

*The Cities for Climate Change Protection*

*Local Action Plan for CO<sub>2</sub> Reductions  
Bathurst, New Brunswick*



First Report: May 30, 2002

**Updated: October 2007**

This report has been produced by Bathurst Sustainable Development for the City of Bathurst with the assistance of Natural Resources Canada, The Federation of Canadian Municipalities, the City of Bathurst and the International Council for Local Environmental Initiatives, and Ralph Torrie of Torrie Smith Associates.

## **Cities for Climate Change Protection Project- Sustainable Communities Initiative**

In April of 2000, Bathurst Sustainable Development was accepted as one of the Sustainable Communities of Natural Resources Canada. Shortly thereafter, both the City of Bathurst and Bathurst Sustainable Development jointly signed an international resolution making them one of the 81 Canadian Municipalities to join the Partners for Climate Change Protection.

Bathurst Sustainable Development, through our Sustainable Communities Initiative project, sponsored by Natural Resources Canada and using the Torrie Smith Greenhouse gas Emissions Reduction software, completed an energy audit for the years 1995 and 2002.

This information was presented to council in the form of a **Green Plan for Local Action to Reduce Emissions** which included graphs, pie charts, a Greenhouse Gas GIS Map produced using Arc View and a written report of the results of a City wide energy audit we conducted in the City and an action on how best to reduce our emissions.

The project has also provided two years of GIS (Geographical Information Systems -digital mapping) training for our Community Development Coordinator.

In April of 2000, the City of Bathurst signed an international resolution making them the 81 Canadian Municipalities to join the Partners for Climate Change Protection.

The goal of the Local Plan of Action is to reduce city wide emissions by 20% below 1990 levels by 2010 in order to meet our commitment made when we signed the Cities for Climate Change Resolution.

- 1. The total city wide emissions produced from all sectors within the city in 1995 was : 154,950 tons of CO<sub>2</sub>**
- 2. The total city wide emissions produced from all sectors within the city in 2000 was : 201,394 tons of CO<sub>2</sub>**
- 3. Increase since 1995- 32 %.**
- 4. 2006 Update: 32% (Canadian average) increase since 2000: 265, 840 tons of CO<sub>2</sub>.**

Approximately 10% of this increase is due to the Provincial Co-Efficient- the GHG emissions produced by the source of the Provincial Power - A higher co-efficient is allocated to sources such as power generated by ore emulsion and a lower co-efficient is allocated to green energy sources such as wind, hydro, and solar generated power.

Since the reduction of greenhouse gases is critical to slowing the rate of global warming and thus lessening the negative impacts on our city, it is imperative that a formal plan of action be developed and implemented to reduce the level of GHG that we produce.

