Summary

Population: 213,780

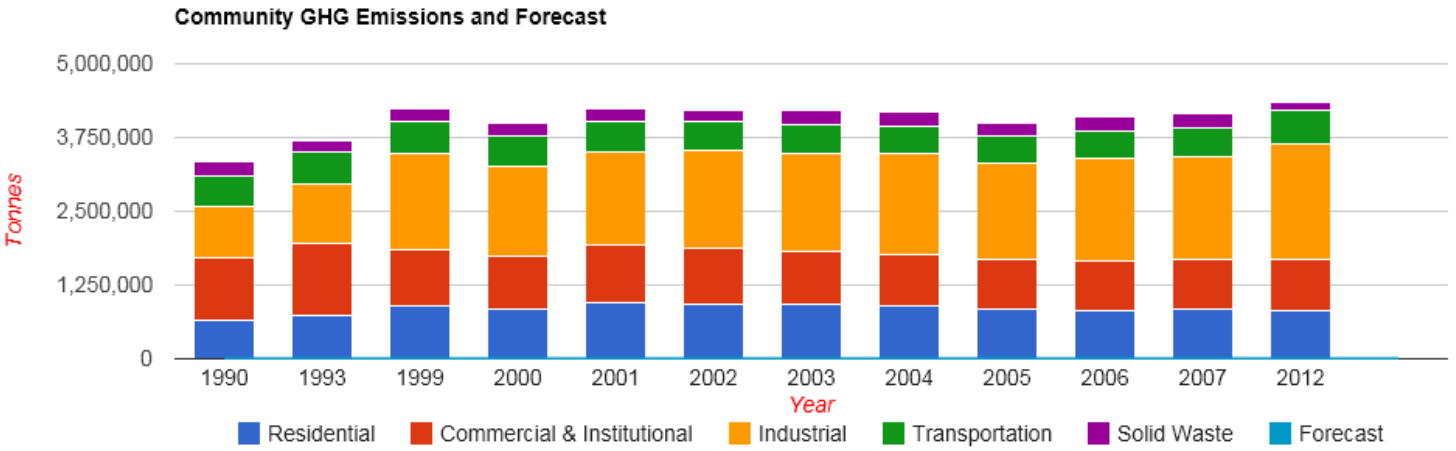
PCP member since 1994

The City of Regina is one of the original members of the "20% Club," re-launched as Partners for Climate Protection (PCP) in 1997. The City of Regina was the third municipality in Canada to commit to reducing its greenhouse gas (GHG) emissions. Regina's Local Action Plan (LAP) process was led by the Green Ribbon Community Climate Change Advisory Committee. Council formed the committee and its work was transparent and easily accessible to all residents.

In 2003, FCM and the City of Regina hosted a Municipal Leaders' Forum to discuss the local government role in GHG emissions reduction. Delegates drafted a list of recommendations to the federal government. This led to the endorsement of a Municipal Leaders Resolution on Climate Change by 290 local governments. Similar to Canada's targets under the Kyoto Protocol, the PCP target recommended for community GHG emissions reductions was also 6% below baseline emissions, within a 10-year timeframe.

Community Greenhouse Gas Emissions

Community target (1994): reduce community greenhouse gas emissions in the geographic area of Regina by 6% below 1990 levels by 2012.



Please note there are no forecasted emissions included.

Community Emissions Calculations

Community greenhouse gas emissions in Regina were about 4.1 million tonnes in 2001, compared to 3.5 million tonnes in 1990. To meet City Council's target, the Regina community would have had to reduce its emissions by 6% of 1990 levels by 2012 - a reduction of 210,000 tonnes. In other words, 2012 community emissions should have been reduced to 3.3 million tonnes.

Community emissions calculations for Regina were first calculated by the City in 1990. In 1999 these calculations became an annual task when the "Cool down the City" program was initiated. In 2008, conversations at the City of Regina around emissions reduction initiatives and sustainability began to turn inward. Attempts were made to establish a corporate-wide committee on emissions reduction, and a

corporate sustainability plan was explored. Then, in 2009, the City of Regina embarked on a four year process of reviewing and redeveloping its Official Community Plan, which also acts as Regina's Community Sustainability Plan. "Design Regina" was approved by Council in December 2013 and by the Province of Saskatchewan in March 2014. Due to the scope and resources required for the Design Regina project, GHG emissions efforts were put on hold from 2007 to 2014.

