



Photo credit: Unknown Author, July 2011 (<https://commons.wikimedia.org/wiki/File:Calgary-Bow-p01.jpg>)

# Corporate Environment, Health and Safety (EHS) Performance Report

October 10, 2018

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# 1 Introduction

The City of Calgary (The City) is committed to its corporate responsibilities related to environmental stewardship and a safe and healthy work environment. To demonstrate accountability for these responsibilities, The City reports semi-annually on specific indicators of environmental, health and safety performance.

The City's Action Plan for 2015 – 2018 has three priority areas which drive actions and outcomes related to corporate environmental and safety management: a well-run city, a healthy and green city, and a city of inspiring neighbourhoods. The City's Code of Conduct includes The City

of Calgary's Environmental Policy and Occupational Health & Safety Policy. These policies establish a set of commitments outlining The City's intentions to manage environmental and safety risks, fulfil compliance obligations, and continually improve performance.

The City's environmental and safety management systems support The City in fulfilling its policy commitments. Through the processes established within the systems, environmental and safety considerations are integrated into The City's day-to-day activities and longer-term strategic plans.

The results-based accountability (RBA) approach has been incorporated into corporate environmental and safety management, encouraging collaboration and evidence-based decision-making to improve performance and manage risks. The RBA approach also supports environmental and safety reporting by providing a framework to demonstrate how The Corporation's performance contributes to higher level results and Council Priorities.

This report presents information on The Corporation's environmental, health and safety management and performance, with a focus on Q1 and Q2 2018.



## 2 Corporate Health and Safety Management and Performance

The City's Occupational Health and Safety (OHS) Policy reinforces The City's commitment to provide a safe and healthy work environment for its employees. The City's OHS Management System establishes the standards, processes and programs to meet legislated requirements, manage health and safety risks, and continually improve safety performance. Within the OHS Management System, The City has a Corporate Safety Strategy that identifies opportunities to strengthen corporate safety culture and improve safety performance in five result areas: safety culture; leadership; governance; programs and services; and evaluation and measurement. The Corporate Safety Strategy will be updated for the next business cycle (2019 – 2022) and will integrate and align with One Calgary, changes to legislation, corporate learning programs, and new and existing corporate safety programs and initiatives.

Setting safety targets within Action Plan targets established the basis for business units to develop and align their own safety targets. Business units have been supported to incorporate safety actions into their annual work plans to achieve their stated targets. In addition to corporate strategies and tactics, business units and departments implement a variety of operational controls to manage their specific safety risks.

As part of the provincial Partnerships in Injury Prevention program, The City will undergo an external audit of its OHS management system in 2019. The City must pass the audit to maintain its Certificate of Recognition (COR) and continue to receive a five per cent refund on its Workers' Compensation Board premiums (approximately \$850,000 per year). Following a successful audit, The City's COR will be valid for another three years, provided The City performs internal maintenance audits and/or submits an audit action plan in each of the subsequent two years.

### Occupational health and safety incidents

Three incidents meeting Alberta Occupational Health and Safety's definition of 'serious' occurred in the first half of 2018:

- On 2018 February 22, a Water Services employee slipped and fell while stepping into a vehicle during wet/icy conditions. The employee broke their leg and required surgery. The division held a 'safety stand down' on February 28, requiring employees to participate in a discussion about recent incidents, other safety hazards, employer and employee responsibilities, and the importance of safe work practices. Alberta OHS issued a Demand for The City to complete an investigation of the 2018 February 22 incident and provide them with a copy of the investigation report. The City complied with the Demand and no further actions have been requested by the regulator.

- On 2018 June 17, Calgary Parks was removing a hazardous tree. An employee entered the drop zone while the work was taking place and was struck by the falling tree. The employee was transferred to the hospital and released the same day with shoulder and back injuries. The incident investigation determined that root causes were related to inadequate training and safety procedures. Corrective actions, including training improvements and new procedures, have been initiated. Alberta OHS issued a Demand for The City to complete an investigation and provide them with a copy of the report. The City complied with the Demand and no further actions have been requested by the regulator.
- On 2018 June 22, a Calgary Transit operator was returning an out-of-service bus to a garage. The bus crossed two lanes of traffic, mounted a curb, and struck an in-service bus that was safely stopped in a designated bus zone. The collision caused significant damage to both buses and trapped one operator in their bus, requiring extrication by the Calgary Fire Department. One citizen on the in-service bus sustained a minor first aid injury. Alberta OHS issued Stop Work Orders for both buses. The Orders will not be lifted until the buses have been repaired or disposed to the satisfaction of the regulator. An investigation is on-going.