**Target Reduction:** 20% below 1995 levels= 123,960 tonnes of CO<sub>2</sub>

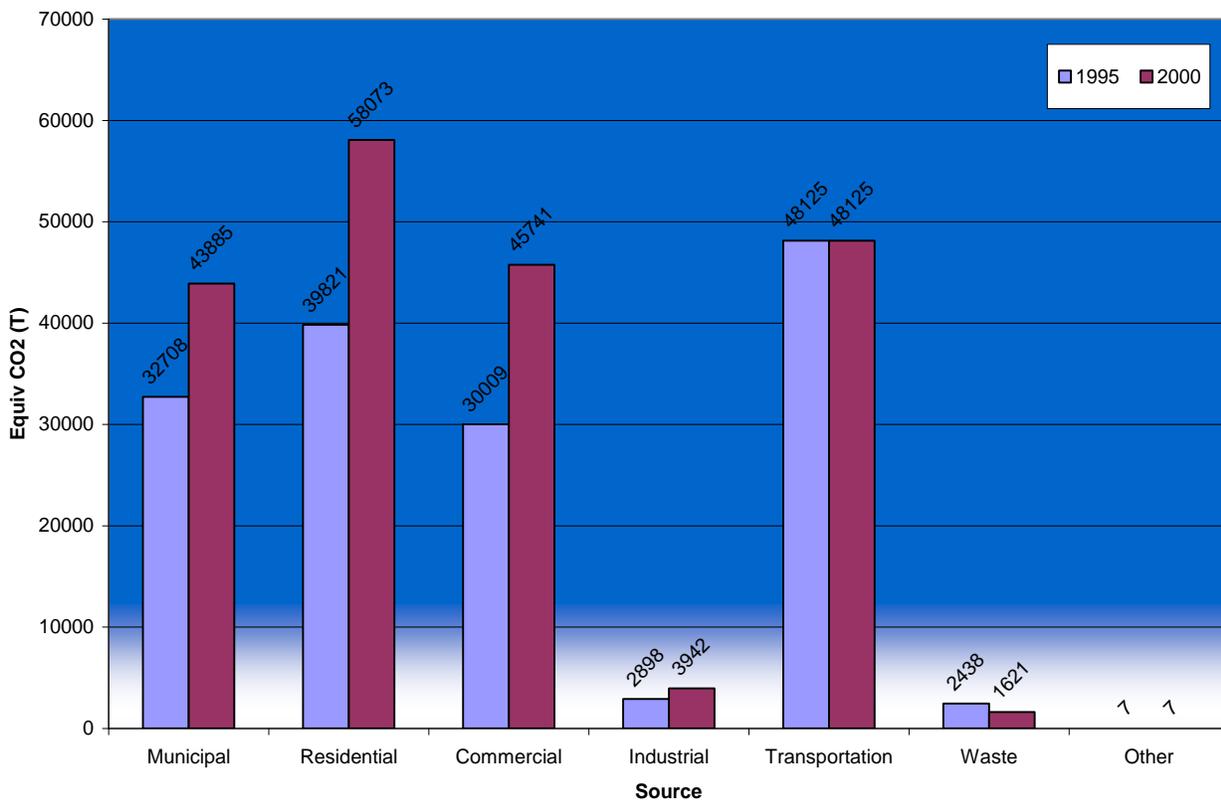
**Reduction required:** 141,880 tonnes of CO<sub>2</sub> annual total citywide level of GHG emissions)

As joint members of The Partners for Climate Change Program and signatories to the Cities for Climate Change Protection resolution, our commitment is to develop and implement a plan of action that will

