TORONTO

STAFF REPORT
ACTION REQUIRED

Framework for a Climate Change and Clean Air Action Plan

Date:	March 22, 2007
To:	Executive Committee
From:	Richard Butts, Deputy City Manager
Wards:	All
Reference Number:	P:\2007\ClusterB\PPFA\TEO\EX07002

SUMMARY

The City of Toronto (the "City") is a committed participant in the growing global effort to address climate change and improve local air quality. This is reflected in the Mayor's call for the development of a comprehensive climate change plan to cut greenhouse gas emissions and the development of an aggressive clean air action plan.

New energy conservation and renewable energy technologies hold great promise for reducing emissions in the future. However, in the short-term we cannot allow greenhouse gas levels to increase and air quality to further deteriorate and we must take action now.

The City, as a government and an urban area, can and must continue to lead by example in efforts towards cleaner air and lower greenhouse gas emissions. By engaging every member of the community and all key sectors in partnership with the City, significant, lasting and positive change can occur. Through an emphasis on personal responsibility we trigger personal ability and desire to effect change.

In order to ensure that the maximum results possible are attained, a co-ordinated effort on the part of the City's agencies, boards, commissions and divisions ("ABC&D's"), and the urban community of Toronto, including residents and the business sector, will be required. A Climate Change and Clean Air Action Plan (the "Action Plan") that is innovative, reflects progressive ideas and is bold in its implementation will guide the City – both the City government and the Toronto urban area -- in meeting its objectives.

The working title for the Action Plan is "Change is in the Air". A draft framework for the Action Plan is enclosed with this report and will be used as the basis for engaging the citizens of Toronto in discussion and action. The framework provides examples of actions to address the major sources of greenhouse gases and smog-producing emissions in the Toronto urban area and beyond.

This report recommends that Executive Committee direct the Deputy City Manager to proceed with engagement of the public and stakeholders in a review of the framework for a Climate Change and Clean Air Action Plan, and report back to Executive Committee on the outcomes.

RECOMMENDATION

1. It is recommended that the Executive Committee request the Deputy City Manager to proceed with public engagement on the framework for a Climate Change and Clean Air Action Plan, and report back to Executive Committee in time for the July 2007 session of City Council.

FINANCIAL IMPACT

The recommended Action Plan will be developed using funds currently contained in the 2007 Toronto Environment Office operating budget, with re-allocation of funds, on an as required basis, from within other 2007 operating budgets. The Action Plan will identify program priorities for ABC&D's and new 2008 operating and capital budget pressures.

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

ISSUE BACKGROUND

Call for Action

This report responds to the Mayor's mandate for aggressive action on addressing climate change and improving air quality. Specifically, in the Fall of 2006 the Mayor called for:

i. A comprehensive Climate Change Action Plan to cut greenhouse gas emissions to help combat global warming. This action plan will explore ways that the City can cut emissions and encourage residents to do the same; and

ii. A new Clean Air Action Plan that will reduce smog-causing pollutants by 20 percent by 2012.

History and Achievements

The City of Toronto continues to be recognized as a leader for its efforts to address climate change. In 2005, the Suzuki Foundation identified Toronto as the North American leader in Climate Change, and the Climate Group, and an environmental watch-dog organization based in London, England recognized Toronto as being among the top ten low-carbon cities world-wide.

Toronto can be proud of its track record as an early leader in recognizing the impacts of climate change. In June of 1988 Toronto hosted three hundred scientists and policy-makers at the first World Conference on the Changing Atmosphere.

In January 1990, the City made an official commitment to reduce the city's net carbon dioxide ("CO2") emissions by 20 percent, relative to 1988 levels ("net" emissions accounts for population growth). In 1999, the newly amalgamated City reaffirmed this CO2 reduction goal, and remained in full support of this important issue. This target became known internationally as "the Toronto target".