### **Changes to Occupational Health and Safety and Workers' Compensation Legislation**

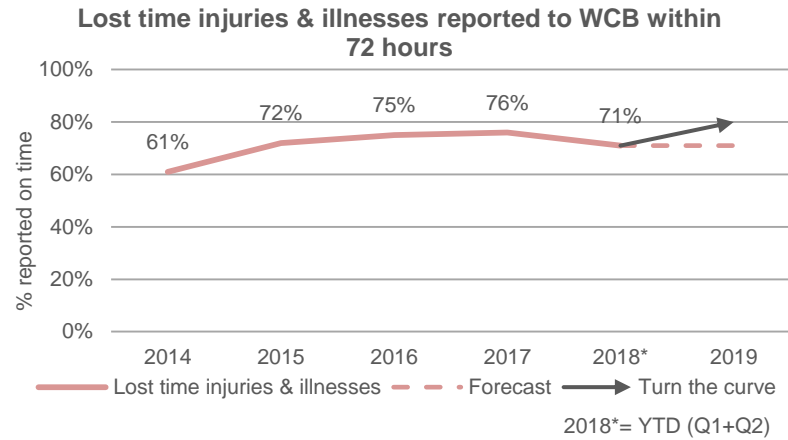
Many changes to Alberta's OHS and Workers' Compensation legislation took effect on 2018 June 1 and 2018 September 1. The City has reviewed and updated its processes to comply with the changes. Changes that require continued focus include:

- The amended OHS legislation requires Joint Worksite Health and Safety Committees for worksites operating longer than 90 days and with 20 people or more. The City has discussed compliance options with the regulator and will be submitting a formal request to the Province for a committee structure that works for our organization.
- The amended OHS legislation adds new requirements to report "potentially serious" incidents and incidents that result in a worker being admitted to hospital for any period of time (previously only incidents that resulted in two or more days in hospital were reportable). The City's ability to demonstrate due diligence with respect to the new reporting requirements will be supported by a detailed reporting process and a decision-tree to guide corporate safety leaders in determining when an incident is reportable.
- The amended Workers' Compensation legislation requires that the employer return an employee to work within three days of receiving medical clearance for any level of duties. This new requirement creates a compliance risk for The City, and is expected to increase The City's accommodation effort. Human Resources has initiated an Accommodation Strategy project to support The City in complying with these changes

### Workers' Compensation Board (WCB) reporting

Lost time injuries and illnesses must be reported to the Workers' Compensation Board (WCB) within 72 hours of the employer receiving notification that the incident has resulted in lost time or medical treatment being sought.

Performance declined in the first half of 2018. Supervisors across The Corporation are being encouraged to take The City's Workers' Compensation Matters course to improve understanding of the WCB process. Increasing supervisor understanding of WCB processes is expected to improve reporting compliance.



