



Corporate Environment, Health & Safety

2013 Annual Report



Forward

Our vision is that The City of Calgary is recognized as a leader in workplace health and safety performance and environmental stewardship. While 2013 was an unusual year due to the June flood event and its subsequent impacts on our operations, overall, we have made significant efforts in meeting our environment and safety goals.

The 2013 Citizen Satisfaction survey found that 91% of Calgarians are satisfied with The City's environmental practice. Combined with improved 2013 employee satisfaction scores in the area of safety, by employees, citizens and The City working together, we have made positive strides and are on the right track. The 2013 Corporate Environment, Health & Safety Annual Report highlights where we are along our path to reaching our environmental, health and safety goals.

Sharon Young
Director, Environmental & Safety Management
The City of Calgary



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Corporate direction

At The City of Calgary, we are passionate about protecting the environment and creating a safe and healthy workplace.

To improve The City of Calgary's (The City's¹) ability to implement a longer-term vision, we began the process of developing a four-year business and budget plan (2015 — 2018). The four-year business and budget plans will support the 2020 Sustainability Direction and the 100-year vision of imagineCALGARY, and help The City in achieving its environmental and safety goals and targets.

The 2013 Corporate Environment, Health & Safety Annual Report shows Corporate performance towards key Environment, Health & Safety objectives and targets including successes, challenges and risks, and planned future actions.



¹ The terms "The City" and "The Corporation" are used interchangeably throughout this report to refer to The Corporation of The City of Calgary. The city refers to the community of Calgary.

Performance at a glance



Reducing energy use and emissions

The City continues to meet its Corporate GHG emissions target, with emissions 41 per cent below the 2005 baseline in 2013. However, with growing service requirements, 2013 emissions were higher than in 2012, suggesting that emissions may continue to trend upwards unless The City expands its current efforts. The City continues to purchase green electricity and implement energy-saving technologies and practices, such as the green driving program to reduce emissions and energy use.



Conserving and protecting water resources

A finite water supply, growing population and region, and the impacts of climate change are challenges The City must address to meet the needs of our citizens. The City manages its own water use through efficiency practices in City buildings and operations, such as City swimming pools, irrigation of City parks, and washing of fleet vehicles and equipment. New stormwater ponds, engineered wetlands and demonstration rain gardens are helping The City to manage total suspended solids entering Calgary's waterways. Advanced treatment technologies at The City's three wastewater treatment plants continue to protect water quality of the rivers.



Reducing the impact on land

The City of Calgary is committed to mitigating the environmental impact of historical commercial and industrial development. During 2013, The City screened 472 City-owned properties for environmental issues, surpassing its 2013 target, and expects to complete initial screenings of all 8,800 City-owned properties by 2015. The City also engaged community partners to consider temporary uses on City-owned brownfields, such as community gardens or greenhouses. This will be expanded in 2014 with a formalized program for interim uses on brownfield sites. The City also seeks to optimize land use through a variety of environmental considerations.



Protecting ecosystems

Currently under development, the Habitat Condition Rating is a snapshot tool that describes a park's ecosystem quality and can detect improvements or degradations to a park over time. The City will use this tool to evaluate our natural areas. In 2013, over 6,000 trees were planted on City land, and Parks established seven new sites that rely on insects to control weeds, rather than pesticides.



Reducing waste

The City's Corporate Waste Management Strategy is being implemented across The Corporation through various waste reduction and management initiatives. In 2013, The City kept materials from entering the landfill by diverting construction and demolition waste, recycling scrap materials, producing compost, and diverting office recyclables.



Promoting safe work practices

In 2013, The Corporation developed the 2014 – 2018 Corporate Safety Strategy, specifically identifying initiatives that incorporate five strategic results areas – safety culture, leadership, governance, programs and services, evaluation and measurement. Progress was made in 2013 on programs representing higher corporate safety risks, including emergency response planning and contractor management. Business unit 2014 work plans will be aligned with the strategy.

In 2013, The City completed an external corporate Certificate of Recognition (COR) safety system audit, and received an overall score of 89 per cent. This indicates that The City continues to maintain an effective and well-communicated health and safety management system.



Reducing injuries and their impact

Targets have been established to reduce the frequency of worker "lost time" injuries by approximately 10 per cent annually, from a baseline year of 2010. The City reduced "lost time" claim injuries by 10 per cent in 2013, compared to 2012. This was due largely to the actions undertaken by each business unit to address the workplace hazards associated with their activities and The City's safety advisors supporting leaders in achieving their safety goals.

Corporate environmental performance





The City of Calgary's Environmental Policy

Working together to conserve, protect and enhance the environment

Three Cs you should know:

- 1 Comply with legislation.
- 2 Conserve resources and prevent pollution.
- 3 Continually improve our environmental performance.

The City of Calgary is committed to achieving community environmental sustainability.

- The City will lead and inspire actions to conserve, protect and enhance the environment for all Calgarians and the regional community.
- The City will integrate environmental principles and performance objectives into all decision-making processes to enhance environmental sustainability for present and future generations.
- The City recognizes that environmental stewardship is a shared responsibility of government, business, communities and individual citizens.

The City of Calgary will:

- Integrate environmental considerations into all decisions and approvals relating to growth, planning, infrastructure, transportation and development.
- Develop and implement strategies to mitigate impacts, promote conservation and minimize consumption of natural resources including land, energy and water.
- Develop and implement strategies to prevent pollution, protect and enhance the natural environment, reduce waste generation, and respond to climate change issues.
- Ensure City operations, including the work of contractors, comply with environmental legislation, standards and other environmental requirements.
- Enable citizens to reduce their environmental impact and contribute to the imagineCALGARY urban sustainability plan.
- Engage, innovate and partner with other organizations and orders of government on programs and legislative initiatives to improve the environment.
- Continually seek out new ways to improve environmental performance, meet environmental goals and contribute to community sustainability.



Protecting what's precious. Land. Air. Water.

Onward/ Protecting public health and the environment.



THE CITY OF
CALGARY

Reducing energy use and emissions



Goal:

GHG emissions in Calgary are reduced by decreasing energy use, doing more with less energy, and developing and using energy from sources that are renewable or low carbon (2020 Sustainability Direction).

Targets:

- Reduce corporate emissions to 20 per cent below 2005 levels by 2020, and by 80 per cent below 2005 levels by 2050 (the Calgary Climate Change Accord and 2020 Sustainability Direction).
- By 2013, 36 per cent reduction in corporate greenhouse gas emissions (Utilities & Environmental Protection 2013 Business Plan performance measure 3.4).

OUR IMPACT

Energy used to operate City buildings and facilities, street and traffic lights, and fuel City vehicles contributes to the majority of Corporate greenhouse gas (GHG) emissions. City-owned landfills are also a source of GHG emissions through the methane they release from the degradation of organic material, and these emissions are currently accounted for in Calgary's community inventory.

The City has been actively reducing GHG emissions from its operations since 1999 through such measures as purchasing green electricity, capturing landfill gas, increasing energy efficiency across all operations, and implementing alternative fleet and fuel technologies.