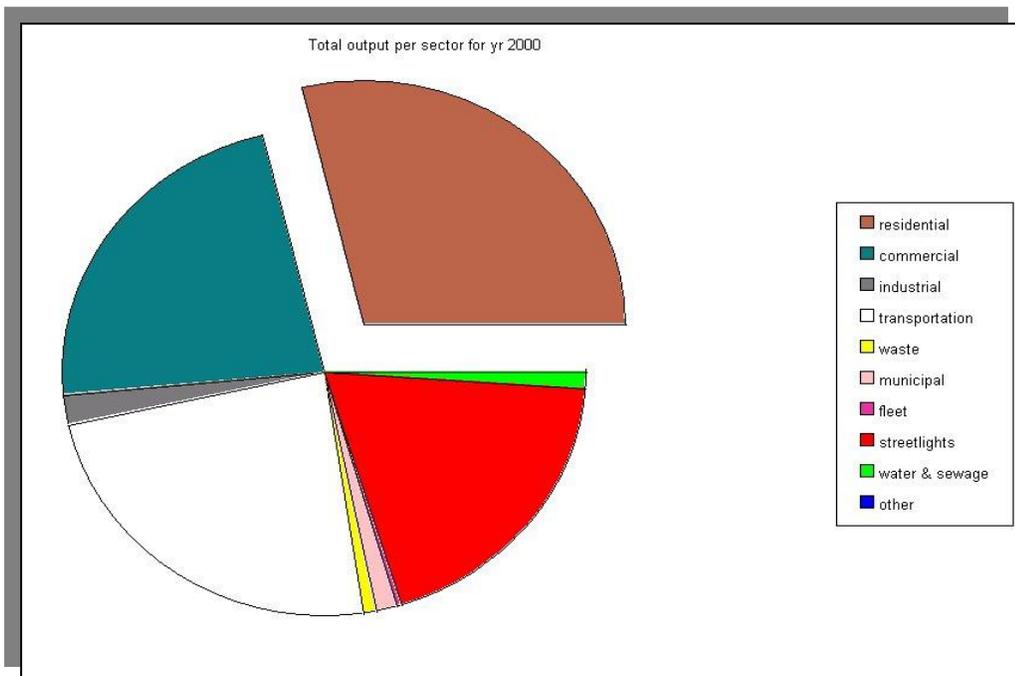
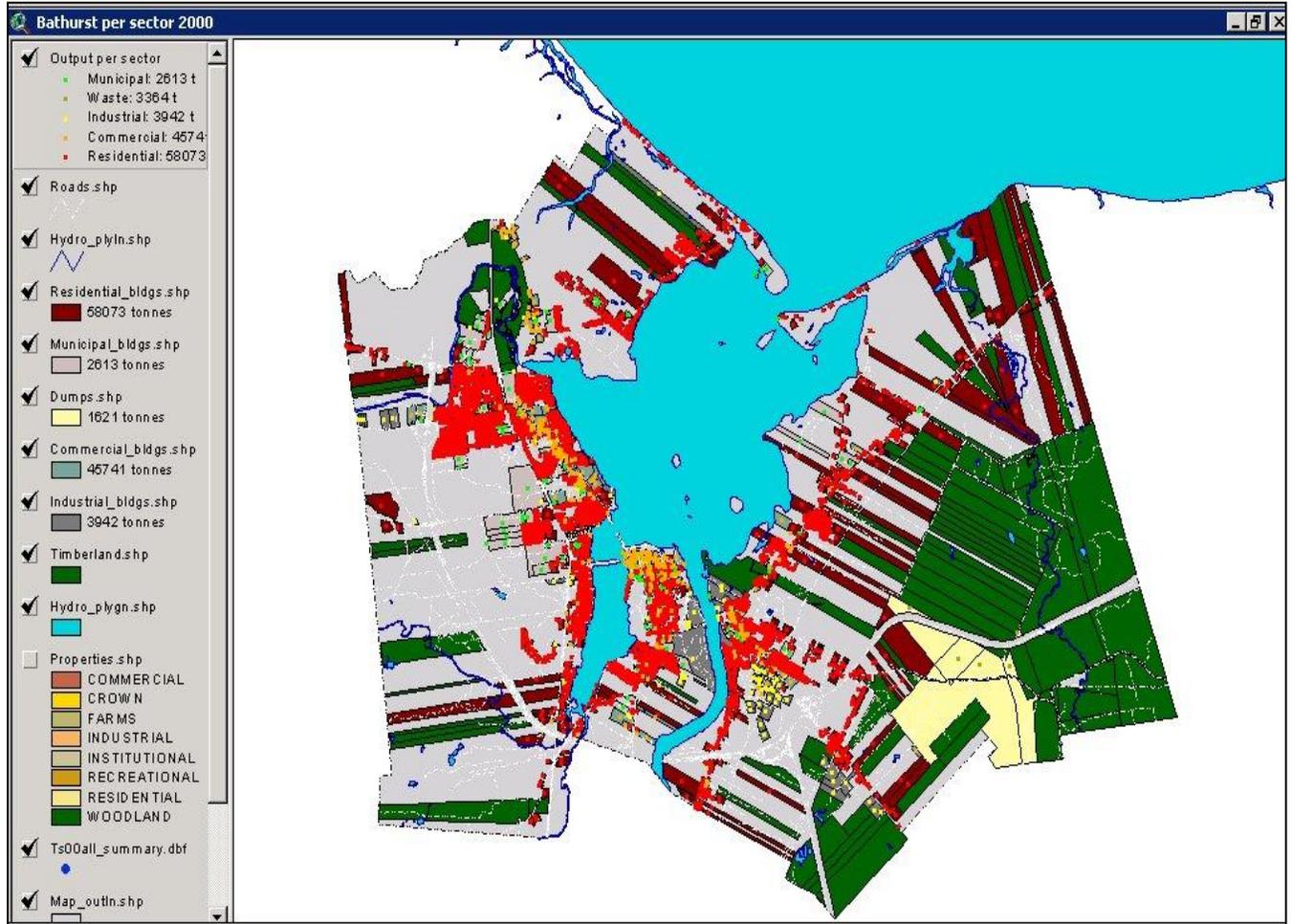
see city wide emissions reduce by 20 % before 2010. This is an attainable goal and one which needs our commitment.

The City of Bathurst showed excellent cooperation in providing us with the total energy use for all Municipal Operations for both 1995 and 2000. They also provided the total tonnage of waste, vehicle information and emissions reductions initiatives for both years. NB Power also was exceptionally cooperative in separating out the electricity consumption amounts for the residential, commercial, and industrial and streetlights sectors for both years for our city. It appears that although a few energy savings measures have been made by Municipal Operations, mostly in the form of smaller boilers, the overall emissions for the entire city have risen dramatically since 1995. There is still some final work to be done in the transportation sector and so it has not been included in this first report. Difficulty with the data seems to be in the necessary format and total city wide counts. Without the transportation sector included it appears that city wide emissions have increased 32% since 1995. Some of this can be explained by the addition of a large regional Civic Center, powered by electricity, it requires a huge amount of power per year and by the total increase in electricity amounts city wide in all sectors. The oil companies were all totally uncooperative. It was therefore estimated that use of oil was approximately 25% of city wide energy. Wood was estimated at 13,000 cords.