<b>Workplace injuries and illnesses</b> The City's Occupational Health and Safety Policy outlines The City's commitment to providing a safe and healthy work environment for its employees. The Policy also sets out expectations for employees to contribute to a safe and healthy work environment as a shared responsibility. Protecting the health and safety of employees aligns with Council Priority to be a "Well-run City".																																						
<b>Customers</b> Leaders, managers, operational and administrative employees, health safety and wellness risk owners, Administrative Leadership Team.		<b>Key partners</b> Senior Safety Committee, business unit safety contacts, Human Resources, Corporate Analytics & Innovation, Facility Management, Corporate Security, Supply Management, Law, Fleet Services.																																				
<b>How are we doing?</b>																																						
<div><div><div>Safety reporting pyramid 2018 YTD (Q1+Q2)</div><div><div>Lost Time385</div><div>Medical Aid305</div><div>First Aid + Untreated633</div><div>Near Misses + Damage Only286</div><div>Hazardous Conditions &amp; Acts290</div></div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>Ideal State</div></div></div></div>	<div><div>Corporation-wide Total Recordable Injury Frequency</div><div><table><tr><th>Year</th><th>TRIF</th></tr><tr><td>2012</td><td>9.1</td></tr><tr><td>2013</td><td>9.5</td></tr><tr><td>2014</td><td>9.4</td></tr><tr><td>2015</td><td>9.2</td></tr><tr><td>2016</td><td>8.3</td></tr><tr><td>2017</td><td>10.5</td></tr><tr><td>2018*</td><td>12.5</td></tr><tr><td>2019</td><td>Forecast</td></tr></table><p>2018* = YTD (Q1+Q2)</p></div></div>	Year	TRIF	2012	9.1	2013	9.5	2014	9.4	2015	9.2	2016	8.3	2017	10.5	2018*	12.5	2019	Forecast	<div><div>Corporation-wide Lost Time Claim Frequency</div><div><table><tr><th>Year</th><th>LTCF</th></tr><tr><td>2012</td><td>4.5</td></tr><tr><td>2013</td><td>3.9</td></tr><tr><td>2014</td><td>3.9</td></tr><tr><td>2015</td><td>3.9</td></tr><tr><td>2016</td><td>3.9</td></tr><tr><td>2017</td><td>5.0</td></tr><tr><td>2018*</td><td>5.9</td></tr><tr><td>2019</td><td>Forecast</td></tr></table><p>2018* = YTD (Q1+Q2)</p></div></div>	Year	LTCF	2012	4.5	2013	3.9	2014	3.9	2015	3.9	2016	3.9	2017	5.0	2018*	5.9	2019	Forecast
Year	TRIF																																					
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<div><div><div><b>Performance on near-miss and hazardous condition reporting declined in Q1 and Q2 2018.</b> The percentage of all reported incidents that were hazardous conditions or near misses decreased from 32% in 2017 to 27% in the first half of 2018. At least 90% of reported incidents should be hazardous conditions or near-misses, which can be proactively controlled.</div></div></div>			<div><div><b>Performance on Total Recordable Injury Frequency (TRIF) and Lost Time Claims Frequency (LTCF) continued to decline in the first half of 2018.</b> Top incident types for recordable injuries and illnesses in Q1 and Q2 were primarily related to slips, trips, and falls; body positioning; contact with an object or machinery (excluding mobile equipment); overexertion; and motor vehicle accidents. The most common causes of incidents reported for Q1 2018 were weather, road, and surface conditions. Beyond weather-related causes, the other most common incident causes for Q1 and Q2 2018 were lack of knowledge or awareness; failure to identify the hazard or risk; inadequate preparation or planning; and unsafe actions by others. These top incident types and causes are similar to those in 2017.</div></div>																																			
<div><div><b>Key accomplishments</b></div><div><div><div>- Safety Month saw over 450 employees and leaders attend 29 corporate safety events. Individual business units led another 16 successful events for staff.</div><div>- Although overall performance on near-miss and hazardous condition reporting has declined, a targeted campaign saw a 43% increase in these types of reports in April and May 2018.</div><div>- 'myCity/safety' was added to the homepage navigation to improve access to safety information and show the importance of safety within The City's culture.</div></div></div></div>																																						
<div><div><b>Moving forward</b></div><div><div><div>- A City-specific Leadership for Safety Excellence course will be created in collaboration with the Alberta Municipal Health and Safety Association and promoted to improve health and safety competence of The City's leaders.</div><div>- The City's personal protective equipment (PPE) practices will be improved, incorporating best practices from recent initiatives in Utilities and Environmental Protection, including the implementation of foot traction devices to reduce slips, trips, and falls in winter months.</div><div>- Hazard identification, assessment and control processes will be updated to improve employee understanding of worksite hazards and controls.</div></div></div></div>																																						

<b>Managing workplace injuries and illnesses</b> Intentional incident management includes supporting employees in seeking timely medical treatment after a work-related injury, and supporting them through Workers' Compensation Board (WCB) and return to work processes to reduce the amount of time the employee loses from work. Incident management also includes thorough and timely incident investigations, which are critical to understanding causes and developing appropriate corrective actions and strategies.		
<b>Customers</b> Leaders, managers, and operational and administrative employees, Health, safety and wellness risk owners, Administrative Leadership Team, Council.	<b>Key partners</b> All business units, including Human Resources, City leaders and managers, Workers' Compensation Board (WCB), industry partners.	
<b>How are we doing?</b>		
<p><b>% of recordable incidents with root causes documented</b></p> <p>Y-axis: % of incidents (0% to 100%)</p> <p>X-axis: Q1 2016 to Q4 2018</p> <p>Legend: Recordable incidents with root causes documented (solid red line), Forecast (dashed red line).</p>	<p><b>Average days lost per lost time claim</b></p> <p>Y-axis: Days lost (0 to 30)</p> <p>X-axis: 2013 to 2019</p> <p>Legend: Average days lost per lost time claim (solid red line), Action Plan Target (W.PM17) (diamonds), Forecast (dashed red line), Turn the curve (arrow).</p> <p>2018* = YTD (Q1+Q2)</p>	<p><b>Total lost time claim costs</b></p> <p>Y-axis: Total cost (millions \$) (0 to 10)</p> <p>X-axis: 2013 to 2019</p> <p>Legend: Total lost time claim costs 2018 YTD (red bar), Total lost time claim costs (solid red line), Forecast (dashed red line), Turn the curve (arrow).</p> <p>2018* = YTD (Q1+Q2)</p>
<b>The City has improved performance related to the identification of immediate and underlying causes for recordable incidents</b> (medical aid and lost time incidents). In general, this improvement has been driven by conducting detailed reviews to ensure a sufficient root cause analysis by supervisors. Safety Advisors have provided support to supervisors to ensure reports are complete prior to submission to managers for final approval. The quality of the investigations is improving.	Although The City was meeting its Action Plan target at the end of Q2 2018, <b>the average number of days lost due to work-related incidents is forecast to increase by year end.</b> A key factor in the number of days lost is The City's performance on returning employees to work through accommodation. In the first half of the year, <b>54% of employees that could be accommodated (based on medical clearance) were provided with an accommodation</b> , a decrease since 2017 (76%).	<b>The total lost time claim costs due to work-related incidents is forecast to be higher in 2018 than 2017</b> due to an increase in lost time claims, and reduced performance on accommodation and on-time WCB reporting. WCB premiums are affected by lost time claim costs, industry rate increases, and employee earnings. Amendments to the <i>Workers' Compensation Act</i> are expected to result in a further increase to premiums over time. The City's 2017 premiums were \$20.7 million and are forecast to be over \$21.0 million for 2018.
<b>Key accomplishments</b> <ul style="list-style-type: none"><li>- The City's Safety Advisors were provided with advanced incident investigation training to enable them to better support supervisors across the organization.</li><li>- Implemented 'safety stand downs', typically after serious incidents, to have dedicated safety discussions with employees.</li><li>- Safety Month 2018 included focused messaging about the requirement for supervisors to investigate root causes for reported incidents.</li></ul> <b>Moving forward</b> <ul style="list-style-type: none"><li>- Continue developing an Accommodation Strategy to support The City in providing modified work to returning employees within the legislated timeframe.</li><li>- Continue Job Demands Analyses on safety-sensitive and high-risk positions to support workplace accommodation, as well as hazard identification and assessment.</li><li>- Work with supervisors across The Corporation to improve the timeliness of incident report reviews.</li></ul>		