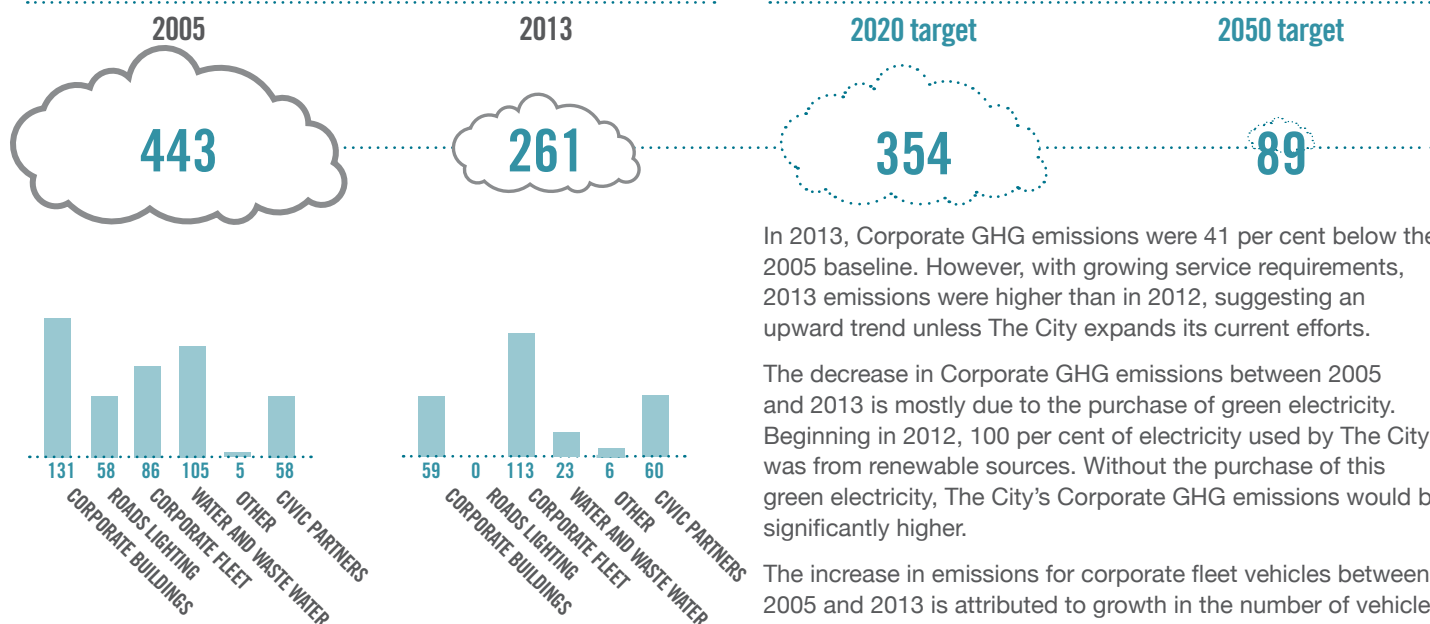
STATUS AND TRENDING

The City has met and exceeded its 2013 target of a 36 per cent reduction in greenhouse gas emissions. The City is currently on track to meet its 2020 target. It will be challenged however, to maintain the current trend by implementing further reduction strategies and strengthening programs to offset the impact of growing service requirements.

Corporate GHG emissions (kilotonnes CO₂ equivalents)

The City reduced corporate GHG emissions by 41 per cent in 2013 (compared to 2005).

The City is on track to reduce corporate GHG emissions by 20 per cent in 2020 and has significant work ahead to reduce emissions by 80 per cent in 2050 (compared to 2005).



In 2013, Corporate GHG emissions were 41 per cent below the 2005 baseline. However, with growing service requirements, 2013 emissions were higher than in 2012, suggesting an upward trend unless The City expands its current efforts.

The decrease in Corporate GHG emissions between 2005 and 2013 is mostly due to the purchase of green electricity. Beginning in 2012, 100 per cent of electricity used by The City was from renewable sources. Without the purchase of this green electricity, The City's Corporate GHG emissions would be significantly higher.

The increase in emissions for corporate fleet vehicles between 2005 and 2013 is attributed to growth in the number of vehicles in use, particularly diesel consumption by heavy fleet vehicles. Transit (bus) service hours increased considerably and the blue cart collection program was implemented, resulting in increased diesel consumption from more collection trucks. The use of biodiesel fuel mitigated the extent of GHG impacts.

* Carbon sinks offset corporate GHG emissions by two kilotonnes per year. A carbon sink is anything that accumulates and stores carbon. For The City of Calgary, the carbon sink is our urban forest.

Strategies and actions

Green Electricity

Through its electricity purchase contract, The City met its commitment to offset 100 per cent of its electricity use with green electricity. In 2013, this represented a greenhouse gas emission reduction of 396 kilotonnes CO₂e or 470,000 MWh.

The Sustainable Building Policy

The Sustainable Building Policy requires certification to Leadership in Energy and Environmental Design (LEED™), for all new construction and major renovations. The seven City buildings completed in 2013, achieved the required level of LEED™ certification (see table) in the Policy at the time of their design. The LEED™ certification system rates buildings or major renovations as one of four different categories : 1 — Certified, 2 — Silver, 3 — Gold or 4 — Platinum, with each level requiring progressively more credits for environmental and energy conservation design and operational elements. Those buildings achieving the silver rating met the policy requirement at the time of building design, prior to the policy update in 2008, requiring new buildings to meet the gold level. By investing in building sustainability, these facilities will achieve efficiencies in energy and water use, in addition to improved waste diversion and recycling during construction.

The Calgary Public Building achieved The City's first LEED™ Platinum certification for commercial interiors. The building reduced energy consumption by 50 per cent in 2013.

Facility Name	LEED™ Rating
Apparatus Repair and Maintenance	Gold
Emergency Operations Centre & Data Centre	Gold
Manchester Supply Management Logistic Centre (Central Stores)	Silver
Saddleridge Multi-Services Centre	Silver
South Fish Creek Expansion (Arena Addition)	Certified
Centennial Arena Expansion (Flames Community Arenas)	Certified
Westside Recreation Centre Expansion	Silver

The Sustainable Buildings Partnership Program (SBPP)

The Sustainable Buildings Partnership Program (SBPP) helps to identify and implement opportunities to improve the operational efficiency of existing City infrastructure, such as office, recreational, industrial, maintenance, storage and special-purpose buildings, as well as parking lots and even roadways. With nearly \$19 million in funding from the Alberta Government's Municipal Sustainability Initiative, the SBPP works cross-departmentally to collaboratively plan and deliver diverse projects. Some projects in progress through 2013 included facility upgrades at Village Square Leisure Centre, buildings at Spring Gardens Operational Workplace Centre, and Hillhurst 1 affordable housing, energy audits and the development of a Corporate energy information system, to facilitate further energy conservation. Light Emitting Diode (LED) lighting retrofits at nine Calgary Transit C-Train stations were completed over 2013, with an average reduction in energy consumption of 48 per cent annually. A total of 1500 LED bulbs were also installed in the Calgary Municipal Building in 2013 with a similar savings in energy consumption.

Investments in sustainable infrastructure

Over 2013, The Calgary Housing Company (CHC) made \$5.5 million in investments for infrastructure sustainability. These investments will help reduce greenhouse gas emissions through energy efficiency while improving accessibility, safety and comfort for CHC tenants. Some example investments include suite renovations, window and door replacements, roofing, hot water tanks, and building envelope upgrades.

Data centre energy savings

The City's data centre was moved from the Municipal Complex to the Emergency Operations Centre in November 2012. This move resulted in significant investments into innovative energy management technologies and improved The City's resilience to flooding, which impacted the Municipal Complex. The 400V power distribution system provides a three per cent savings in energy, while innovative design reduces cooling costs by about 35 per cent. Heat captured in the data centre is used to heat the rest of the Emergency Operations Centre.



Green Fleet

The Green Fleet program reduces fuel consumption through technology trials, policy development, and educational campaigns. In 2013, Green Fleet supported a trial of two compressed natural gas (CNG) waste collection trucks and four CNG public transit buses. As a transportation fuel, compressed natural gas can be 30 per cent cheaper than diesel and results in less impact to air quality and reduced greenhouse gas emissions.

Renewable diesel has had the biggest impact on reducing The City's GHG emissions from vehicle fuels. The City was an early adopter of renewable diesel. It is now standard practice in Alberta for diesel fuel to contain on average 2 per cent renewable diesel by volume.

Another way to reduce fuel use is by choosing the right size vehicle for the task. The City is testing smaller, lighter, rear loader trucks on some routes for waste and recycling collection. Working with the compaction contractor at The City's landfill operations, three hybrid dozers replaced older equipment in 2013, resulting in 42 per cent less fuel consumption. The Calgary Fire Department (CFD) continues to right-size its light fleet by replacing large vehicles with smaller ones while maintaining function. As well, CFD is including fuel efficiency as a requirement for new vehicle purchases.

Landfill gas capture

The Landfill Gas (LFG) collection projects were continued at both East Calgary and Shepard landfills in 2013, resulting in approximately 7,300 tonnes of avoided CO₂e emissions. As well, a Soil Vapour Extraction (SVE) system started operation at Spyhill landfill to collect and treat contaminated soil vapour. A new LFG collection and treatment system is currently being installed at Nose Creek inactive landfill and will begin operation in 2014. These systems will both contribute to the further avoidance of CO₂e emissions.

The Green Driver program promotes fuel-efficient driving practices to reduce costs, emissions, and improve driver safety. In 2013, the Green Driving Standard was created and applies to all employees operating City owned and leased vehicles. As well, the Green Driver video was launched as a tool to educate City drivers about eco driving methods.

The Green Driver program also uses training such as driving simulators to allow operators to practice their eco driving skills in a safe environment. Fleet Services and Waste & Recycling Services now have custom simulators for training purposes. The main focus of Green Driver in 2014 will be continued roll-out of the program within The Corporation.

Calgary Transit operates the largest number of City fleet vehicles and therefore can have a significant impact on reducing emissions and energy use by the way vehicles are operated. The Green Driver video is shown to Calgary Transit Operators in conjunction with a six-hour defensive driving course which highlights the concept of Timed Approach Driving (TAD). This method of defensive driving reduces fuel consumption and lessens wear on the vehicle.

