

Climate & Environmental Management

Led by: Director of Climate & Environment

Service Description

Climate & Environmental Management provides leadership, strategies, programs, and support to plan for and manage climate and environmental issues, risks, opportunities and trends associated with the delivery of public services. Climate action aims to reduce the impacts of severe climate events on infrastructure, people and nature, reduce greenhouse gas (GHG) emissions, and improve energy management. Environmental sustainability aims to protect and reduce our impact on land, air and water resources to ensure quality of life, human and ecological health. We identify, assess and manage contamination risks of city-owned land to protect human health and the natural environment.

Service Updates

Key Service Results

Awards

- 2023 CAMA Environmental Leadership & Sustainability Award – Determining the Value of Natural Assets
- Environmental Excellence Award for the 'Climate Strategy-Pathways to 2050'

2023 was a year of foundation building, focusing on the development of strategies, plans, programs & staffing up teams to accelerate implementation of actions. Enhanced focus was put on operational integration of climate action in cross-corporate accountability, decision-making & reporting. Working groups on energy equity & climate resilience were established, to help understand & support equity deserving Calgarians.

Notable program launches include the Clean Energy Improvement Program (CEIP), Building Energy Program, Downtown Retrofit Program, YYC Benchmark & numerous incentive programs. The launch of the 2023-2026 Centralized Climate Fund supporting new and/or retrofit capital infrastructure projects to reduce GHG emissions/climate risk.

Council passed the Drought Resilience Plan setting forward an approach to build drought resilience where Calgary's people, ecosystems, & businesses are prepared to withstand, recover & adapt to drought conditions.

Two major structures providing significant flood protection to Calgary advanced; the Springbank Off-stream Reservoir, & the Downtown Flood Barrier. In addition, advancement of new flood hazard maps & regulatory framework.

Service Challenges

While addressing the climate crisis requires accelerated & coordinated action, creating & integrating the cross-corporate building blocks for organizational climate action & creating shared accountability throughout our large & complex organization with multiple priorities takes time.

Environmental Reserve is a key tool to protect environmentally significant areas (ESAs) in greenfield development but has limited ability to protect certain habitat types (i.e tree stands, grasslands, full extent of riparian areas & river valleys, grasslands, & some wetland types). Input into the City Building Program will support improving environmental outcomes by establishing clearer planning policy direction earlier & refining planning tools.

As growth pressures continue across the city, the volume of sites evaluated for contamination is increasing. Sites that were previously not contemplated for redevelopment are being considered. We continue to work with partners to find innovative solutions.

Trends & Potential Uncertainties

We continue to closely monitor:

Provincial action(s) on flood, drought & the downstream impacts of the anticipated lack of precipitation to inform regional water management strategies, local ecological health of wetlands, biodiversity, river health & the conservation of ESAs within Calgary; opportunities to leverage technological advancements; the growing clean energy market; Federal/Provincial funding opportunities and notable growth in the labelled bond market promoting sustainability & an Environment, Social & Governance focus.

Ongoing progress is being made to build relationships with Indigenous communities with the intention of learning historical & ancestral methods to manage resources, supporting mutually beneficial climate & environment outcomes.