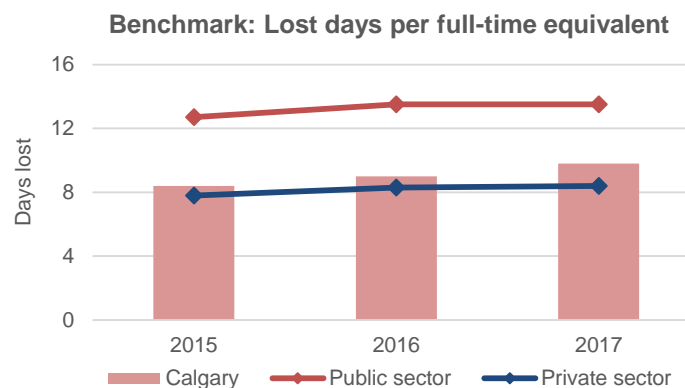
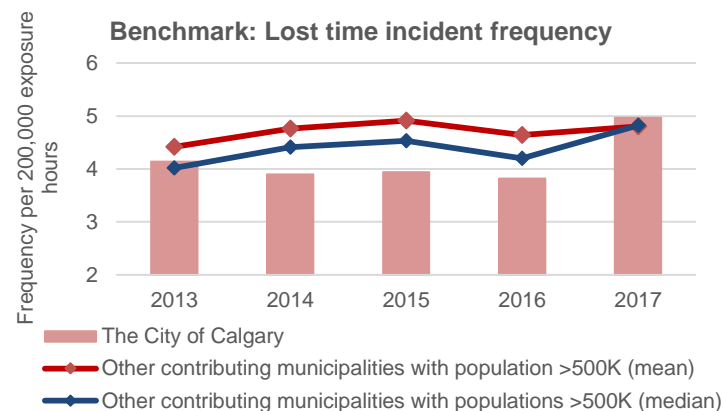
## Benchmarking

The City participates in the Municipal Benchmarking Network, a network of Canadian municipalities that collect and compare standardized data for the purposes of service improvement. Through this network, The City is benchmarking lost time incident frequency and lost time incident severity<sup>1</sup>. Eight cities with populations greater than 500,000 contribute data. Historically, The City's performance on lost time incident frequency has been better than the average and median performance of these comparable cities. However, in 2017, The City's performance fell slightly below that of comparable cities.

Since 2015, The City of Calgary's performance on lost time incident severity, measured by time lost from work, has been better than the average and median performance of comparable cities.

The City is also benchmarking employee absenteeism due to employee illness and injury as an indicator of employee safety and wellness. This is calculated as the average number of days lost per full-time equivalent (FTE) employee in a year due to sickness and accident days, and WCB claims. For this measure, The City is compared to public and private sector entities based on the Statistics Canada Labour Force Survey<sup>2</sup>. The City compares favourably to public sector performance. Overall, Canada's private sector performs better than The City. However, the comparison is qualified in that public sector entities typically have different operating and labour conditions than private sector entities.