Protecting air quality

The City continued to support the Calgary Region Airshed Zone (CRAZ) and their efforts to reduce emissions of fine particulate matter and ozone in Calgary and area. The City worked with CRAZ to relocate an air monitoring station to City-owned land at the bird sanctuary, situated in the inner-city neighbourhood of Inglewood. The lease for the previous station had expired and the station now provides public education regarding air quality in Calgary.

Roads within the Shepard Waste Management Facility were paved in 2013, which reduced particulate matter emissions. Previously, dust suppression was achieved through the use of water trucks to wet the unpaved roads.

Future Focus

- Leaders across The Corporation are recognizing the risk of increasing energy consumption and the associated costs and environmental impacts. To address this, 2014 will be a year dedicated to focusing on energy management strategies and plans which will establish a corporate direction to guide energy supply and demand choices that can deliver sustainable value to The City. The opportunity to generate energy from waste is also being explored. The Transportation Department started work on an Energy Management Plan in 2013 which will comprise a significant part of the overall corporate plan.
- The Sustainable Buildings Partnership Program will continue to invest in innovative energy management solutions, specifically focusing on LED street lighting, building systems automation, combined heat and power systems, reducing energy use related to computer devices and the implementation of energy audit recommendations.
- The City plans to convert over 2,500 street lights in the communities of Altadore, Douglasdale, Marlborough, Tuxedo and Brentwood. Installations are expected to begin in early 2014.
- In 2014, The Sustainable Buildings Policy will be reviewed to ensure current best practices are reflected. The policy provides assurance that new buildings and major renovations undertaken by The City meet recognized standards for leading environmental and energy conservation practices.
- Green Fleet priorities for 2014 are testing alternative tire pressure monitoring systems for heavy fleet vehicles, installing vehicle optimization software, and exploring advanced tire technology, to reduce fuel consumption and emissions.



Conserving and protecting water resources



Goals:

2020 Sustainability Direction objectives:

- Calgary's public health and the health of its watersheds are protected by delivering safe and reliable drinking water, collecting and treating wastewater, and minimizing the impact of Calgary's urban form.
- The long term sustainability and resiliency of Calgary's water supply meets the current and future needs of a growing city and region.

Targets:

2020 Sustainability Direction targets:

- By 2020, drinking water and treated wastewater effluent will continue to meet provincial regulations for quality 100 per cent of the time.
- By 2020, total loading targets continue to be met in The City's License to Operate.
- By 2020, accommodate Calgary's population with the same amount of water withdrawn from the river as 2003 (30 in 30 target).
- By 2020, diversify Calgary's future water supply to align with water demand.

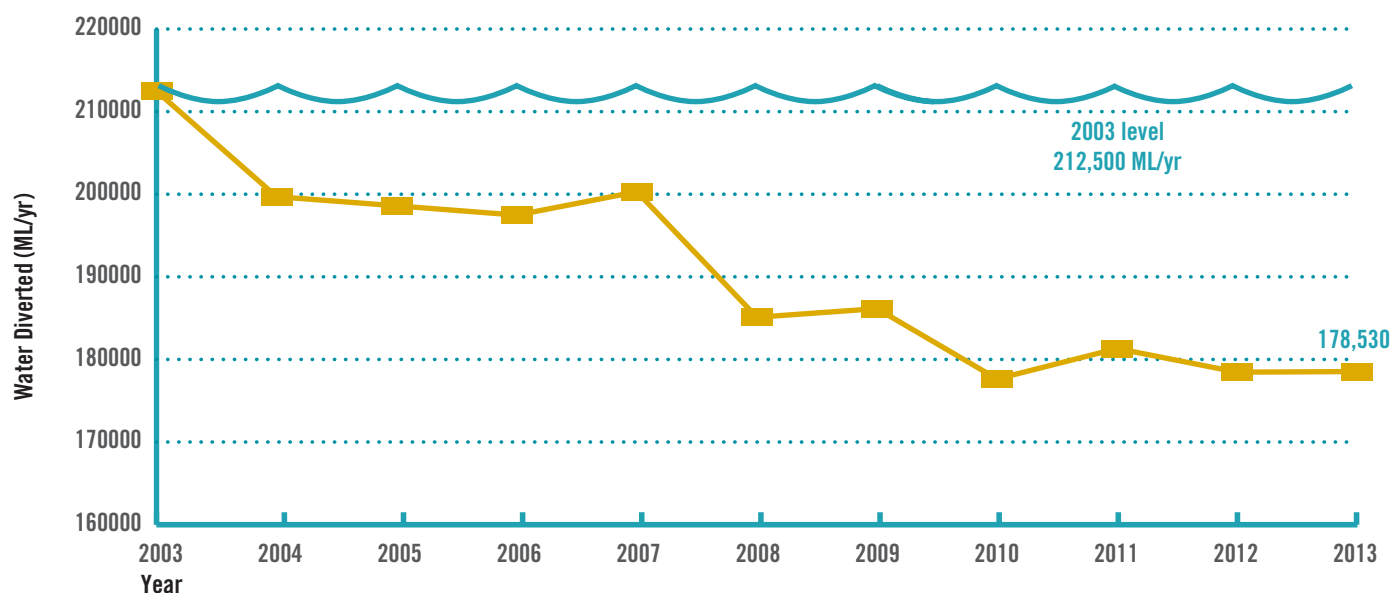
OUR IMPACT

The City of Calgary manages the quality and delivery of Calgary's water supply – from the river, to our taps and back to the river. We protect public health by ensuring a clean and reliable supply of water and by treating wastewater. We also manage stormwater drainage, respond to floods and contribute to the conservation of our precious water supply.

STATUS AND TRENDING

The City is on track to meet its water quality and conservation targets for 2020. The Corporation is responsible for approximately one per cent of Calgary's water demand.

Annual water withdrawn from Bow and Elbow rivers





Strategies and actions

Corporate water quality and quantity

Watershed planning initiatives are aligned to the provincial Water for Life strategy and regional watershed management plans to protect the watershed and ensure provincial compliance. Given the challenges of a finite water supply, a growing population and region, and impacts of climate change, The City is managing its own water use to ensure a reliable and sustainable water supply in the future.

The City manages its water use through efficient practices in City buildings and operations, such as City swimming pools, irrigation of City parks, and washing of fleet vehicles and equipment. City facilities also produce wastewater, and activities such as roadway maintenance and facilities construction contribute to stormwater runoff. There are numerous ways The City leads by example and takes action to conserve water in our own operations and to reduce the impact on the rivers.

- The City is committed to being environmentally responsible through its building design and through its operation and management of its 400 City-owned buildings and open spaces. Also, The City practices water efficiency and best practices for stormwater management.
- Low impact development projects are incorporated on City-owned sites to demonstrate and promote sustainable stormwater management. These projects lead to learning which technologies or systems will improve the implementation of low impact development throughout the city.
- Parks capture and reuse stormwater for irrigation which saves significant amounts of treated drinking water every year.

Water quality – Stormwater

- In 2013, a green infrastructure pilot site in Kensington demonstrated how a dense commercial street can manage stormwater on-site using trees and soil. “Silva cells” were installed to create a modular suspended pavement system that allows for increased soil volume supporting larger tree growth and providing stormwater treatment prior to discharging to the nearby Bow River. This is the first installation of its kind in Calgary and will serve to guide and adapt Calgary’s future stormwater infrastructure.
- Stormwater management upgrades have been initiated at the Shepard Waste Management Facility, including installing appropriately sized culverts, an upgraded ditch drainage system, as well as the construction of a new stormwater management facility. When complete in 2014, these upgrades will help prevent flooding of the internal road system, will improve runoff water quality prior to release, and will help prevent uncontrolled offsite releases during major storm events.
- Low impact site and facility designs continue to be incorporated into Calgary Fire Department LEED™ facilities reducing the amount of water to maintain landscaping and improving the quality of runoff. At Calgary Fire Department’s Station 39 Douglas Glen, the drip irrigation system is integrated with rain monitors and soil moisture sensors to ensure efficient watering of plants. To limit the amount of runoff entering The City’s stormwater system, permeable parking surfaces were installed, allowing water to percolate through the paving blocks back into the ground.
- The installation of a green roof is underway at the Municipal Building. This green roof will be used as a living laboratory to study the viability of green roofs in the Calgary environment LEED™.
- In 2013, 178 non-functional irrigation services or systems were decommissioned to ensure compliance with bylaws and to eliminate any potential for contaminant pathways.