Measuring Our Performance

Legend

— Actuals

■ Expected Future Performance

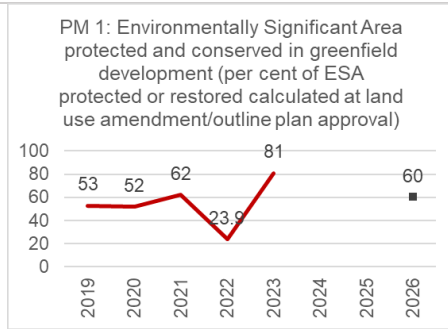
→ Progressing as planned

⊖ Not progressing as planned

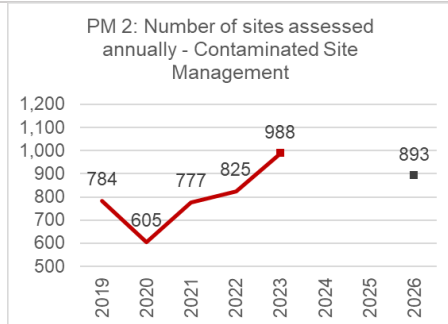
Performance Measures

Story behind the numbers

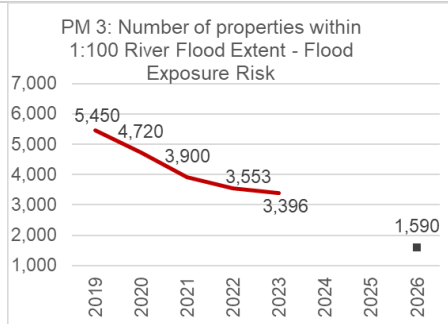
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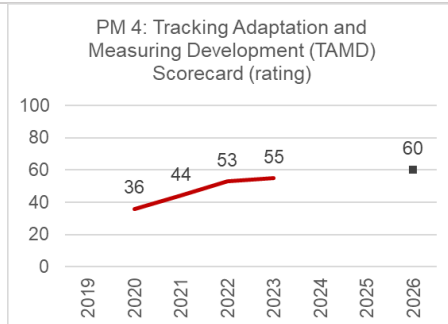
Although the 2023 number is above-target, the average performance from 2019 to 2023 is 56%, slightly below target. Year-over-year variability will occur due to variations in yearly number of approvals, pre-development landscape habitat types and Environmentally Significant Area (ESA), and policy lag. Environmental Reserve is a key tool to protect ESAs in greenfield development but has limited ability to protect certain habitat types such as tree stands, grasslands, full extent of riparian areas and river valleys, grasslands, and some wetland types.



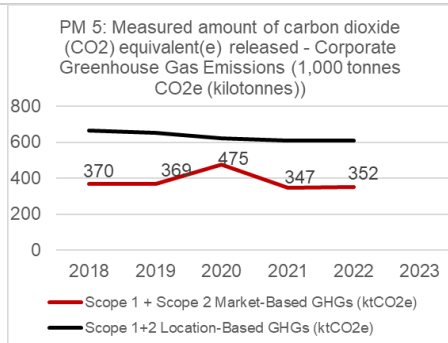
The number of sites assessed annually for potential contamination concerns continues to increase. In 2023, there was a significant increase in the number of development applications and land transactions that were reviewed for potential contamination concerns. We continue to see an increase in requests from Project Managers across the City to assess their projects for potential contamination concerns. By identifying potential soil and groundwater contamination issues in advance of development, appropriate assessment and mitigation strategies can be developed.



Key strategies to reduce river flooding risks center on capital investments in upstream reservoirs, barriers, and outfalls. Since 2013, we have reduced Calgary's flood risk by 55 per cent through strategic investments and partnerships with government, industry, non-government organizations (NGOs) and citizens. Advancement on two major structures to provide significant additional flood protection to Calgary in 2025: the Springbank Off-stream Reservoir & the downtown barrier. The province is continuing the Bow Reservoir option study.



This indicator is designed to capture the extent to which considerations of climate change impacts (i.e., risks and opportunities) are integrated into organizational planning processes. We are continuing to improve in this measure as climate governance structures and processes are implemented across the organization.



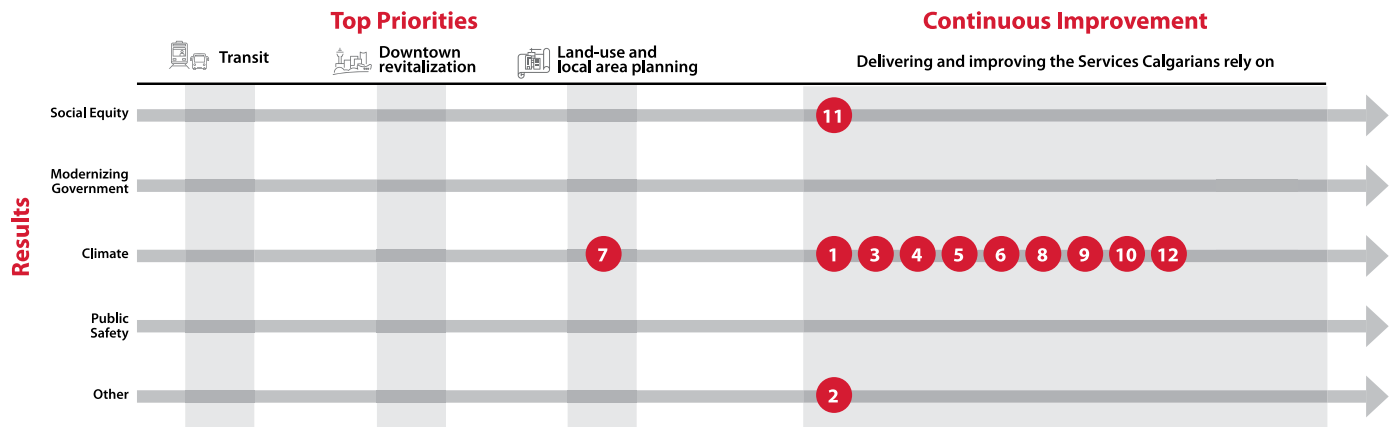
Corporate greenhouse gas (GHG) emissions have been below 2005 baseline levels since 2012, when The City began purchasing Renewable Electricity Certificates (RECs) for 100 per cent of its electricity consumption. 2022 Corporate GHG emissions are 45 per cent lower than 2005 levels. Several projects were initiated in 2023 to support corporate emissions reductions (updates to The City's Sustainable Building Policy, Business Unit GHG Reduction Plans & the Centralized Climate Fund). In 2023, The City initiated a third-party review of its GHG emissions inventory & methodology to enhance accuracy in reporting & alignment with industry best practices.