Although The City is benchmarking favourably against other municipalities and public sector entities for days lost due to sickness, accident, and WCB claims, The City's own performance on both lost time claim frequency and days lost has been declining since 2015. Having employees off work reduces productivity and increases The City's costs, including WCB premiums. The City must continue to implement strategic and tactical actions to 'turn the curve' on performance.



<sup>1</sup> Municipal Benchmarking Network Canada. 2018 August 28. Data Tables Report – Human Resources.

<sup>2</sup> Statistics Canada. Table 14-10-0196-01 Work absence of full-time employees by public and private sector, annual.

### 3 Corporate Environmental Management and Performance

The City of Calgary's Environmental Policy provides direction for City business units to work together to fulfill environmental compliance obligations and continually improve performance. Environmental management at The City is currently focused at the business unit level with nine business units formally registered to the ISO 14001 standard for environmental management systems (EMS). In 2017, ALT endorsed a renewed Corporate-wide Environmental Management System (EMS) that includes all The City's business units and service lines. A corporate-wide system will enable The City to work across organizational lines to manage environmental risks and take advantage of opportunities for efficiency and collaboration.

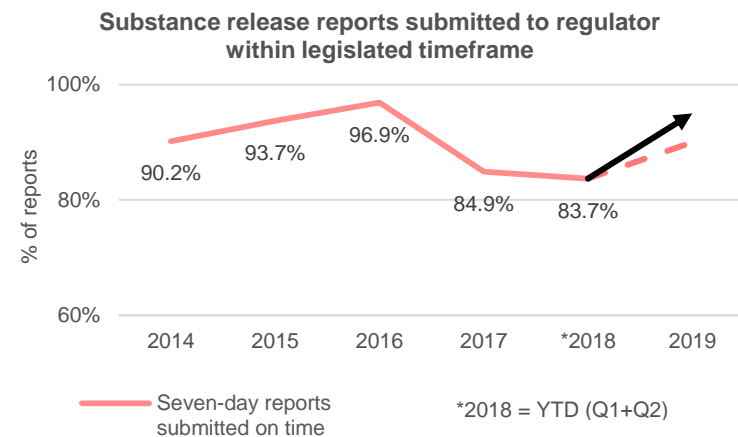
Throughout 2018, ESM has been collaborating with its internal partners to develop various elements of the corporate-wide system, including a set of process-oriented EMS Standards that will establish a systematic approach to environmental compliance, risk mitigation, and performance management. In addition to the EMS Standards, individual business units can maintain their registrations to ISO 14001 where warranted according to their level of environmental risk.

#### Environmental incidents

The total number of substance releases in 2018 is forecast to be lower than in 2017. As with 2017, primary causes for 2018 to date include hose/line failure and vehicle leaks and accidents. Other predominant causes include general equipment failure and mechanical failure. Sanitary system backups and water main breaks, which were primary causes in 2017, have not been as prevalent in 2018.

Substance releases that exceed established thresholds or may cause an adverse effect on the environment or human health must be reported verbally to Alberta Environment & Parks (AEP). A written report must also be submitted within seven days of the verbal report. In the first half of 2018, there was a lower compliance rate with the seven-day timeline for written report submission compared to 2017.

A major update of the Corporate Substance Release Reporting Program will be implemented in October 2018. Improvements are focused on incorporating newly updated provincial regulations, providing clear guidance to employees, streamlining the reporting process, and improving data analysis capabilities. The updated program is expected to improve compliance with reporting requirements.



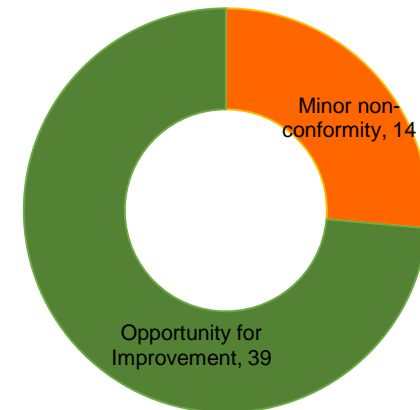
### Internal and external environmental audits

The City's nine ISO 14001-registered business units undergo formal internal and external audits every year to assess conformance to the ISO 14001 standard, corporate environmental management standards, and the business unit's own management system requirements. The audit program provides assurance of the overall suitability, adequacy, and effectiveness of the environmental management system in addressing environmental risk, compliance, and performance.