Water quality – Drinking Water

- Throughout the flood event in June and July, potable water meeting all provincial regulatory standards was continuously produced. This was achieved as a result of the significant upgrades to the two water treatment plants over the previous five years, and the efforts of the plant operations group.

Water quality – Wastewater

- Significant investments are being made by The City to upgrade the wastewater treatment plants to ensure capacity requirements are met and treated wastewater effluent continues to meet provincial regulations.

Water quantity

The City's operations accounted for approximately one per cent of the total demand on Calgary's water supply. Of the one per cent municipal water use by The City, approximately 60 per cent was for irrigation of City parks, recreation areas and green spaces.

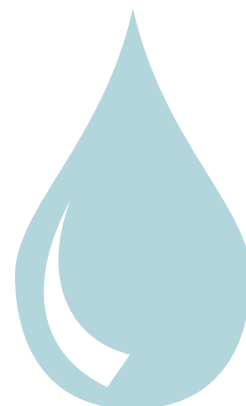
- In 2013, City crews surveyed more than 385 kilometres of aging water mains. Through these surveys they also located and fixed 18 water main leaks and more than 35 service connection leaks providing long-term sustainability and resilience of Calgary's water supply.
- Several Water Services pump stations received irrigation system tune-ups, repairs and upgrades, including installation of weather-based irrigation controllers that resulted in 1 million litres of water being saved in 2013.

- Significant work has taken place in 2013 on advancing automation across Water Services. Remote, operational monitoring was enabled in 2013 for all sanitary lift stations, which ultimately will enable more efficient monitoring of infrastructure and a quicker response time in the event of an incident.

- A new bus wash was installed at the Anderson Garage Bus Facility. This bus wash uses a hybrid system that gains the benefits of a traditional brush cleaning without the use of excessive water in many touchless wash systems. In addition, the water used for the undercarriage and wheel wells is reused at recycle rate of up to 90 per cent.
- The new Calgary Fire Department South Calgary 5 and Douglas Glen 39 stations feature cisterns to collect rainwater from roofs for irrigating landscapes on site. In addition, through the use of dual flush toilets and low flow fixtures, potable water use was reduced by 41 per cent compared to a typical building.

Future Focus

- Investigation of city-wide stormwater runoff volume and rate targets for new development and areas subject to redevelopment will continue. This aligns with the Bow Basin Watershed Management Plan, the Municipal Development Plan and The City's Total Loading Management Plan. Stormwater master plans are underway to support land use planning in both new and redevelopment areas.
- The City will develop stormwater source control practice design and construction specifications as well as operational and maintenance guidelines for vegetative source control practices, including rain gardens, bioswales, absorbent landscaping and suspended pavement technologies, green roofs, rainwater harvesting. This includes stormwater reuse and permeable pavements. The guidance documents will be applicable to source control practices in new and redeveloping communities.
- More stormwater quality retrofit projects are planned for 2014 – 2018, providing treatment for areas of existing development to further reduce the total suspended solids loadings to the Bow River.
- Indicators and targets will be established to support The City's Riparian Strategy. The Strategy provides a vision, goals and strategies to achieve riparian protection in Calgary, recognizing the cross-departmental responsibilities that are required.
- There will be continued implementation of best management practices training for staff involved with parks irrigation.



Reducing the impact on land



Goals:

- Brownfield remediation and redevelopment support efficient land use and environmental protection in Calgary (2020 Sustainability Direction).
- Encourage brownfield redevelopment and overall improvement of brownfield sites (Brownfield Strategy).
- Prevent and/or minimize environmental impacts and enhance the environmental value of the air, land and water affected by projects (Environmental Construction Operations (ECO) Plan Policy).

Targets:

- 🎯 By 2013, 84 per cent of City-owned properties screened through the Environmental Liability Assessment Program (Utilities & Environmental Protection 2012 Business Plan performance measure 3.1).
- 🎯 By 2013, 104 hectares of cumulative area of investigated, remediated or risk-managed City-owned land (Utilities & Environmental Protection 2012 Business Plan performance measure 3.3).
- 🎯 By 2013, four current vacant former gas station sites are actively pursued for the purpose of returning to productive community use (Utilities & Environmental Protection 2012 Business Plan performance measure 3.2).
- 🎯 Mandate that ECO plans are developed for The City's construction projects (Environmental Construction Operations (ECO) Plan Policy).

OUR IMPACT

The City of Calgary continually works to reduce the environmental impact of urban development. One important aspect of this work is land stewardship, which prevents or minimizes contamination of soil and groundwater, and seeks to optimize land use from a variety of environmental considerations. Through regular screening, testing, and monitoring of site conditions, City staff identify contamination and take action to minimize risks to the environment or public health. This includes retroactively addressing contamination from historical development as well as minimizing the impact of future development. The City of Calgary leads by example in the area of land stewardship by ensuring construction projects comply with environmental regulations and have minimal impact on soil and groundwater.

STATUS AND TRENDING

The City has met each of its targets related to contaminated property and assessments for 2013. It is in the process of setting and confirming future targets and considering options to work more collaboratively with external stakeholders on brownfield site redevelopment, such as former service station sites.

Strategies and actions

Brownfield Strategy implementation

In 2013, The City engaged community partners to consider temporary uses on City-owned brownfields, such as community gardens or greenhouses. Given the positive feedback from this engagement, The City will expand this work in 2014 and will formalize a program for interim uses on brownfield sites.

The City also received four development proposals on former gas station sites in 2013. The City is currently working with landowners to ensure all environmental concerns are addressed and to support these brownfield redevelopment projects.

Corporate environmental liability management

As part of the Environmental Liabilities and Assessment Program, 472 City-owned properties were screened for environmental issues, surpassing the 2013 target of 84 per cent, or 7,392 sites in total to date. It is expected that all 8,800 identified City-owned properties will receive initial screenings by 2015. Those properties identified as having potential environmental concerns are currently undergoing a more detailed investigation.

During 2013, 31 of the total 8,800 City-owned land parcels which had not been previously investigated were the subject of environmental work designed to manage and minimize The City's environmental risk. Such work is consistent with that carried out in previous years and represents The City's commitment to protecting human health and the environment.

Substance releases

The City is required to report all substance releases and contamination resulting from City operations or discovered by The City, to the appropriate regulator (municipal, provincial and/or federal). The City is responsible to ensure proper mitigation measures are performed and required follow-up regulatory reports are submitted within established timeframes.

Potentially higher risk releases shown in the graph include:

- substances listed under Transportation of Dangerous Goods legislation,
- those with a specific volume threshold for reporting (e.g. more than 5 litres of corrosive liquid),
- wastewater or other substance released directly to a river, or
- substances known to have an adverse environmental effect.

The number of potentially higher risk substance releases increased by 23 per cent in 2013 compared to 2012. This is largely attributed to an increase in releases to Calgary's rivers and stormwater management system during and immediately following the flood of June 2013. A considerable number of these releases comprised unpreventable turbid and sediment-laden water releases to storm sewers which are considered a potential offense under the federal Fisheries Act because of the potential impact on fish habitat. The City complied with requests from regulators for follow-up information on all reported releases.

The Transportation Department experienced a substantial decrease in substance releases in 2013 compared to 2012, including fewer vehicular fluid release incidents. These releases are typically smaller volume (less than 25 L) vehicular fluid

Environmental Construction Operation plans

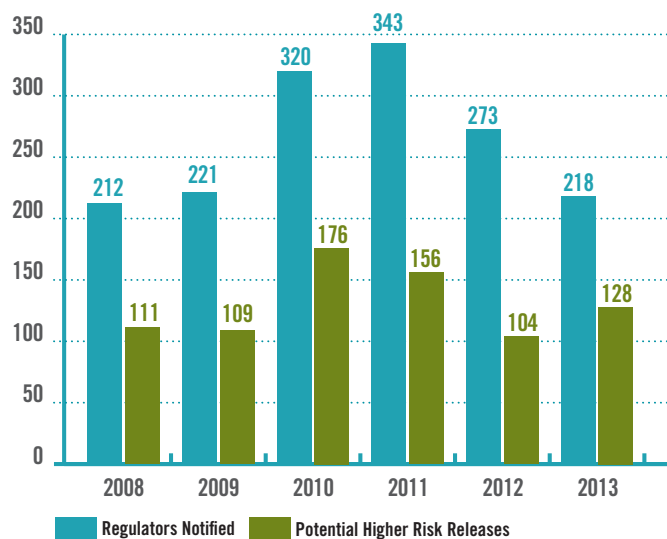
An Environmental Construction Operations (ECO) Plan consists of written procedures and drawings to identify and mitigate the potential environmental issues that may occur as a direct or indirect result of construction activities on a project site.