A variety of programs, plans, policies and initiatives supported the City over the years in achieving its greenhouse gas reduction goals. Examples include:

- **Toronto Atmospheric Fund** - In 1991 the Toronto Atmospheric Fund ("TAF") was established to assist the City of Toronto in meeting its reduction target of 20 percent. TAF provides grants and loans for greenhouse gas reduction projects from revenue that comes from its own $25 million endowment and not from the municipal tax base. On an annual basis TAF has approximately $1.2 million available for grants and special projects. Up to $8 million in financing is currently available for mandate-related loans.

  Like other City of Toronto agencies, boards and commissions, TAF is an arm's-length agency. City Council appoints the Board of Directors and reviews and approves the annual budget, but the operations are conducted autonomously.

  Members of the community apply to TAF for funding to support a wide range of projects to reduce greenhouse gas emissions. Since its inception, TAF has financed carbon dioxide emission reductions totalling upwards of 225,000 tonnes and saved the City $17.5 million – over $2.7 million annually -- in cumulative energy and maintenance costs.

- The **Clean Air Partnership** ("CAP") was founded by TAF in 2000 to serve as TAF's public education and outreach partner with an emphasis on local and regional air quality. CAP works with partners to achieve clean air, facilitate the exchange of ideas, advance change and promote and coordinate implementation of actions that improve local air quality. It also coordinates the annual Smog Summit and the Greater Toronto Area Clean Air Council.

- The **Better Buildings Partnership** ("BBP"), established in 1996, is an innovative partnership program founded by the City of Toronto, local utilities and labour organizations. The BBP promotes and implements energy-efficient retrofits of commercial, institutional and multi-residential buildings. Because buildings are such a major source of greenhouse gas emissions, the BBP has been responsible for an overall reduction of more than the equivalent of 1,000,000 tonnes of carbon dioxide since it began.

  The BBP works with building owners to improve energy efficiency relating to space heating and cooling as well as lighting. The BBP assists through several different financing programs and provides seed funding for efficiency improvements through a zero-interest $12 million dollar revolving fund.

- A related-program, the **Better Building New Construction Program**, supports integrating energy efficiency considerations into the early design stage of large buildings, thus avoiding costly later retrofits and reducing from the very beginning the carbon footprint of an individual building.

- The **City of Toronto Environment Plan** was the outcome of extensive consultation and deliberations during 1998 -1999 by the Environmental Task Force, a group of environmental experts and community leaders invited by Council at the time of amalgamation to develop a plan for a clean, green and healthy city.

  Many of the targets, programs and strategies first proposed in the Environment Plan in 2000 have greenhouse gas and air quality improvement implications such as a commitment to meet 25 percent of the City energy demand through renewable energy sources, the development of a comprehensive air quality strategy, a Green Economic Development Strategy, an Integrated Transportation Strategy, a Bike Plan and a Pedestrian Plan as well as the establishment of a Sustainability Roundtable.

- In 2003, the Mayor of the City of Toronto invited 15 individuals with exceptional experience and expertise in the environment field to sit as members of the **Mayor's Roundtable on the Environment**. The mandate of the Roundtable was to provide guidance to the City of Toronto on environmental leadership and innovation. The Roundtable made 65 formal requests to Council for environmental improvements in the City, including a Green Roofs Strategy, a Toronto Green Development Standard, the Green Toronto Awards, a Renewable Energy Action Plan, an Energy Conservation Plan, a Green Economic Development Strategy, the Green Toronto Festival and acceleration or expansion of many successful City programs such as the $20 million Energy Retrofit Program for energy efficiency improvements in city-owned buildings and the LED transit signal lighting replacement program. All 65 requests were endorsed or adopted by Council.

The development of a comprehensive air quality strategy was a recommendation in the City's 2000 Environmental Plan. In late 2004, an interdivisional staff team prepared a report entitled "Improving Toronto's Air Quality: Areas for Priority Action", which was presented to the Roundtable on the Environment at its January 2005 meeting. The Roundtable provided twenty-two suggestions for inclusion in the plan.