The ISO 14001 standard was updated in 2015, with a compliance date of 2018 September 14. Registered business units made substantial improvements to their management systems to meet the new (and higher) standard. Calgary Roads and Waste & Recycling Services re-registered to the new standard in 2017. Calgary Transit, Calgary Parks, Fleet Services, Transportation Infrastructure, Water Services and Water Resources, and Calgary Recreation underwent external transition audits between April and July 2018. All the ISO 14001-registered business units have now successfully certified to the 2015 standard.

In Q1 and Q2 2018, internal and external audits did not identify any major management system non-conformities. A total of 14 minor non-conformities and 39 opportunities for improvement were identified. Management system findings were primarily related to environmental aspects identification and assessment, management review, and documentation. Environmental performance findings were primarily related to emergency preparedness and response, chemical and fuel storage, and waste management. Internal audits also identified four medium-risk non-compliance findings related to emergency preparedness and response, training on Workplace Hazardous Materials Information System, and waste management.

2018 Q1 & Q2 Environmental  
management system audit findings



## Changes to environmental legislation and policy

The City is monitoring and responding to recent and upcoming legislative and policy changes, including:

- Bill C-68 *An Act to amend the Fisheries Act and other Acts in consequence*, which is expected to receive Royal Assent in early 2019.
- Alberta's *Remediation Regulation*, which comes into effect on 2019 January 01.
- Alberta's *Act to Enable Clean Energy Improvements*, which is expected to come into force in 2019.
- The Government of Alberta's announcement that it will no longer be participating in the Pan-Canadian Framework on Clean Growth and Climate Change.

While some uncertainty exists with respect to implementation requirements, The City is well-positioned to respond to these changes. The City is actively working with provincial and federal regulators to clarify and influence expectations.

<b>Improving corporate environmental performance</b> is a key commitment under The City of Calgary's Environmental Policy. We work together to conserve, protect, and enhance the environment by complying with legislation, conserving our resources, and preventing pollution.		
<b>Customers:</b> Environmental / City policy owners, City facility managers, internal working groups, subject matter experts, Council, ALT, and citizens.		<b>Key partners:</b> Utilities & Environmental Protection, Planning & Development, Transportation, Calgary Parks, Supply Management, Law, Facility Management, transportation and waste experts, academia, non-profits, consultants, businesses.
<b>How are we doing?</b>		
<b>Municipal salt management</b>  The City has implemented federal Code of Practice best management practices to achieve voluntary compliance targets for the management, planning, storage, and application on roadways of road salts and chloride-treated abrasive materials. Calgary Roads has developed, implemented, and updated annually a "Road Salt Management Plan" to guide its storage and use of chlorides and traction materials, and continues to coordinate The City's efforts on the environmental management of road salts.  Progress has been made by Calgary Roads in its investigation into potential opportunities for operational and engineering control strategies for salt management, both in its salt application to city streets and in the storage of salt and treated abrasives at its maintenance facilities including the more recently constructed Bearspaw and Sarcee depots.	<p align="center"><b>Corporate Greenhouse Gas (GHG) emissions</b></p> <p align="center"><b>Energy efficiency and small-scale renewable energy projects have decreased corporate greenhouse gas (GHG) emissions since they peaked in 2013.</b></p> <p>Corporate GHGs for 2018 are projected to remain close to 2017 GHGs at 680 tonnes CO<sub>2</sub>e due to the persistent cold in January and February, elevating natural gas consumption and offsetting The City's recent GHG initiatives.</p>	<p align="center"><b>Municipal tree canopy coverage</b></p> <p align="center">The Municipal Development Plan and Urban Forest Strategic Plan set a tree canopy coverage goal of 14-20% city-wide, with models showing that 16% is achievable with the right conditions and resources. Current tree canopy coverage in Calgary is approximately 8.25%. <b>Tree canopy coverage has only increased by 1% over the last decade due to impacts from the 2013 flood and the snow event of 2014.</b></p>
<b>Key accomplishments</b> <ul style="list-style-type: none"> <li>- The City is on track to meet seven Code of Practice national targets for road salt management with the possible exception of the target to have 75% of salt-treated abrasives (aka pickle) stored on paved surfaces and under permanent cover by 2019.</li> <li>- In the 2017-2018 winter season, the Beet 55 Brine trial for the cycle track demonstrated its effectiveness in reducing the amount of salt applied to City roads.</li> <li>- The ground-mounted solar project at Shepard Landfill and new Composting Facility provide a potential GHG reduction of 155,000 tonnes of CO<sub>2</sub>e per year.</li> <li>- Learnings from ReTree YYC have led to proactive maintenance of The City's current tree inventory to increase the resiliency of Calgary's urban forest.</li> </ul> <b>Moving forward</b> <ul style="list-style-type: none"> <li>- In Q1 2018, a master plan was completed to produce a prioritized list of capital improvement projects to help move The City toward full voluntary compliance with the Code of Practice targets and reduce contamination risks related to the storage of treated abrasive materials and salt. These priorities, including new salt and brine storage structures and stormwater retention facilities, have been included in One Calgary for consideration in the 2019 – 2022 budget cycle.</li> <li>- Implementation of prioritized Climate Change Adaptation and Mitigation actions under the approved Climate Resilience Strategy will further enable The City to reduce corporate GHGs. The Climate Change Program is working with One Calgary to integrate those actions into the 2019-2022 budget cycle.</li> <li>- The Bonnybrook Wastewater Treatment Plant will be installing a 4 MW gas turbine for their combined-heat-and-power plant which utilizes generated biogas.</li> <li>- Forecasting for 2019-2022 tree planting and canopy coverage targets will be completed following One Calgary budget approvals.</li> </ul>		

