e. GIS Upgrades and the Location Data Modernization Program). Quality assurance (QA) and quality control (QC) processes in place to ensure authoritative Imagery data is provided. 	
2 Provide City operational groups with tools and analytics to deliver their services more efficiently and providing them greater insight into strategic decision making.	<ul style="list-style-type: none"> Deployed an evaluation environment for CEMA. Stampede table top exercises completed. Run-off season evacuation mapping updated (Water, Police). Trained two new senior staff on Municipal Emergency Plan support. Provided new Calgary addresses and common names biweekly to Calgary 911. Evaluated data transformation processes to ensure the City of Calgary location data seamlessly fit the NextGeneration 9-1-1 data schema. Delivered two dispatch and mobile map updates with supporting databases to Calgary Police, Fire, and Calgary Parking Authority. Completed 2023-2026 technology plan. 	
3 Promote and expand the use of location-based tools and data by customers and Calgarians to enable self-service and open access to geospatial information.	<ul style="list-style-type: none"> Completed Light Detection and Ranging Digital Elevation Model (LiDAR DEM) for new segments of the NW Ring Road, Greenline. Street network and addressing data updates provided to the Public and Catholic school districts and Elections Alberta. Building Central was upgraded to incorporate changes to the new Calgary Integrated Assessment Office upgrade (CIAO+) system and to incorporate new data fields; self-training modules were revised and made available for users. Building Central was showcased at the Geospatial Community of Practice Open House. 	
4 Develop and support the Corporation's advanced analytics practice, providing guidance, sharing best practices and developing corporate data analytics and governance solutions.	<ul style="list-style-type: none"> Completed more than 10 analytics products for improving operational efficiencies such as Fleet Safety (Green Driving), Citizen's Equity Index Dashboard and Waste & Recycling Cart Spot Check Analytics, etc. Continue developing analytics solutions for the Corporation such as: Parks irrigation, Mobility reporting, Community Climate Risk Index, Urban Heat Index, Climate and Environmental Analytics System, etc. Continue developing artificial intelligence (AI) and machine learning (ML) applications such as detecting vehicles/pedestrians from video and pavement AI initiative for Mobility. 	

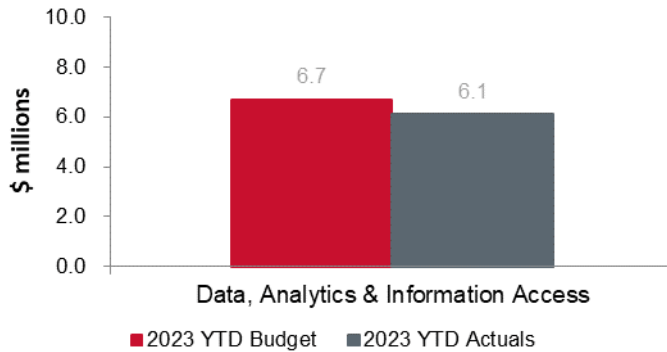
Initiative	Initiative Update	Status
5 Support information access by creating a corporate infrastructure and business process for automated inbound and outbound transfers of information regarding critical City infrastructure assets (Gas, Electric, Telecommunications, Water, Sewer).	<p>Delivered imaging and content products to support The City's digital transformation of the work environment:</p> <ul style="list-style-type: none"> • Fleet Unit Records, Corporate Credit Card receipts, Low income Calgarian's applications for subsidy and Citizen's tax applications, Facility Inspections, Business Credit Applications, Water cross connection records and employee recruitment files. • Exploring automated access to other City repositories as part of the secure data channel project. 	
6 Provide professional learning opportunities and consulting to build City employee's innovation capacity and continue to partner on cross-corporate innovation projects with business units, to nurture a culture of innovation and human-centered design & prototyping, supporting the development of the next generation of civic services to Calgarians.	The Innovation Lab continues to grow both through recruitment and requests for support. In 2022, the Lab completed 33 project requests and delivered training to 825 staff across 19 business units. In 2023, the team is currently developing a strategy to guide the new growth over the next four years to help prioritize work for greatest impact.	
7 Increase the number of data sets available in the Open Data Catalogue and promote easy self-serve access to City data for Calgarians, businesses, researchers and educational institutions.	We continue to add new, and update existing datasets to support transparency of operations with Calgarians. The team is focusing on improving the consolidation and usability of the datasets based on strategic alignment with other municipalities. One recent example is the improvement of the business license data set through data.calgary.ca.	
8 Modernize eCommerce across the Corporation through standardization of commerce transaction processes, a rationalization of technologies, improved data insights, and improved customer experiences.	This platform modernizes and standardizes the online user experience, improving the site navigation from Citizens in need of City products. The integration of this platform with myID application is complete, making it part of a bigger umbrella of connected applications.	
9 Standardize Computer-Aided Design and Drafting (CAD) data and practices by maintaining, updating and expanding The City CAD Standard and make it easily assessable to all customers. Further ensure the use of vendor supported versions of CAD software by managing CAD software licenses and users. Develop an on-demand Engineering Block Profile tool to make the creation of Profiles more efficient.	Hiring of Project Managers is underway and Subject Matter Experts are in place to support various CAD capital projects as they become operational.	
10 Centralize the storage and lifecycle of construction drawings by creating a Construction Drawings Repository (CDR) to store, organize and enable accessibility to City CAD drawings, and pilot the electronic submission of construction drawings initiative to align with the CDR.	Hiring of Project Managers is underway and Subject Matter Experts are in place to support Construction Drawings Repository (CDR) capital projects.	