Throughout the remainder of 2005 and during 2006, staff work continued on the development of a plan. Internal and external stakeholder consultation was done and a greenhouse gas and air pollutant emissions inventory was undertaken by an external consultant. Status reports were also provided to the Roundtable on the Environment during 2005 and 2006. Based on these status reports, the Roundtable made a number of recommendations regarding air quality issues and short-term actions that were subsequently endorsed by the Policy & Finance Committee and City Council.

The input and recommendations of the Roundtable on the Environment, as well as the results of stakeholder consultation, were used in the development of a preliminary Draft Clean Air Action Plan that has been circulated to City divisions for review and comments. Future work on the development of the new integrated Climate Change and Clean Air Action Plan will build upon the activities previously undertaken.

Additional Information

Comprehensive information about the City's environmental programs, projects and policies can be found through the Toronto Green Guide (www.toronto.ca/greenguide/index.htm). It provides a snapshot of current environmental efforts along with sources of more information. Examples of leadership in City operations are presented in Appendix A to this report.

Other Orders of Government

The issues of air pollution and climate change cross political boundaries and will require the City to work in partnership with its neighbours in the Greater Toronto Area ("GTA") and larger Golden Horseshoe, the Federal and Provincial Governments, U.S. municipal and state governments in the Great Lakes basin and other major cities across North American and on an international level.

There are a number of initiatives where the City has formed partnerships that will serve as the foundation for further action on air pollution and climate change. For example, the GTA Clean Air Council ("CAC"), for which Toronto is the host city, is a partnership of GTA municipal governments and the Provincial and Federal governments. The GTA

CAC and the work it has engaged in provides an excellent foundation for expanding the partnerships necessary to achieve the air quality and Climate Change objectives.

Regulatory Context

As articulated in this report, the City of Toronto can and will take a leadership role in improving local air quality and reducing greenhouse gas emissions by taking advantage of its authorities in the following areas:

- Land use, energy and transportation planning, policies, permits, licenses, standards and bylaws;
- Infrastructure design;
- Green procurement;
- Greening of City operations (e.g. green fleets; building energy retrofits);
- Water conservation;
- Solid waste management and diversion;
- Development of renewable energy systems;
- Tree planting, natural heritage protection and park design; and
- Education and advocacy.

The City will also look at what opportunities are available within the new City of Toronto Act. It is important to note though, that for the City to achieve its targets for improved air quality and reduced greenhouse gas emissions, it will require action on the part of community partners, business leaders and the Federal and Provincial Governments.

There are a range of legislative, regulatory and financial tools that are the responsibility of the Federal and Provincial Governments. The following is a summary of the scope of responsibilities of the Federal and Provincial Governments.

Sector	**Federal and Provincial Responsibilities**
Fiscal Policy	The National Round Table on the Economy and the Environment in 2003 published a report entitled, "The Federal Role: Environmental Quality in Canadian Cities". That report highlighted that the fiscal policies of the Federal Government in areas of taxation (sales and income), rebates and incentives, and investments in urban infrastructure (such as transit systems) have a significant influence on environmental quality in urban areas. Provincial authorities and policies in these areas have a similar influence.

Sector	Federal and Provincial Responsibilities
Transportation – Motor Vehicles	Regulatory standards and guidelines for engine and vehicle specifications, fuel efficiency, and emission standards Regulatory standards for motor vehicle fuel content. Licensing of motor vehicles and drivers.
Transportation Systems (transit, highways and parking)	While the City has significant control over the transportation systems available in the City, the success of City initiatives are influenced by Provincial and Federal decisions regarding investments in transit systems and highways.
Urban Development	While the City does have significant powers to control the form and type of development that occurs within the City it is part of a larger urban region and the Province through its legislation and policies sets the framework for guiding urban growth and trying to manage the issues of urban sprawl.
Heating, cooling and lighting buildings.	The Ontario Building Code, other Codes and related regulations define how energy efficient new construction has to be and regulates the installation of renewable energy systems. The City can encourage designs that go beyond these Codes but it can not require them.
Energy Systems	While the City can encourage and support the development of clean and renewable energy sources within its boundaries, the majority of our energy needs will be supplied through sources regulated and managed by the Provincial Government.
Industrial and Manufacturing Air Emissions	Regulatory standards for air emissions from these sources. Standards for reporting and making information available to the public on emissions and other releases to the environment. Regulatory approvals, in the form of Certificate of Approvals are the responsibility of the Province and the City can only provide comments when asked or in special cases City comments are required.