<b>Delivery of internal programs and services</b> means working collaboratively to reduce the environmental impact of capital projects, public services, and City infrastructure in support of the City's commitment to lead by example and inspire actions to conserve, protect, and enhance the environment for all Calgarians.																										
<b>Customers:</b> City land stewards, site operators, project managers, telecommunication companies, utility providers, contractors, and citizens.	<b>Key Partners:</b> Facility Management, Waste & Recycling Services, Law, Finance, Real Estate and Development Services, Corp Analytics and Innovation, Urban Forestry, Water Resources, external consultants, community members and citizens, regulatory authorities.																									
<b>How are we doing?</b>																										
<b>Corporate waste diversion</b>  As one of the largest organizations in Calgary's Industrial, Commercial and Institutional (ICI) sector, The City of Calgary is leading by example on waste diversion by implementing the ICI Waste Diversion Strategy within its own operations and City-owned public spaces.  As part of the Corporate Waste Diversion Program, Waste & Recycling Services is updating its data collection, management, and reporting processes to provide business units with regular updates on how much material they are sending to landfill for disposal, and how much they are diverting for recycling and composting.  The City is working to improve waste diversion reporting in terms of data availability and accuracy. In the interim, performance data is not available for reporting.	<p><b>City-owned properties assessed for potential environmental risk and liability</b></p> <table><tr><th>Year</th><th># of properties assessed</th></tr><tr><td>2015</td><td>182</td></tr><tr><td>2016</td><td>481</td></tr><tr><td>2017</td><td>158</td></tr><tr><td>2018 (mid-year)</td><td>331</td></tr></table> <p># properties assessed      Program target</p> <p><b>The Action Plan target to assess 150 sites per year for contamination risk was met for all four years of the business cycle.</b> The increased number of sites assessed so far in 2018 is partially due to a new 'portfolio' approach to service delivery that improves internal customer service and is intended to provide business units a more complete understanding of the risk and liability associated with all their sites.</p>	Year	# of properties assessed	2015	182	2016	481	2017	158	2018 (mid-year)	331	<p><b>ECO Plans approved or conditionally approved on first submission</b></p> <table><tr><th>Year</th><th>percentage of ECO Plans</th></tr><tr><td>2014</td><td>33%</td></tr><tr><td>2015</td><td>38%</td></tr><tr><td>2016</td><td>17%</td></tr><tr><td>2017</td><td>47%</td></tr><tr><td>*2018</td><td>38%</td></tr><tr><td>2019</td><td>38% (forecast)</td></tr></table> <p>ECO plans (per year) --- 2019 forecast Turn the curve *2018 = YTD (Q1+Q2)</p> <p><b>For the 67 capital projects requiring ECO Plans in Q1/Q2 2018, 38% of ECO Plans met program requirements on first submission.</b> This rate is expected to increase by the end of 2018. Increasing the first submission success rate helps to reduce unnecessary project delays and costs while supporting projects in meeting City and other regulatory environmental requirements.</p>	Year	percentage of ECO Plans	2014	33%	2015	38%	2016	17%	2017	47%	*2018	38%	2019	38% (forecast)
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*2018	38%																									
2019	38% (forecast)																									
<b>Key accomplishments</b> <ul style="list-style-type: none"><li>- In Q1 and Q2 2018, the Waste in Public Spaces and Corporate Food and Yard Waste projects were concluded, with expanded food and yard waste diversion to all staffed buildings and City-owned public facilities with food amenities (a total of 231 buildings). This includes improving waste diversion options at transit platforms, parks, and select business improvement areas (BIAs).</li><li>- During the first half of 2018, a portfolio-based approach was used to screen/review sites owned or operated by Calgary Housing Company (CHC) to identify actual or potential contamination concerns.</li></ul>																										
<b>Moving forward</b> <ul style="list-style-type: none"><li>- New guidelines for waste diversion receptacles in City facilities are being launched to improve corporate waste diversion.</li><li>- For the remainder of 2018, the ECO Plan program will be focusing on improving ECO Plan submissions, including a review of alternative software platforms for the online electronic template to further streamline the ECO Plan application process.</li><li>- Business units will continue to be engaged regarding their contamination risk and liability for their portfolio of sites, and to prepare them for the new Alberta <i>Remediation Regulation</i> that will come into force in 2019.</li></ul>																										