Progress on Service Delivery





Alignment with Council Refined Priorities and Result Areas




- Legend**
- Completed
 - Progressing as planned
 - Not progressing as planned
 - Not started
 - Initiative number

| Initiative | Initiative Update | Status |
|--|--|--------|
| 1 Increase protection and conservation of Environmentally Significant Areas (ESA) in greenfield development by developing standard protocols for ESA identification in ecological inventories and biophysical impact assessments, by retaining identified ESAs using Environmental Reserve or other planning tools as part of Land Use Amendment/Outline Plan approvals and by updating ESA and Environmental Reserve policies and guidelines. | <ul style="list-style-type: none"> •Updating policy documents to help conserve Environmentally Significant Areas (ESAs) including the Calgary Plan, Parks Plan, & Calgary River Valleys Plan. •Development of an ecological network plan will set targets for conserving ESAs & create a citywide reporting system. Upcoming work includes revising Environmental Reserve (ER) setbacks, ER policies, & establishing a policy & funding mechanism for Conservation Reserves & land acquisition. Guidelines are also being developed for constructed stormwater wetlands & using naturalized or green infrastructure to restore & create more ESAs. | |
| 2 Protect the environment and public health and safety by providing corporate-level leadership and support to City services on identifying, assessing and managing contaminated lands. A proactive approach to identifying potential contamination concerns on City land assets and lands contemplated for development ensures that appropriate due diligence is performed and responsible management of environmental risk occurs. | <ul style="list-style-type: none"> •We continue to see an increase in requests across The City to assess projects for potential contamination due to an increased volume of development applications and land transactions in 2023. •We are being proactive by checking for potential contamination on City lands where development is contemplated and performing due diligence to ensure environmental risks are responsibly managed. | |