Methodology

Since the original inventory was developed in 1990, there have been notable changes to the ways that the City of Regina has quantified and reported on GHG emissions, in particular corporate emissions. To ensure that the City is comparing "apples to apples", all previous annual inventories were uploaded into the new PCP Milestone Tool in 2013. The PCP Milestone Tool applies a consistent methodology across all of the inventory sectors for each inventory year. It is easy to use and has made emissions calculations year over year much less onerous.

NOTE: The 2012 solid waste value using the "methane capture" option within the PCP Milestone Tool provided significant increase in GHG production than just the waste generation method. It has not yet been determined where exactly the difference lies. Currently the 2012 solid waste value is an estimate and will need to be looked at further before moving forward with future reporting.

Community Local Action Plan

Regina City Council established the Green Ribbon Community Climate Change Advisory Committee, or Green Ribbon Committee (GRC) as it became known, to develop an action plan and implementation strategy to successfully achieve City Council's community GHG emission reduction target. The GRC was comprised of 16 community stakeholders and one City Councillor, with the Mayor as an ex-officio member. There was a focus on obtaining representation from key stakeholder organizations such as the local home builders association, utility providers, school boards, and other interested organizations.

The Green Ribbon Community Climate Change Advisory Committee held its first meeting in January 2001. As a primary step, the Committee created five subcommittees to best deal with specific focus areas: Education, Residential, Industrial and Commercial and Institutional (ICI), Transportation, and a subcommittee of the Chairs of the other subcommittees.

Each subcommittee created its own "mini action plan" which made up the final "Green Ribbon Advisory Committee Community Emissions Reduction Action Plan". This was Regina's "Local Action Plan". The plan included 58 recommendations and was approved in principal by Regina City Council in January 2004. To date, 36 of the proposed 58 recommendations have been implemented, including actions targeting general education and awareness as well as GHG emissions generated by the residential, ICI and transportation sectors (see table below).

LAP Implementation Summary

Sector	**No. of Measures Implemented**	**No. of Measures Recommended**
Education	9	10
Residential	6	7
ICI	13	18
Transportation	8	23
TOTAL	***36***	***58***

Community Engagement

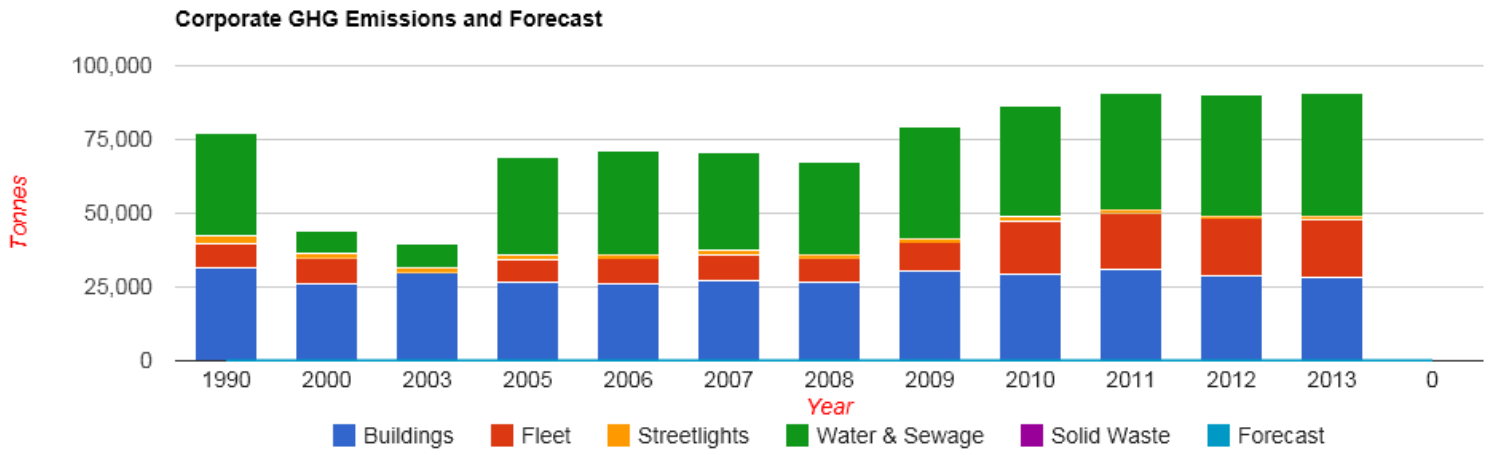
The Green Ribbon Committee held education and outreach in high regard, and implemented a number of these initiatives from their local action plan with strong support from City of Regina Administration:

- A booth at the annual Regina and Region Home Builders' Association Home and Garden Show with surveys and prizes for booth visitors;
- Three print runs of Regina's *Green Book: Smart Ways to Save*, a publication which promoted sustainable living and highlighted partner programs and initiatives;
- A Green Report email distributed bi-weekly to interested Regina residents;
- "The Green Report" radio show, a weekly program which ran for four years and featured interviews on local sustainability-related programs and initiatives;
- Multiple Anti-Idling initiatives including a school outreach program with Climate Change Saskatchewan, a City of Regina employee awareness campaign, signage in the community, and an idling monitoring project; and
- Participation in and promotion of partner programs such as the SaskEnergy Home Energy Efficiency Program and a SaskPower CFL bulb give-away and rebate.

After the City of Regina conducted an Advisory Committee review in 2009, the Green Ribbon Advisory Committee was rolled up into the newly established Environment Advisory Committee. The LAP was considered in the creation of the Environment Advisory Committee work plan.

Corporate Greenhouse Gas Emissions

Corporate target (1994): reduction of greenhouse gas emissions by 20% below 1990 levels by 2005, and further reductions of 1% each year thereafter until 2012. Corporate GHG emissions reductions of approximately 5% were achieved between 1994 and 2008 (see table below). In 2008, City Council decided to revise the corporate GHG target to 15% below 1990 by 2012. Despite undertaking a range of corporate energy conservation and GHG emission-reduction initiatives, pressures on municipal operations and services have continued to grow and, consequently, the municipality's corporate GHG emissions reduction targets were not met in 2012. The City continues to monitor and calculate its annual GHG emissions and is currently in the process of determining next steps with regards to setting a second-generation target for a new commitment period.



Please note there are no forecasted emissions included.

Design Regina: Community Sustainability

When the City of Regina embarked on the development of a new Official Community Plan, it took the opportunity to build in a new corporate and community approach to sustainability. Design Regina, the official community plan, therefore also acts as the community sustainability plan. The plan contains a comprehensive policy framework that will guide the physical, environmental, economic, social and cultural development of the city. Regina is grateful for the support provided by FCM's Green Municipal Fund for sustainable community planning.

Regina's Emission Reduction Highlights

1. Regina's Green Book: Smart Ways to Save

A consumer guide on energy and fuel efficiency titled, "Regina's Green Book: Smart Ways to Save" was first developed in 2005. The final product was a 32 page, full color magazine-style booklet. Between March 2005 and November 2006 over 21,000 copies of the first edition were distributed, mainly through hand-to-hand delivery at community events in Regina and area. Due to the successful uptake of the Green Book, two more editions of "The Green Book" were produced. The second edition of "The Green Book" was produced and printed in November 2006. The full run of 5,000 copies was distributed by mid-2007. The first two editions were published with funds available under the "One Tonne Challenge" Community Challenge program. The third edition of "The Green Book" (5,000 copies) was produced with funds from the City of Regina. It was also fully distributed by the end of 2008.