## Additional Environmental Milestones and Highlights

### Environmental Outreach

The annual Mayor's Environmental Expo enhances environmental education amongst Calgary's school-aged population. This year, the event had 3,359 participants. In addition, the Eco-Leaders Program, a youth environmental leadership initiative, assisted 29 school teams with a total of 34 projects to research, design, and implement in their community. This program empowered 1,522 students, from grades 1 to 12, with direct environmental education. More students participated in the program this year than the previous two years. Looking forward, program coordinators will be working with the Canadian Parks and Wilderness Society (CPAWS) Southern Alberta Chapter to increase environmental education curriculum linkages and service accessibility to schools.

Calgary Parks launched *Calgary Captured*, a citizen science project that allows Calgarians to gain a better understanding of Calgary's wild species. The project is being undertaken in partnership with the Miistakis Institute, an organization that specializes in evaluating complex environmental problems using diverse skill sets and tools. Through an online platform, more than 2,100 contributors helped The City make 600,000 wildlife identifications within 51 days, exceeding original projections, which estimated this work would take 600 days. The images were captured on remote cameras located in 13 City parks and Fish Creek Provincial Park. Understanding where wildlife moves within parks and green corridors, as well as the barriers to their movement, allows The City to target conservation, park, and conflict management.

### Integrated Pest Management

The City takes an integrated approach to managing invasive species. The approach includes alternatives to chemical pest control such as hand-pulling, mowing, and other methods. The goat grazing program is one such environmentally-friendly alternative. Following successful pilot years in 2016 and 2017, goats were once again used in 2018 to control invasive weeds. Goats grazed through the 2018 summer at Confluence Park, at new locations at Ralph Klein Park, and the inner-city escarpment of McHugh Bluff. Grazing at McHugh Bluff is part of a longer-term naturalization project being carried out in the area. The project contributes to the biodiversity policy of reconnecting urban ecosystems and fostering greater connections between Calgarians and their landscape.

The City also commissioned approximately 200 goats for weed control at the Fish Creek Wastewater Treatment Plant. While the footprint of the plant itself is small, the property includes a large area of land which has ongoing issues with an invasive species, Leafy Spurge. The goats provided weed control that is comparable in cost to mowing. A complementary release of Leafy Spurge beetles was carried out. The beetles work in tandem with the goats to reduce the spread of the weeds.

In addition to being a cost effective and environmentally-friendly method to manage invasive species, goat also fertilize the soil with their droppings and their hooves work the earth helping to till, aerate, and condition the ground. In 2017, the pilot program at

Confluence Park was extended in order to evaluate the long-term effectiveness of using goats to manage the occurrence and spread of target weed species. The program will run until 2020.

### **Biosolids Management**

Biosolids, a nutrient-rich organic material produced by advanced wastewater treatment processes, are a valuable resource that The City has been beneficially using for more than 30 years as an agricultural fertilizer (within the Calgro program). More recently, The City has been using biosolids as a fertilizer to grow approximately 400 hectares of willow on otherwise poor-quality agricultural land northeast of Calgary. This willow project was developed to beneficially utilize biosolids and diversify beneficial reuse for the longer term. With over 5 million willows planted, the plantation is one of the largest willow plantations in North America. In 2017, The City of Calgary entered into a partnership with the Calgary Zoo to provide the willow produced from this project as a browsing and foraging food source for Zoo animals. By providing a continuous and reliable source of willows to the Zoo, The City will significantly increase the Zoo's operational efficiencies and create long term savings in time, labor and cost. The City is currently exploring other beneficial use opportunities for the willow wood.

Another large proportion of the produced biosolids is converted into compost. The Calgary Composting Facility started receiving dewatered biosolids to produce a compost that is safe to use for several applications, adding valuable nutrients to the soil. Biosolids and green cart waste are composted separately.

### **Erosion & Sediment Control**

Construction activity in Calgary can expose soils to wind and water runoff which makes them vulnerable to erosion. In July 2018, after extensive engagement and a six-month phase-in process, The City's 2017 Erosion and Sediment Control (ESC) Guidelines and Specifications were fully implemented on all new development applications with soil disturbances greater than 0.4 hectares. The City's requirements to design and install ESC measures on construction sites results in less sediment entering our waterways, which is an important part of staying below provincial total suspended solids (TSS) guidelines and maintaining healthy rivers.