| Initiative | Initiative Update | Status |
|---|--|---|
| <p>3 Combine local and regional, structural and non-structural flood mitigation measures to optimize economic, social and environmental resilience to river floods. City-led, supported or advocated initiatives include: new upstream dams and reservoir operations; local flood barriers and infrastructure floodproofing; thoughtful flood hazard zone land use regulation and regulatory refinement; public engagement/education; enhanced flood forecasting; response planning and emergency response.</p> | <ul style="list-style-type: none"> •We continue to progress the Calgary River Valley project, which will enhance development regulation resilience goal at 1:200 flood (above current 1:100 standard) •Updates to the land use planning policy & regulations phase one engagement is now complete. Work is now underway to update our flood hazard maps & regulatory framework •Continued work on the Springbank Off Stream reservoir & the Downtown Flood Barrier, improving our flood risk & mitigating overbank river flooding down-stream •Also notable is the completion of the Strategic Water Management project in South Sask River Basin |  |
| <p>4 Drive drought resilience in Calgary through a corporate-wide stance and significant collaboration involving Water Treatment & Distribution Service Line by planning for local and regional water demand, water allocation and/or licensing, water treatment and distribution infrastructure and/or operations and emergency response. Shifting regional climate, utility and environmental equity and the provincial moratorium on new licenses from the Bow Basin make this initiative complex, timely & important.</p> | <ul style="list-style-type: none"> •Council passed the Drought Resilience Plan supporting our ecosystems, businesses, & people to withstand, recover & adapt to drought conditions. 2023 was the first time water restrictions were applied & Calgarians successfully saved one billion litres of water. We undertook preparatory work for 2024 potential drought & have structured communication & procedures for response •Efforts are underway to incorporate drought & landscape content into the City Building Program •We continue to advance the Water Security Roadmap, Water Efficiency Plan, & the Drought Financial Options study |  |
| <p>5 Guide effective corporate-wide environmental and climate management and performance through policy, frameworks, strategic plans, standards, procedures and tools. Includes assurance activities including audits, risk registers, compliance tracking and performance reporting on behalf of the corporation.</p> | <ul style="list-style-type: none"> •Corporate climate governance maturity assessment completed & cross corporate governance work ongoing •Participation in ICLEI Canada's Net-Zero Action Research Partnership- the evolution of municipal climate accounting •Enhanced integration of climate & environment into Corporate Risk Reporting and Corporate Capital Prioritization Criteria •Incorporation of primary climate investments into Corporate Reporting •Compliance obligations & impacts met via EnviroPortal database & ongoing environmental audits |  |
| <p>6 Develop, implement and manage outreach and education initiatives and partnerships aligned with environmental and climate outcomes of the community and the corporation. Key objectives include to educate and build awareness, as well as collaborate and partner to amplify efforts. Services are provided with equity considerations.</p> | <ul style="list-style-type: none"> •Climate Outreach & Education Strategy & Action Plan- consultant report completed, action plan developed, resourcing & formalization of metrics & indicators are underway •Mayor's Environment Expo- In June The City collaborated with 35 community organizations, partners, & City Business Units to deliver education programming to over 14,000 students and teachers both in person & virtually •Calgary Climate Symposium- 12 Sessions with 45 experts, drawing 1000+ participants •Launched interim public-facing climate dashboard online and expansion of a more robust analytics dashboard underway |  |

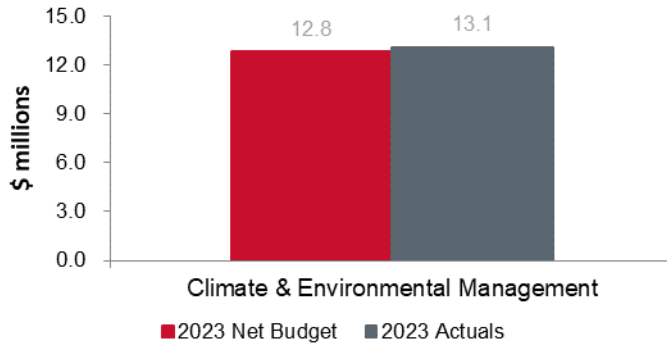
| Initiative | Initiative Update | Status |
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| 7 Integrate climate and environment considerations into planning and approvals continuum. Review and update existing planning and design policies, guidelines, regulations and processes to include net zero, climate resilience or environmental targets, recommendations and/or requirements; incentivize innovation and quality improvements for new developments to further climate or environment; research and analysis to support appropriate city growth targets and types. | <ul style="list-style-type: none"> •Planning Actions for Climate Toolkit (PACT) under development, to be used in the review of Outline Plans, Land Use, Development Permits •Council approved Land Use Bylaw amendments, incorporates climate considerations •City Building Program: continued incorporation of climate mitigation & adaptation content •Ongoing capacity building of Planning & Development staff to incorporate climate content into planning initiatives & development of enhanced training/workshops & materials for targeted City project managers •Planning communities with a greater mix of housing types & complete communities |  |
| 8 Improve climate resilience of Calgary's people, communities, food systems, buildings, infrastructure and natural assets. Use engagement, data analysis and policy to address climate risk/vulnerability of Calgary communities; advance emergency preparedness and business/service continuity planning for climate-driven events; develop relationships (industry, builders, civic partners), incentives, operational improvements, assessment tools to support climate-resilient built and natural infrastructure. | <ul style="list-style-type: none"> •Developing strategies to support Calgary's food systems & businesses. Facilitating YYC Food Collaborative •Establish the Community Climate Adaption action program •Climate risk profiles: City wide data (incl. mapping tool) compiled, supporting local area plans and development of public facing interactive Community Risk Profiles app in progress •Completed eight Climate Risk & Resilience Assessments & three screening assessments for facilities & infrastructure •2023-2026 Centralized Climate Fund committed to funding capital infrastructure projects to integrate climate risk reduction measures |  |
| 9 Support Calgary's transition to a net-zero City. Improve energy efficiency and reduce emissions from new and existing buildings and transportation systems through training and capacity building, financing, incentives and regulatory / policy improvements. | <ul style="list-style-type: none"> •Clean Energy Improvement Program launched three more application intakes •Completed phase one community engagement for Energy Equity Strategy development •Initiated development of District Energy Strategy •Launched Emissions Neutral Building Exchange (ENBIX) with key partners • Developed a strategy to encourage renewable energy generation on brownfield sites •Initiated development of consumption-based emissions inventory scope 3 emissions •23 solar PV installations completed on community buildings through ENMAX Community Solar Fund •BenchmarkYYC Awards & launch of energy data rebate |  |
| 10 Lead by example by improving the energy efficiency and reducing emissions from City-owned and operated assets and services, including buildings, vehicles, facilities, land, and City operations. Support the transition of City fleet to low-carbon alternatives; manage greenhouse gas emissions from waste; include climate considerations in new capital projects; explore offsets to drive further energy efficiency projects and improvements. | <ul style="list-style-type: none"> •2023-2026 Centralized Climate fund committed funding to capital infrastructure projects over 2023-2026 to integrate GHG emissions reduction measures •Updated the Sustainable Building Policy & Sustainable Building Guidance Document to align with Calgary Climate Strategy-Pathways to 2050 |  |