A range of leading edge technology and collaboration with subject matter experts across The City ensures that our construction projects proceed while protecting our environment and meeting legislative requirements. In 2013, The City had over 80 construction projects requiring ECO Plans. A pilot project was initiated to review if waste and recycling data could be collected from ECO Plan projects. As a result, the 2014 ECO Plan Framework requires our contractors to track the quantity of re-used, recycled and landfilled waste associated with their projects. This will assist in monitoring the Corporation's success in meeting the 80/20 by 2020 waste diversion strategy target.

releases (e.g. diesel fuel or hydraulic fluid) and confined to paved surfaces that have minimal impact. This decrease may be attributed a higher field presence by environmental specialists, review of release data trends in order to mitigate areas with elevated historical releases, and an increase in training efforts.

In 2013, the Calgary Fire Department (HazMat Division) led the review and update of the reporting procedures associated with the substance release program and documentation. The changes are expected to improve quality control and communication efficiencies with regulators.

Substance Releases Summary





Impact of Flooding – Summer of 2013

A State of Local Emergency (SOLE) was declared from 2013 June 20 to 2013 July 4 to manage the impacts from severe flooding. The Director of Emergency Management implemented an Order for The City to cease regular regulatory reporting in order to dedicate resources to mitigate the emergency. During this period, The City attempted to continue to report activities and non-conformances through regular channels where practical. The Order also directed The City to have regular regulatory reporting processes in place by the end of the SOLE. Flooding impacted many City operations and infrastructure. During the SOLE, The City's activities were directed to protect critical infrastructure and public health and safety as first priorities. During this time, The City continued where possible, to implement measures to mitigate the environmental impact of its own activities and those of others in the city.

Drinking water quality met provincial drinking water standards at all times and all standard operating procedures were followed while managing the poor condition of incoming raw water. Both Pine Creek and Fish Creek Wastewater Treatment Plants

remained operational during the flooding. The Bonnybrook Wastewater Treatment Plant was more significantly impacted during the flood event and was unable to fully meet regulatory requirements in June and July. Due to significant flood recovery efforts by staff and contractors, the Bonnybrook Plant is now fully operational.

The City developed protocols and messaging to citizens and contractors concerning dewatering and disposal of impacted material and appropriate disposal locations including Pine Creek Wastewater Treatment Plant. City collection trucks were on the road throughout the flood and landfills were open for extended hours to receive approximately 100,000 tonnes of impacted material. A corporate environmental recovery plan has been initiated as part of the larger recovery operations. The City of Calgary's regular regulatory reporting processes resumed as of the end of the SOLE on 2013 July 4.

Future Focus

- The City's Brownfield Strategy was originally approved in 2007 and will be reviewed in 2014 to reflect changes in current and best practices in brownfield redevelopment. This will result in brownfield programs being better focused and capable of achieving results.
- In 2014, The City will investigate opportunities to install temporary uses on vacant brownfield sites, such as community gardens or pop-up parks. This will not only create valuable community amenities, but it will also draw attention to brownfield issues and make the sites more attractive for permanent redevelopment.
- The City has nearly completed its goal to screen all City-owned land for contamination. In 2014, The City will begin a new phase of this project, which will involve in-depth investigation of some City-owned properties that require further environmental assessment. This will enable The City to have more knowledge for the assessment of environmental risks.
- The City will continue to screen residential and commercial development proposals and provide recommendations regarding environmental conditions. This will ensure that any existing contamination is addressed in order to protect human health and the environment.
- By the end of 2014, telecommunication companies will be required to adhere to The City's environmental guidelines with respect to the 2014 municipal access and consent agreements for installation of utility lines in municipal right of ways. Companies will be asked to develop an Environmental Construction Operations plan for their installations on City property. The City will monitor the work to ensure it is conducted in an environmentally responsible manner.

Protecting ecosystems



Goals:

- Calgary's ecosystems are healthy, connected and diverse and represent the breadth of our natural heritage (2020 Sustainability Direction).
- Maintain, protect and restore local ecosystems (Natural Area Management Plan).
- Protect the environment and public infrastructure, and ensure legislative compliance by controlling pest populations through scientific IPM principles and best practices (Integrated Pest Management Plan).
- Achieve and maintain safe, healthy trees (Parks Urban Forest Strategic Plan).
- Biodiversity objectives will be developed (Biodiversity Strategy).

Targets:

- 🎯 Ensure "no net loss" of significant wetlands (Wetland Conservation Plan).
- 🎯 Maintain the integrity of a high-quality and diverse park and open space system (Open Space Plan).
- 🎯 By 2020, significant landscapes and habitats in Calgary will be restored and/or reconnected (2020 Sustainability Direction).
- 🎯 By 2020, there will be an increase in the use of native plant xeriscaping in Calgary parks (2020 Sustainability Direction).

OUR IMPACT

Environmental stewardship and the sustainability of parks, open spaces, urban forests and wetlands are essential for maintaining an ecologically viable future for Calgary. The City manages Calgary's natural environment to protect ecological integrity and provide citizens with a place for recreation. Other benefits to managing natural areas include the potential to reduce damage by floods when low lying river lands are set aside as open space. The City of Calgary manages and conserves its resources through best practices in natural areas management, integrated pest management, urban forestry management, and environmental education, to protect our urban ecosystems.

STATUS AND TRENDING

The Wetland Conservation Plan allows for a variety of mechanisms to preserve the existing inventory of the city's wetlands. The primary objective when considering development plans is to preserve existing wetlands intact. If that is not feasible, alternate compensatory mechanisms are available to support the target of "no net loss" including constructed wetlands at alternate locations and a monetary contribution by developers to a fund for wetland preservation and development.

The targets included in the 2020 Sustainability Direction cited above were reviewed in 2013 and the wording of current targets and performance measures may be modified to facilitate improved monitoring and measuring, including the target related to no net loss of wetlands.



Strategies and actions

Natural Areas Management

Currently under development, the Habitat Condition Rating (HCR) is a snapshot tool that describes a park's ecosystem quality and can detect improvements or degradations to a park over time. The City will use this tool to evaluate our natural areas in 2014.

A biodiversity report and City Biodiversity Index (CBI) are in development. The CBI measures urban biodiversity and provides a benchmark to measure urban conservation. A number of internal and external engagement sessions for the biodiversity strategic initiative took place in 2013. A draft of the action plan is in preparation and will be presented to stakeholders in 2014.

The Early Detection, Rapid Response (EDRR) Program is a regional program that includes a number of local municipalities, as well as Alberta Parks and Parks Canada. This regional tracking and monitoring program establishes processes to identify, control and monitor any new occurrences of weed species that require control under the Alberta Weed Control Act. The program has proved to be a successful example of local co-operation and efficiency through shared resources. Control efforts are often done by volunteers.

Urban Forestry

Urban forestry is the management of the forest resources in urban community ecosystems for the ecological, social, economic, and aesthetic benefits trees provide. The City's Urban Forestry program supports the goals related to community well-being and sustainable environment in the 2020 Sustainability Direction. A healthy and safe urban forest has been linked with healthy and active adults and children. The urban forest helps to reduce greenhouse gas emissions, improve air quality and filter and slow down stormwater runoff. A sustainable urban forest is one that is diverse and connected.

In 2013, over 6,000 trees were planted through operational planting, sponsorships and programs to ensure Calgary's urban tree canopy is viable and expanding. The City maintained its Clean Plants Certification designation at the Pine Creek Nursery.

All recent audit recommendations to maintain this designation are being implemented to ensure that The City has a safe and healthy tree supply.

Through the Community Investment Fund, the Poplar Lifecycle & Species Diversity Project removed older declining poplar trees and replanted two new trees for each older poplar. The new trees are selected from a variety of species depending on site conditions and to support the goal of increased biodiversity.

The City seeks out opportunities to implement sustainable tree planting designs in Calgary. One such initiative is the 2nd Avenue NW streetscape improvement in Kensington that uses new tree planting techniques to provide more soil to tree roots.

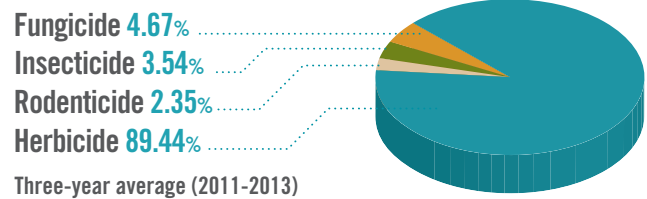


Integrated Pest Management (IPM)

Guided by the Invasive Plant Strategic Management Plan and the Integrated Pest Management Plan (IPM), as well as federal and provincial legislation, The City implements a variety of pest surveillance and plant health programs that enhance, sustain and protect Calgary's environment. Parks works with neighbouring municipalities and all levels of government to protect The City's assets, the natural environment, and biodiversity through ecologically sound best practices. These best practices are balanced with the need to incorporate pesticide use in some control decisions.