Sector	Federal and Provincial Responsibilities
International and National Agreements	While the City can negotiate partnerships with other municipalities, the development of agreements between the Federal and Provincial Governments, between Provincial Governments and between National Governments are the responsibility of the Provincial and Federal Governments. Agreements on manufacturing standards, transboundary emissions and many other areas do influence environmental quality in cities.

COMMENTS

Advice from Experts on Climate Change and Air Quality

On February 20, 2007, Parks and Environment Committee engaged seven local experts on air quality and climate change to present their views and expertise on the components of a Climate Change and Air Quality Action Plan for Toronto. The experts and their affiliation are as follows:

Expert	Affiliation	Spoke to
Mary Pickering	Associate Director, Toronto Atmospheric Fund	• Air Emissions Inventory • Integrated Approach
Dr. David McKeown	Medical Officer of Health	• Health impacts of Smog and Heat • City Actions that can Best Protect Health
Eva Ligeti	The Clean Air Partnership	• Climate Change Adaptation • Local/Community-level Action • Region-wide Action
Dr. Mark Winfield	The Pembina Institute	• Climate Change Impacts • City of Toronto Response Options
Dr. Keith Stewart, Ph.D.	World Wildlife Federation	• Costs of Delayed Action • Targeting Deep Reductions • Action Steps

Jose Etcheverry	David Suzuki Foundation	• Impact of Greenhouse Gases • Key Action Steps for Toronto
Dr. Franz Hartmann	Co-Executive Director, Toronto Environmental Alliance	• Create clean and green power • Public Transit • Community Right to Know Bylaw • Promote a Green Economy

The experts identified numerous social, economic and environmental impacts resulting from climate change and increased air pollution and provided comprehensive recommendations to address and mitigate those impacts and establish a sustainable future for Toronto.

A summary of the recommendations provided by the experts are recorded in Appendix B of this report.

Key Steps to Develop a City of Toronto Climate Change and Clean Air Action Plan

Formation of an interdivisional and interagency staff team

A "Climate Change and Clean Air Staff Team" has been formed to work on the Action Plan. While the Toronto Environment Office is leading the development of the Plan, climate change and clean air issues are related to the work of many City divisions, and agencies, boards and commissions of the City and affiliated agencies. Cross-divisional representation ensures integration of initiatives such as the Energy Plan, the Renewable Energy Action Plan, the Green Economic Development Strategy and the Integrated Transportation Strategy into the Climate Change and Clean Air Action Plan.

The staff team includes representation from the following divisions and agencies:

- Transportation Services
- Toronto Water
- City Planning
- Fleet Services
- City Manager's Office
- Toronto Public Health
- Facilities and Real Estate (including the Energy Efficiency Office and the Energy and Waste Management Office)
- Toronto Community Housing Corporation
- Solid Waste Management Services
- Toronto Atmospheric Fund
- Toronto Building
- Economic Development, Culture & Tourism

- Strategic Communications
- Clean Air Partnership
- Toronto Hydro
- Corporate Finance
- Exhibition Place
- Waterfront Secretariat
- Toronto Hydro Corporation/Energy Services
- Enwave Energy Corporation
- TTC
- Toronto Zoo
- Parks, Forestry and Recreation
- Toronto Region and Conservation Authority
- TEDCO

Research and Review of Emission Sources and Potential Actions

The Toronto Environment Office and the Toronto Atmospheric Fund have worked in partnership with all City divisions and agencies that have data on emissions of greenhouse gases and smog-causing pollutants to compile an inventory of the major sources of emissions in the City of Toronto urban area. The findings indicate that fossil fuels are responsible for 97 percent of greenhouse gas emissions including natural gas for heating and cooling buildings, gasoline and diesel fuels for running cars, trucks and buses, and electricity for lighting, running equipment and appliances as well as heating and cooling. The remaining 3 percent is from methane due to decaying waste in landfill.