**Bathurst Greenhouse Gas Emissions (CO2)**



# GHG Map of the City of Bathurst, NB



## **GHG Emissions Reduction Plan (2002)**

- Implement Public Transit
- Turn off decorative outdoor lighting and interior night lighting in municipal buildings after 11:00pm and request that all businesses, institutional, residential and industrial properties to do the same or switch them to solar lighting fixtures or LED lamps.
- Reduce the number of streetlights and park lights by 25 %.
- Increase the methane burning at the old landfill site, include methane burning, capture, storage and or re sale at the new landfill site
- Move forward with the full recycling/composting program for our city
- Install bicycle lanes on all major streets.
- Develop a "City Walking Trail System" which would be a series of connecting "short cuts" connecting between streets to encourage citizens to walk more and leave the car at home.
- Ask major employers to organize van or car pooling for employees.
- Develop and begin to implement a "**Green Plan**" for the City which would include bringing as much biodiversity as possible back to the city. One of the many benefits will be helping to cool the city and reduce the need for air conditioning.
- Retrofit municipal buildings
- Plant 1000 trees- offer them to homeowners, businesses, institutional properties, parks.
- Establish a "windmill park" within the city to supply power to the downtown.
- Power the downtown core by establishing a district energy system fuelled by the steam from the mill.
- Establish a technical Kyoto committee to organize implementation items.

## **2007 New Initiatives**

1. Continue with 2000 list of initiatives
2. Engage community in Community Energy Conservation Campaign
3. BSD Opens Climate Action Center on Main Street and Conduct Events
4. Establish Victoria Community Garden with Harvested Rain Water Station
5. Conduct Composting Pilot Project with City
6. Complete Phase 1 of STAP Recommendations
7. Complete Municipal Energy Efficiency Retrofit Recommendations
8. Adopt a Municipal Green Procurement Policy

**City of Bathurst Municipal Building Energy Audit Retrofit/ Energy Efficiency Recommendations- Submitted by BSD, October 27, 2007**

<b>Measure</b>	<b>Building</b>	<b>Action</b>	<b>Cost \$ 2004 est</b>	<b>Annual Savings \$</b>	<b>Overall Payback</b>	<b>CO2 Savings (Tonne)</b>
<b>Lighting</b>	Public Works Garage	T8 lamps with electronic ballasts, CFL's, LED exit lights	\$28,872	\$3,274		
	Water Treatment Plant	T8 Lamps/ electronic balasts	\$16,657	\$2,450		
	Waste Water treatment Plant	T8 Lamps/ electronic ballasts	\$31,190	\$3,451		
	New City Hall	T8 Lamps/ electronic ballasts		\$1,000		
	Decorative Lighting	Timers, LED		\$1,000		
	Fire Station #2	T8 Lamps/ electronic ballasts	\$4,832	\$588		
	Street/ Recreational Lights	Reduce #, go to LED		\$2,000		
<b>HVAC</b>	K.C.Irving	Insulate brine heater, Zambonie issues, ceiling occupancy sensors in washrooms, change room, walking	\$84,607	\$16,265		
<b>Building Envelope</b>	Public Works Garage	Air Sealing,	\$10,031	\$1,904		
	K.C. Irving	Zamboni room, overhead door interlock,	\$14,650	\$2,436		
<b>EMCS</b>	K.C.Irving	Occupancy sensors, DDC, Zambonie improvements,	\$71,976	\$41,447		
	R.O'Neil Complex	Sensors, DDC, ceiling reflection	\$10,497	\$4,344		
	Public Works Garage	DDC, time of day schedule AUH, AC, Doors, fans	\$84,110	\$12,544		
	Water Treatment Plant	Direct Digital Control and new 3 way mixing valve	\$35,299	\$5,817		
	Fire Station #2	Direct Digital Controls, Sensors	\$15,857	\$1,875		
	Waterfront Development	Programmed systems for night and seasonal set back, LED and Solar exterior and parking lights, CFL bulbs and T8's				
<b>Totals</b>			<b>\$408,578</b>	<b>\$100,395</b>	<b>4 yrs</b>	