The IPM biological control program targets three invasive weed species using weed-specific insects that destroy the weeds. Seven new insect release sites were established in 2013. Three sites were inundated by water and sediment during the flood and may not be active in 2014. Twenty new release sites are planned for 2014. In 2013, compost tea and other soil enhancing products were used to help improve plant and soil health in approximately 38 hectares of turf grass covering 25 play fields and 40 tot-lot parks. These treatments will help to improve turf quality, diminish impacts of intensive use, and suppress weeds.

The pesticide category chart shows the relative proportion of herbicide, insecticide, fungicide and rodenticide used between 2011 and 2013. Herbicides were primarily used for the control of broad leaf weeds in turf and the control of invasive and legislated weeds. Insecticides were used for mosquito control and the control of urban forest pests. Fungicides were used on golf courses, and rodenticides were used to control rodents that posed a risk to public safety. The percentage of herbicide as a proportion of the total pesticide used varies somewhat from year to year, in response to field conditions, requirements for asset protection and changes in legislated requirements.



Future Focus

- The City Biodiversity Report is anticipated to be completed in 2014, which will include a biodiversity index and action plan.
- Two new studies, the iTree Eco project and the Urban Tree Canopy, will provide information on the distribution of the urban forest, its health condition and its environmental benefits. Both studies are anticipated to be completed in 2014.
- The Laycock Park wetland compensation project will start when regulatory approval has been received from the province.
- The City of Calgary is collaborating with the University of Calgary and Mount Royal University to study the behaviour of urban coyotes and vehicle conflicts with wildlife, and assessing additional opportunities to expand the citizen science program in 2014.



Reducing waste



Goal:

- Minimize waste generation and increase waste diversion (80/20 by 2020 Strategy).

Target:



By 2020, 80 per cent diversion of waste from City landfills (80/20 by 2020 Strategy and 2020 Sustainability Direction).

OUR IMPACT

The City creates various types of waste from its operations that contribute to Calgary's industrial, commercial and institutional (ICI) waste stream. It is estimated that ICI waste composes 39 per cent of the total waste from all sources entering the three City-owned landfills. A Corporate waste management strategy was developed in 2011 which identified four key goals: establishing accountability, establishing baseline data, minimizing waste generation and maximizing reuse, recycling and material recovery. City business units are implementing the strategy through waste reduction and management initiatives in a number of areas, from reducing waste in large construction projects to increasing waste diversion through the Green Office program.

STATUS AND TRENDING

In 2012 waste composition audits found corporate waste diversion rates were 37 per cent. Since then, mixed recycling and targeted waste diversion programs have been implemented. In 2014, follow-up waste composition audits will be conducted to measure programs and identify additional opportunities.

Strategies and actions

Building and construction materials recycling

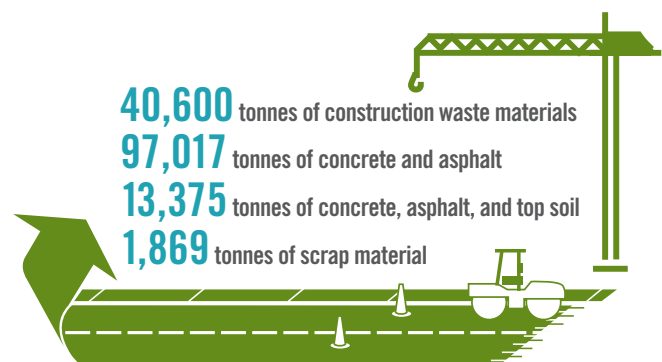
The City managed numerous construction capital projects during 2013, including the NW LRT extension, Edmonton Trail reconstruction, and the Heritage LRT pedestrian bridge. Transportation Infrastructure projects generated approximately 40,600 tonnes of construction waste materials and of that amount approximately 40,250 tonnes were diverted from landfills, representing an overall diversion rate of 99 per cent.

The City purchased and renovated a new building at 36th Ave S.E. During the renovation approximately 70 tonnes or 85 per cent of materials removed for the renovation were recycled. This included reusing materials where possible and reducing waste that will go to the landfill through recycling.

In 2013, the Local Improvement Sidewalks program recycled 100 per cent of concrete, asphalt, and top soil, which directly contributes to 80/20 by 2020 Corporate waste reduction target. As well, roads contract services recycled 97,017 tonnes of concrete and asphalt during 2013, representing 99 per cent of the waste produced. The City uses a mobile asphalt recycler which retains 95 per cent of the original asphalt content and provides comparable performance to the original material.

Corporate Scrap Materials Recycled trends

In 2013, The City recycled a total of 1,869 tonnes of scrap material. The materials recycled were sold, generating over \$411,600 in revenue. The amount of electronic waste recycled totalled 25 tonnes, a 8.7 per cent increase from 2012. The City continually searches for opportunities to increase the total amount of scrap materials recycled from one year to the next.



Green Office program

A mixed recycling program was expanded to 25 more City facilities in 2013. By December 2013, a total of 70 City facilities implemented mixed recycling program enabling City employees to recycle plastic containers, paper and cardboard, metal cans and foil, beverage containers, glass bottles and jars at their workplaces.

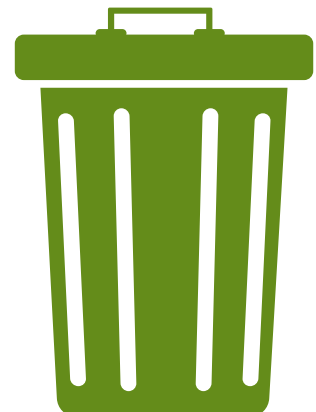
The City's 2013 Waste Reduction Week campaign ran in October, challenging employees to reduce their paper towel consumption. Based on comparative analysis of before and after the campaign, the Municipal Complex achieved a 13 per cent reduction in paper towel consumption.

Calgary Transit hosted its second annual electronic-waste recycling round up the week of May 13 to 17, 2013. A total of 3,820 kilograms of old TVs, computers, monitors, keyboards, printers, microwaves, stereos, and a number of other small electronic items were collected for recycling, a 17 per cent increase over last year.

In 2013, a highly successful Toss, Recycle, Information, Manage (TRIM) program was executed with the aim of recycling hard copy records and implementing the electronic conversion of business processes and documents. A total of 1,718 kilograms of paper material were recycled and another 2,000 kilograms of paper records were boxed up to be sent to off-site storage.

Future Focus

- To capture more reliable waste and recyclables baseline data, The City has purchased and installed weigh scales for 12 commercial collection trucks. In 2014, the quantity, location, and time of waste and recyclables collected from City buildings will be accurately measured and digitally recorded.
- The 2012 audits of 17 City facilities showed an average of 23 per cent of Corporate waste is organic. Organic waste can be diverted from the landfill by recycling it in a composting facility, this will be a focus for diversion programs in the future.
- Implementation of the Sustainable Environmental and Ethical Procurement Policy will continue by promoting sustainable vendor leadership practices and purchasing environmentally and ethically preferred products and services in priority purchasing categories such as apparel, chemicals and cleaning services.
- Office waste assessments will be conducted to increase the understanding of the composition and volume of waste and recyclables generated by various types of corporate facilities, identify areas for improvement, and set meaningful targets to address them.



Environmental Management System



EnviroSystem is The City's environmental management system, and is based on the international ISO 14001:2004 Standard. It helps to identify The City's environmentally significant activities and impacts, and establish meaningful targets to measure the success of The City's environmental programs.

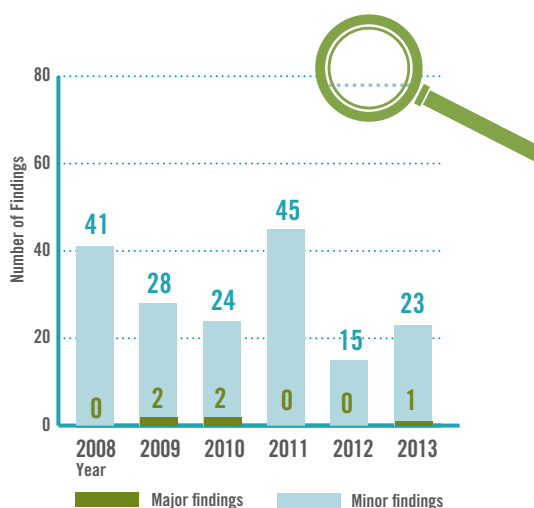
The City conducted eight internal and 10 external ISO 14001 audits in 2013. All external registrations were successfully maintained.