Based on the source of greenhouse gas emissions, the inventory has identified the following major contributors: natural gas 8.7 megatonnes (Mt); gasoline 6.4 Mt; electricity 5.7 Mt; diesel 2.2 Mt; and solid waste 2.2 Mt.

The inventory has also identified that the City's operations and facilities account for 6 percent of total greenhouse gas emissions in Toronto. The remaining 94 percent comes from other sectors within the Toronto urban area (i.e. transportation, industry, commercial and residential). From this finding it is clear that if substantive actions are to be taken to reduce greenhouse gas emissions and improve air quality the entire populace and all sectors of the Toronto urban area must be engaged in partnership with the City government.

A scan of global best practice on climate change and clean air initiatives was also completed by the Toronto Environment Office. This information, along with input from the experts who presented at the February 2007 meeting of the Parks and Environment Committee and input from the City's Executive Environment Team and City staff across all divisions and many agencies, boards and commissions contributed to the development of a framework and a list of potential actions for public discussion and debate.

International Linkages

The City of Toronto is a member of a number of international organizations that link climate change issues at the city level with a global perspective, including the Clinton Climate Initiative, the C40 Large Cities Climate Initiative, and the International Council for Local Environmental Initiatives. Programs and activities of these agencies have also helped identify leadership actions and lessons learned from other municipalities known for their climate change and clean air achievements.

Numerous cities around the world have established comprehensive response plans to reduce their generation of greenhouse gases and improve local air quality. Some international examples are: Mexico City; London; San Francisco; Portland; Seattle; and Melbourne. Canadian examples are: Halifax; Hamilton; Calgary; Ottawa; and Vancouver.

Additional information is provided in Appendix C on several international and national Climate Change action plans.

Public Engagement

As noted earlier in this report, local government operations account for 6 percent of greenhouse gas emissions in Toronto. The remaining 94 percent of greenhouse gases and air pollutants that have significant climate warming and health impacts arise from activities that take place throughout the community. To meet our aggressive targets (cited in the accompanying Action Plan) to reduce emissions that impact on climate and on public health, members of the community must take action in every part of their day-to-day lives and as members of key sectors, such as the business sector or educational sector.

Engagement of the general public and stakeholders such as environmental organizations, ratepayer associations, BIAs, unions, educational institutions, business associations, major commercial and industry representatives, small business associations, ethno-specific organizations, and other levels of government will form an important and integral role in the development and implementation of the Action Plan.

The first activity to engage citizens in moving forward on meeting the City's climate change and clean air objectives event is scheduled for Sunday April 29, 2007 at Exhibition Place (Direct Energy Centre, Hall C). Participants will be engaged in a facilitated discussion of the framework and potential actions contained in the Action Plan.

Members of the public will be encouraged to review materials, make suggestions of their own and provide guidance on partnership building, obtaining resources and following through on commitments to action. The working title for the Action Plan is "Change is in the Air". A proposed framework and list of potential actions is included with this report.

Following the event at Exhibition Place, additional public engagement activities will be carried out at several locations throughout the City, including in several priority neighbourhoods. An interactive web site will also allow residents to provide input to the Action Plan and be kept informed about progress on development and implementation.

The City is bringing together tools and programs – some new, and some already underway – to support action in the community. Residents can participate through their local business association, rate payers association or local environment group or as individual citizen volunteers.