| Initiative | Initiative Update | Status |
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| 11 Ensure our policies and services support The City's commitment to building and maintaining a respectful, inclusive, and equitable workplace that is representative of the community we serve. | <ul style="list-style-type: none">•Planning & Development Services has formally recognized the importance of supporting its people as a foundational goal in our strategic blueprint document, 'Making Places for People'•We actively engage with & integrate staff feedback, expanding professional & personal development opportunities, & enabling health, wellness, & safety amongst staff•The PDS 'People' Committee supports working groups to action focus areas like equity, diversity & belonging, celebration & recognition, & health & wellness•Successful launch of PDS staff educational pilot series 'Seasons for Reconciliation' |  |



Service Updates on Financial Performance

Net Operating Budget and Actuals as of December 31, 2023



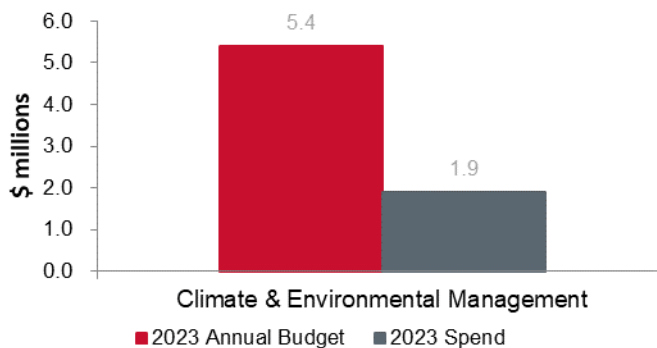
Operating Budget Updates - 2023 net operating budget vs actuals:

Climate & Environmental Management has an unfavourable operating variance of \$ 0.3 million. The primary drivers of the variance were:

- \$1.3 million unfavourable variance in contract and general services due to increase in Contaminated Sites and Booked Liability 5 year estimate,
- Partially offset by \$1.0 million favourable salary and wage variance due to proactively managing the workforce.

In 2023, Climate & Environmental Management focused on establishing and building the service line, focusing on the development of strategies, plans, programs, & staffing up teams to accelerate the implementation of actions. Achievements include launching multiple grant, incentive and partnership programs which will continue into the remaining years of the Service Plan.

Capital Budget and Spend as of December 31, 2023



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

Climate & Environmental Management has spent 34.8 per cent of the 2023 approved capital budget. The underspend is mainly attributed to 2023 being a planning year for the service line. Programs and projects were planned and committed to in 2023 and are positioned to execute in the remaining years of the plan.

- In 2023, the capital expenditures have been primarily used to:
- Build and implement Enviroportal Module 3,
 - Progress the Climate and Environmental Analytics System,
 - Deliver the Centralized Climate Fund Terms of Reference, first round of project intake, and approval of two pilot projects.