The total number of (internal and external) audit findings for all ISO registered business units increased to 24 in 2013 from 15 in 2012. There was one significant finding identified which related to the "resources, roles, responsibility and authority" element of the ISO 14001 standard. Corrective actions were identified and the finding was subsequently downgraded to a minor nonconformity. The effectiveness of corrective actions will be assessed in 2014.

Twenty-three findings were classified as minor findings, and corrective and preventive actions have been implemented or are being implemented. An overall downward trend in the number of findings is evident from 2008 through 2013. The observed year-to-year increase in 2013 may be attributed to the need for improved transition or business continuity plans, as a number of business units have hired new environmental coordinators or environmental specialists over the past year, and various business units underwent structural re-organizations. Historically, gaps in maintaining the systems such as periodic review and updates of documents occur during these transition periods.

In 2013, the "control of documents" element of the ISO 14001 standard had the highest number of findings. This element requires the organization to ensure all required documents are regularly reviewed, revised as necessary, approved and their distribution controlled. Measures have been implemented to address this gap and improve consistency across The Corporation, including leveraging technology and document management tools. The control of documents and records continues to present challenges, given the various advisory or guidance frameworks which are not always aligned including legal retention requirements, public interest and transparency, specific bylaws and legislation on freedom of information and protection of privacy.

During a heavy rainfall event, the Symons Valley sanitary lift station experienced significant flooding, which caused all electrical systems to fail and resulted in the spill of wastewater into West Nose Creek in August 2011. In April of 2013, a charge was laid against The City of Calgary by Environment Canada as it was alleged the spill was a violation of the Fisheries Act. The court adopted a sentencing proposal that Water Services had worked on collaboratively with Environment Canada — a \$10,000 fine and a requirement to invest \$190,000 to make engineered improvements in two other lift stations along West Nose Creek similar to those improvements made to the Symons Valley sanitary lift station.



Environmental awards and recognition



- The Mayor's Urban Design Awards (MUDAs) — In 2013, The City received five Honourable Mentions for the following projects:
 - Bowmont East Gate Park Plan – Conceptual/Theoretical Urban Design Projects
 - Cultural Landscape Strategic Plan – Approved or Adopted Urban Design Plans
 - Memorial Pathway Upgrades – Civic Design Projects
 - Nellie Breen Park Plan – Community Improvement Projects
- 2013 Alberta Recreation and Parks Association (ARPA) Parks Excellence Award – The City received the Parks Excellence Award for Poppy Plaza.
- 2013 Calgary Downtown Association Vitality Award — The City was awarded the Excellence in Urban Design award for the newly renovated Devonian Gardens.
- Canadian Society of Landscape Architects – In 2013, The City received a National Honours award for the Parks Cultural Landscape Strategic Plan.



Occupational health and safety performance





Occupational Health and Safety Policy

Working together for a safe and healthy workplace

Three Cs you should know:

- 1 Comply with legislation.
- 2 Commit to working safely.
- 3 Continually improve our safety performance.

The City of Calgary is committed to providing a safe and healthy work environment. This is reflected through the implementation of The City's Occupational Health & Safety Management System.

Safety is a shared responsibility that requires active leadership and participation from all employees. All employees are responsible for:

- Protecting the health and safety of themselves, their co-workers, contractors, suppliers, volunteers and the public.
- Understanding and meeting their health and safety roles and responsibilities.
- Complying with occupational health and safety legislation requirements.

Owen Tobert, P. Eng.
City Manager
April 2012

The City will meet this commitment by:

- Meeting occupational health and safety legislation requirements.
- Continually seeking innovative ways to improve occupational health and safety performance.
- Supporting early and safe return to work initiatives.
- Proactively managing risks to prevent workplace injury, illness or loss to employees, contractors, suppliers, volunteers and the public.
- Providing education, training and competency evaluations to ensure employees understand and meet their health and safety responsibilities.
- Measuring progress by implementing occupational health and safety objectives, audits, inspections and evaluations.
- Assessing compliance with health and safety requirements, and acting to address issues, including using disciplinary measures if necessary.

Safety. We're all responsible.

mycity/safety



THE CITY OF
CALGARY

Onward/ Improve health and safety of all employees.

2013-0895



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Promoting safe work practices



Goal:

The City of Calgary's 2012 Occupational Health and Safety Policy states that we will continually seek innovative ways to improve occupational health and safety performance, and proactively manage risk to prevent workplace injury.

Target:

🎯 No targets currently exist. As part of the Corporate Safety Strategy, performance measures are being considered for 2015 — 2018 that will assess progress and drive improvement toward safer work practices.

OUR IMPACT

The City provides over 600 different services to citizens, and some of these entail workers being exposed to inherently hazardous conditions. The City's Occupational Health & Safety Management System must not only meet all legislated requirements to protect workers from hazards and prevent injuries, but proactively identify hazards, learn from incidents and continuously implement practices to prevent injuries.

Strategies and actions

Corporate Safety Strategy

In 2013, a Corporate Safety Strategy (CSS) was developed and approved by the senior leadership team in recognition of a need to more strategically and consistently address gaps in The Corporation's management of safety issues. The CSS recognizes that in order to bring about real change in safety performance, The City must think, talk and act differently about all aspects of safety.

The 2014 — 2018 Corporate Safety Strategy aligns with departmental safety work plans by identifying initiatives that address the five strategic results areas: safety culture, leadership, governance, programs and services, and evaluation and measurement.

The Corporate Safety Strategy identifies opportunities to strengthen our safety culture across the organization and mandates a strong governance model with a clear accountability framework. Clear expectations are detailed for the implementation of corporate policy, standards and programs. It defines expectations for management involvement and supports all leaders in fulfilling The City's obligation to ensure the health and safety of all employees.

The Corporate Safety Strategy together with the Strategic Action Plan provides the high level overview and direction for 2014 — 2018. Implementation will take place through the creation of detailed annual work plans to be approved by a safety governance committee comprised of senior management representatives. Progress on the work plans will be reported to senior leadership twice yearly.

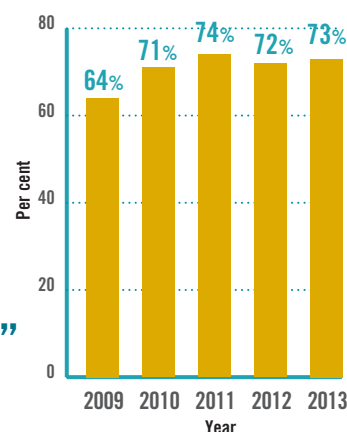
Tracking employee perception

The City surveys its employees annually to provide senior management with a snapshot of employee opinions and to identify areas for improvement. The survey includes the statement, "My working conditions are safe," with responses ranked on a scale of one to five (one being "strongly disagree" and five being "strongly agree").

The 2013 survey results indicate a slight increase (one per cent) in the "agree/strongly agree" category of responses to this statement, compared to 2012. An increased focus on occupational health and safety was incorporated into many employee communications across The Corporation in 2013.

"My working conditions are safe."

Corporate score



Corporate Emergency Response Plan program

The City completed an emergency response gap and opportunity analysis in 2013. An Emergency Response Plan (ERP) pilot project team was formed to develop ERPs for the Manchester Operations Workplace Centre and the Municipal Complex. Emergency Response Plan templates, an organizational structure, and training plans are under development. A learning management system was selected, with e-learning modules and video development underway.

North American Occupational Safety and Health (NAOSH) Week – May 2013

During North American Occupational Safety and Health (NAOSH) Week, The City reinforces key safety topics linked to the organization's safety priorities for employees and frontline supervisors.

For the 2013 NAOSH week, The City developed new table-top drill templates on a variety of emergency scenarios for leaders to use with their employees. In addition, many activities focused on raising awareness of, and reducing, injuries related to specific operational risks. An example includes programs to address repetitive strain injuries for employees operating heavy equipment or vehicles on a daily basis.

Occupational health and safety programs

Many programs are in place to keep employees healthy and safe at work. Safety communication tools and resource materials aimed at reducing the most common workplace injuries were made available to all employees throughout 2013. The tools were designed to improve two-way communication flow between leaders and employees on a variety of safety issues. The resource materials were timed to align with seasonal safety hazards (e.g. heat exhaustion during July and August; winter driving and risk of slips, trips and falls in November and December).

In 2013, activity-specific programs or support tools were upgraded throughout the organization, such as handling chemicals (new material safety data sheet on-line program), ergonomics and monitoring the effects of noise exposure. Various activity-specific programs were also implemented, such as the use of safety task observation forms and refresher training on hazard identification and control and incident investigation.