Initiative	Initiative Update	Status
11 Transition data maintenance from CAD to GIS environments where permissible, to create more robust attribute rich data that allows for analysis and informed decision making. Support clients with the transition of data and processes between CAD and GIS technology platforms.	Hiring of Project Managers is underway and Subject Matter Experts are in place to support capital projects.	
12 Enhance base map and addressing management, stability, quality, and efficiency by transitioning data maintenance processes to modern 3D mapping environments. This modern 3D base mapping product will be the fabric upon which the City's digital twin is created and maintained, allowing for greater accuracy in simulations, and better engagement of citizens in envisioning the future of Calgary's urban form.	<ul style="list-style-type: none"> • Hiring of Project Managers is underway and Subject Matter Experts are in place to support capital projects. • Continuing to work closely with our JUMP Partners to better facilitate communication between utility agencies, keep licensing agreements up to date, and ensure current location and attribute data is included for all buried and overhead utilities. 	



Service Updates on Financial Performance

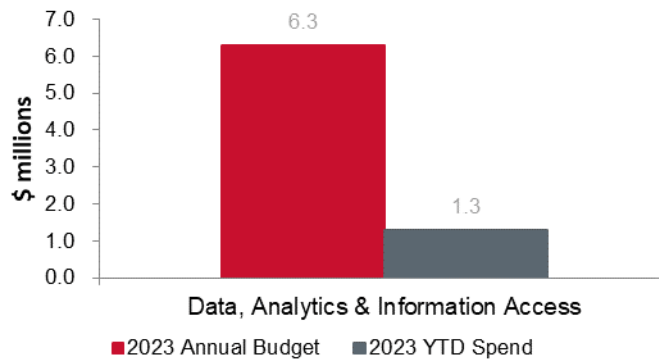
Net Operating Budget and Actuals as of June 30, 2023



Operating Budget Updates - 2023 YTD net operating budget vs actuals:

The net operating budget variance is favourable by \$0.6 million mainly attributable to savings in salaries and wages due to intentionally managing the workforce.

Capital Budget and Spend as of June 30, 2023



Capital Budget Updates - 2023 total capital budget vs 2023 YTD spend:

The capital spend of \$1.3 million or 21% of the capital budget is due to a low spend rate for the Modernization of Commerce project. Updates include:

- Modernization of Commerce –The spend rate is lower than expected as business unit structural changes and resourcing are being confirmed post realignment implementation.
- Corporate GIS Upgrade –The current focus is on upgrading ArcGIS Portals, servers and desktop software to ensure continued functionality and seamless service delivery when legacy systems are decommissioned in the near future.
- Corporate Imagery - A significant improvement was made in 3D capture, visualization, intervisibility and measurements on calgary.ca Map Gallery. Light Detection and Ranging (LiDAR) and Digital Aerial Survey (DAS) for 2022 are now available to the Corporation. We continue to pilot innovative work with drones such as bridge inspections.
- CAD Technology Modernization - Hiring of Project Managers is underway and Subject Matter Experts are in place.