2. Building Retrofits for Energy Savings:

In 2002, the City of Regina entered into an Energy Service Company (ESCo) contract with Honeywell to conduct energy audits in six of its major municipal facilities. Honeywell conducted heating, ventilation, air conditioning (HVAC), electricity and other equipment evaluations of several facilities. The City then chose buildings with the greatest energy use for retrofits. Regina also partnered with SaskPower, the provincial electricity utility, to provide support for the project.

The City invested approximately $2.4 million in building upgrades:

- Upgraded lighting with energy efficient alternatives,
- Improved heating and ventilation systems, and
- Additional energy efficient retrofits.

Under the contract, Honeywell performed all the upgrades for the City between 2002 and 2004. Savings were higher than originally anticipated, for a combined payback of about 10.5 years. Between 2002 and 2008 electricity use at City Hall, for example, was reduced by about 23%, while natural gas use dropped by almost 42%. Overall, the upgrades reduced annual GHG emissions by almost 2500 tonnes.

3. Energy Efficiency in New Construction

3.1. City of Regina Firehall (LEED Gold Certifiable)

Completed in 2010, Regina's newest firehall is 53% more efficient than a typical building constructed to current building code requirements. The electricity consumption of the building is 381 mj/m^2 and the natural gas consumption is 493 mj/m^2. Occupancy sensors are used to reduce lighting energy consumption levels to 42.2 kWh/m^2. The water consumption is 2.5 cubic litres per occupant per year which represents a 51% reduction over similar buildings. And there is a Green

Power contract in place to ensure that at least 50% of the power for two years comes from an EcoLogo certified source.

3.2. City of Regina Parks and Facilities Administration Office

Completed in 2008 the City of Regina's Parks and Facilities building was built to LEED Silver standards. A high performance building envelope consisting of R30 walls, R40 roof and double paned, Low E windows. The heating system will utilize condensing hot water boiler technology with an operating efficiency exceeding 90%. High efficiency mechanical equipment with heat recovery systems are in operation within the building.

4. Fleet Efficiency

Fleet Services has long considered the efficiency of its fleet as an important objective. As far back as the early 1990's this was apparent with the wide scale purchase and retrofit of fleet vehicle to natural gas. In 2005, City of Regina Fleet Services division presented their *GreenFleet* report, which outlined a number of measures for increasing the efficiency of the City's corporate fleet:

- Added 20 hybrids to corporate fleet,
- Installed 50+ auxiliary heaters in vehicles and equipment to reduce engine idling in the winter,
- Included fuel saving and emission reducing technologies in selected Fleet tender specs,
- Offered "Smart Driver" training for Transit operators, and
- Included fleet efficiency initiatives into staff Professional Development Evaluations.

5. Anti-Idling Initiatives

In 2006 the City of Regina and the Green Ribbon Committee teamed up with Climate Change Saskatchewan to provide presentations to students at over a dozen Regina schools. "Idle Free Zone" signs were provided to each school. These signs were also posted throughout Wascana Centre in another key partnership with Wascana Centre Authority.

The following year (2007/8) Idle Free Zone signs were posted at City Hall, four major recreation facilities, all indoor ice rink facilities, and the Fleet yard. Fleet operators were provided with key tags reminding them to reduce idling times. As part of the sign postings at the rinks, the City of Regina undertook a vehicle monitoring project funded by the provincial Ministry of Environment 'Green Fund' to determine any change in vehicle idling. It was noted that while idling times did not decrease, the instance of idling vehicles was reduced. .

6. Alternative Transportation Initiatives

The City of Regina has been a long-time participant and community coordinator for Commuter Challenge since the early 1990's. Another key initiative in this area is the Regina Carpool.ca partnership between the City of Regina and other local organizations that has been in effect since 2005. Partnering is an effective method of moving initiatives forward, as also evidenced with the City of Regina recently providing a space t o Regina Car Share for one of their two car share vehicles.

7. Water Conservation

The City has had a Water Conservation Program since 1985 and initiated an enhanced program in 1991. The primary goals of the program are to reduce the average per capita water consumption and the peak day water use. The program enhancements in 1991 involved setting strict new targets and expanded the water consumption program to delay infrastructure expansion costs:

- Pricing Structure: fixed price per household was replaced with a fee for each cubic metre of water consumed.