Contractor safety management

In recent years, contractor safety incidents, audit findings and a review by the province's Partnerships in Injury Reduction highlighted the need for improvements in how The City manages health and safety issues associated with contractors. In 2013 the current process was analyzed and recommendations were made to help mitigate risks relating to contractor safety management.

Future Focus

- The findings of the corporate-wide Certificate of Recognition (COR) safety audit will be used to identify areas most in need of improvement and inform safety risk registers and 2014 work plans.
- The Corporate Safety Strategy created the framework and articulated the focus for the organization over the next five years for improved safety performance in the five strategic result areas. The majority of actions will target the behaviours of both organizational leaders and employees and will align existing corporate systems and processes to support the evolution of The City's safety culture. Implementation will be initiated in 2014.
- The City is developing ERP documents and a training and exercise strategy for the pilot project by the end of 2014. A pilot project review will be conducted with ERP sustainment and corporate roll-out strategy development to follow.



Reducing injuries and their impact



Goal:

By 2020, The City of Calgary's recordable injury rate is best in class for Canadian municipalities (2020 Sustainability Direction).

Target:



Reduce the corporate-wide lost time claim (LTC) frequency to 3.9 in 2013 (Utilities & Environmental Protection 2013 Business Plan performance measure 6.2).

OUR IMPACT

Fostering a safe and healthy work environment for all City employees is the foundation of our Occupational Health & Safety (OHS) Management System. Preventing injuries is the primary goal of The City's OHS management system and programs. Once an injury has occurred, the focus moves to returning the employee to the workplace safely and quickly.

STATUS AND TRENDING

The City met its 2013 target for reduction in lost time claims frequency. A further 10 per cent reduction is targeted for 2014, and monthly reporting on the status of the LTC frequency and trending provides senior managers with the tools to address areas of concern.

Strategies and actions

Reducing lost time incidents

At the water treatment facilities, the use of a Safety Task Observation (STO) form was effectively rolled out in 2013 to all foremen, supervisors and leaders as a vehicle to focus more on behaviour and culture as it relates to safety and the tasks that are being completed. All foremen and supervisors performed STOs of workplace safety inspections, which contributed to zero lost time claims at these facilities. The City continued to upgrade lift stations to better manage fall protection hazards.

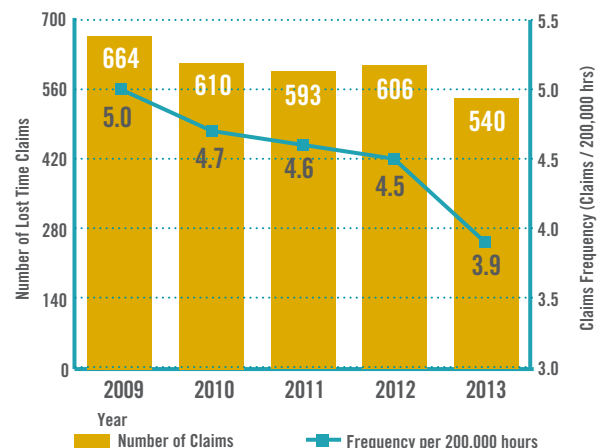
The Calgary Fire Department's (CFD) workplace inspection program was revamped in 2013 with an online training module

to ensure individuals responsible for conducting the inspections are knowledgeable and trained. The workplace inspection procedure was changed to ensure identified corrective actions from previous audits are addressed and open issues are tracked, monitored and reported by the health, safety and environment section. Enhancements to CFD incident reporting procedures and forms with an online educational module was also completed to improve the quality of incident investigations and identify root causes.

Lost time claims

Lost time claim (LTC) frequency is a measure of the number of employees away from work due to a work-related injury or illness, for every 200,000 hours worked. The 2013 corporate LTC frequency target of 3.9 was met and the statistics showed marked improvement in both the frequency and total number of claims compared to 2012. This was due largely to the collective actions undertaken by each business unit to address the workplace hazards associated with their activities, and The City's safety advisors supporting leaders in achieving their safety goals. The total number of claims and frequencies shown in the graph to the right may differ slightly from the data reported in previous years. The total number of claims in a given year can change over time as claims are reviewed.

Lost Time Claim Frequency (Exposure Hours)



Reducing duration of absence due to injury

In 2012, The City initiated the Corporate Workers' Compensation Board Protocol project with the objective of reviewing and changing existing policies, practices and programs to better support injured workers in their transition back to the workplace. Part of this work included launching a half-day training course for supervisors to help them understand their role when one of their employees are injured or become ill as a result of a workplace incident. The course was attended by approximately 250 City staff in 2013, mostly supervisors, foremen or those engaged in safety and/or preventing or managing injured workers. By providing accommodated work opportunities, workers return to work in a safe manner while accomadating their injury-related restrictions.

The results of an analysis of the most frequent types of employee injuries over the past five years indicates that sprains and strains continue to be the most frequent type of worker injury. Slips, trip and falls are the top causes of these injuries. Business unit or activity-specific injury reduction programs were developed or continued to be implemented by the business units who have the largest number of staff impacted by these types of injuries.

Future Focus

- The City's Occupational Health and Safety Policy commits the organization to improved monitoring and measurement of safety performance. More meaningful performance measures, including both leading and lagging indicators will be developed in 2014 for the 2015 — 2018 business cycle. This will support the 2020 goal of being "best in class" for recordable injury rate in Canadian municipalities.
- Subject to direction from the senior safety governance committee, a job bank will be created with appropriate work for injured or ill employees. This will support The City in getting employees back to work as soon as it is safe, which is beneficial for the injured employee and his or her team and may prevent a lost time claim.



Occupational Health & Safety Management System



Goal:

The City of Calgary is committed to providing a safe and healthy work environment (2012 OHS Policy). This commitment is reflected through the implementation of The City's Occupational Health & Safety Management System.

Target:



Attain a corporate score of 90 per cent for the 2013 Certificate of Recognition external safety audit (Utilities & Environmental Protection 2012 Business Plan Performance measure 6.1).

OUR IMPACT

The City's Occupational Health & Safety (OHS) Management System is certified to the Certificate of Recognition (COR), a voluntary program administered by Alberta Employment and Immigration. The OHS Management System provides a framework for all business units to meet the safety management standards set out in the COR program. This program ensures a consistent approach in the management of health and safety in the workplace to minimize injury and illness to employees and contractors.

STATUS AND TRENDING

The City achieved a score of 89 per cent on its 2013 COR safety system audit. The external auditors indicated that this represents an effective and well communicated occupational health and safety system for an organization as large and complex as The City of Calgary.

Strategies and actions

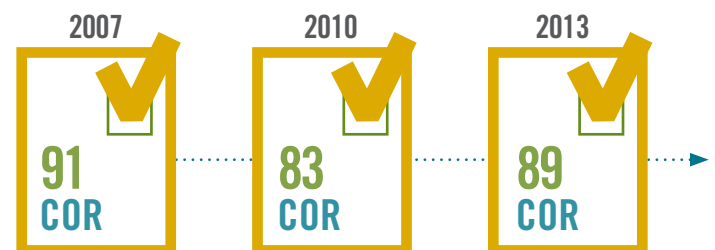
Corporate safety management system

In 2013, an external corporate Certificate of Recognition (COR) audit was conducted. The City achieved an overall score of 89 per cent. Action plans have been developed for 2014 to address the findings from the external COR audit report, in alignment with safety risk registers for each department to facilitate prioritizing work plans and establishing targets and performance measures that will drive improvements. As part of the Corporate Safety Strategy, the terms of reference were developed for a safety governance committee comprised of senior management representatives. This committee will provide corporate-wide guidance on prioritization of safety initiatives as the 2015 — 2018 action plan is developed.

The City has consistently and successfully remained certified to the Certificate of Recognition (COR), scoring above the passing grade of 80 per cent in the past three external COR audits. The 2013 external audit report indicated that employee feedback

confirmed a high level of knowledge and involvement in the health and safety program at all levels of the organization, based on interviews with approximately 440 City employees.

In 2013, Alberta Occupational Health and Safety issued six demands and two compliance orders related to four incidents at The City. In all cases the respective areas worked with Alberta Occupational Health and Safety (OHS) officers to resolve the issues, and the demands and orders were subsequently closed.



Safety data management system

The City of Calgary progressed with planning the Safety Data Management System (SDMS) in 2013, completing the functional and technical requirements and preparing work flow diagrams. A request for proposal was issued, seeking a technology solution provider to meet The City's needs. The contract will be

awarded in 2014, and implementation will enable consistent and accurate reporting on corporate safety performance in a more timely, efficient and transparent manner.