- Communication: disseminated information and advice that emphasizes the message "save water, save money.
- Water Meter replacement: since 2002 the City has replaced approximately 50 000 meters installed before 1992; these old meters typically under-measured water consumption. The new meters relay consumption data by radio.

The City's annual water consumption decreased from a high of 39 billion litres in 1988 down to 28.5 billion litres in 2007. Water consumption levels have remained relatively level around 2007 levels since that year.

Metered Water Consumption

YEAR	CONSUMPTION (million cubic metres)
1995-1999	24.4*
2000-2004	23.8*
2005-2009	22.7*
2010	21.1
2012	22.1

* five year average

Water infrastructure projects that contributed to energy efficiency include two new water distribution pumps commissioned at Buffalo Pound in 2004 and 2007. The electricity consumption trend for 2008-2012 shows electricity consumption per ML of drinking water treated and delivered has been relatively flat, with a slight increase in 2012.

8. Biogas Use at Waste Water Treatment Plant

Using 15 years of data, 1998-2013, the average annual digester gas quantity used by the boiler system was around 900,000 m^3. If the City was not using the biogas, it would heat completely with natural gas. As the heating value of biogas and natural gas is different, this would mean that the City would have had to purchase approximately 540,000 m^3 per year of natural gas. Assuming $13/GJ for natural gas, an average $260,000 per year was saved not purchasing natural gas to heat. This means 2800 tonnes of GHG emissions annually are kept out of the atmosphere.

9. Waste

91.Landfill gas

The City of Regina commissioned a landfill gas collection and flaring system in April 2007. The capture and combustion of landfill gas was a project voluntarily undertaken by the City of Regina as a means to reduce landfill gas migration, enhance odour control, and reduce greenhouse gas emissions.

The landfill gas collection system consists of a collection field of 27 vertical wells within the refuse mass, collection piping, an extraction plant, a condensate management system and a landfill gas flare. Methane traps 21 times more greenhouse gases than carbon dioxide (CO^2). Combustion of the landfill gas reduces the impact on the atmosphere. Through this process, approximately 23,957 tonnes of CO^2 were destroyed in 2012. Since installation, the project collects and destroys an average of 120 tonnes of methane each month.

9.2 Recycling program

Household recycling was introduced in Regina in 2013. The current waste diversion rate is 18.4%. The City is working toward an overall 40% diversion target.

Challenges

- Connecting the big issues of climate change to the local level. (Regina does not have air pollution issues or visible environmental damage)
- Growing city = growing emissions profile for both community and corporate.
- Consistency in annual calculations in terms of what is considered a community emission and what is a corporate emission.
- Accurate community emissions data is difficult to obtain since the utilities do not maintain appropriate data on community-wide energy use. As well, fuel data is not collected locally and must be purchased by an out-of-province company.
- Changing priorities at Council and other levels of government can affect progress to move forward on climate change issues by affecting budgetary and staff resources. As well, maintaining council awareness about climate change and GHG issues is an ongoing challenge with new council members every four years.

Lesson Learned

- Be realistic about your commitments and emissions reduction goals -corporate and community.
- It is important for the City to connect with its local electricity and natural gas utilities to collect the data required to complete Milestone 1 and for annual emissions calculations.
- Work inter-departmentally and try to determine and choose projects that are attached to corporate or community goals or priorities.
- Having a group of stakeholders – in this case the Green Ribbon Committee – brought partners to the table to participate in the development of the local action plan and encourage participation in the implementation of the plan. More was accomplished by combined efforts of the partner organizations than could have been done by the City alone.

In Memoriam: Councillor Mike Badham (1941-2006)

Regina's early participation in 1994 in the FCM Partners for Climate Protection program is due largely to the commitment of Councillor Mike Badham. Badham was first elected to Regina City Council in 1991. Mike also represented the City of Regina on the FCM Executive and Board of Directors and served as Chair of FCM's Prairie and Territorial Regional Caucus. He chaired the *InfraGuide* council 2000-2005, a national network of professionals and experts in municipal infrastructure.