Implementation - a Multi-Phase Action Plan

The framework and potential action items identified in the Action Plan accompanying this report represents **Phase I** of a three-phase Action Plan.

Phase II will present detailed work programs including roles, responsibilities, timelines and partnerships that result from the community engagement activities.

At this time, the following components of **Phase II** of the Action Plan can be identified:

- completion of the emissions database to identify priority areas and to enable tracking of greenhouse gas reductions and improvements in air quality;

- a comprehensive inventory of the beneficial projects undertaken to date by the City and quantification (where possible) of their positive impacts;

- establishment of prioritized greenhouse gas emission and air pollutant reduction measures integrated with steps to improve air quality, protect health, reduce smog and help us adapt to a changing climate;

- identification of specific impacts and health benefit of emission reduction measures and air quality improvements;

- implementation steps of the Action Plan, integrating with the City's Energy Plan and Integrated Transportation Strategy;

- ongoing monitoring, tracking, measurement, feedback analysis and steps to performance reporting;

- establishment of a structure for City ABC&D's, including modelling, to: develop an integrated climate change mitigation and adaptation strategy by undertaking an impact assessment (including historical climate trends, climate change scenarios, and impact and risk assessment); identify adaptation options (including new and existing policies and programs); and establish climate change mitigation and

adaptation action steps (establishment of institutional mechanisms, formulation of policies and/or modification of existing policies, and modifications to design criteria); and

- identification of required staff, technical and financial resources.

Phase III of the Action Plan will focus on reaching targets through a variety of implementation mechanisms such as Neighbourhood Climate Change and Clean Air Action Plans and Programs, the Mayor's Partnership on Climate Change and special focus action teams on key climate change and air quality issues such as transportation, renewable energy, green economic development, energy conservation and financing mechanisms.

Linkage to the City of Toronto's Environment Plan

The policies and programs developed through the Climate Change and Air Quality Action Plan will be integrated into the City's Environment Plan, which is currently under review.

Milestones in the Development of the Action Plan

The major steps in the development of the Action Plan are identified in the following table.

Action	**Timeframe**
Mayor's Call to Action on Climate Change and Air Quality.	Fall 2006
Presentations by experts at Parks and Environment Committee and dialogue with Committee Members and staff.	February 20, 2007
Formation of Climate Change and Clean Air Staff Team.	March 2007
Proposed framework for public engagement on the development of a Climate Change and Clean Air Action Plan, under working title of "Change is in the Air", to be submitted by Deputy City Manager to Executive Committee.	March 26, 2007

Public engagement forum to participate in the development of the Action Plan to take place at Exhibition Place, Direct Energy Centre, Hall C, from 1:00 to 4:00 p.m., with an open house to be held prior to 1:00 p.m.	April 29, 2007
Public deputations to Parks and Environment Committee on the Action Plan, with recommendations from Parks and Environment Committee to be submitted to staff for consideration.	May/June 2007
Approval by Executive Committee of Phase II of the Action Plan, including early results and more detailed action steps for long-term planning, based on recommended staff revisions from input received through the previous civic engagement process.	Prior to July 2007 session of City Council.
Development and implementation of Phase III components of Action Plan.	Fall 2007 - 2008

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ATTACHMENTS

Appendix A.	Major City Led Climate Change and Air Quality Initiatives
Appendix B.	Summary of Recommendations from Panel of Environmental Experts. Parks & Environment Committee Meeting, February 20th, 2007
Appendix C.	Overview of International and National Strategies to Address Climate Change.

Appendix A.

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
Transportation Systems	Integrated Transportation Strategy	White Paper to be submitted to Committee in Spring 2007.	The Action Plan to implement an Integrated Transportation Strategy will identify actions to implement objectives already established by Council in the Official Plan and other documents and continue to work towards reduced auto-dependency and promotion of sustainable growth.
	Official Plan	Adopted by Council in 2002.	The OP contains the policies necessary to achieve an urban form that facilitates the use of non automobile forms of transportation and helps reduce urban sprawl across the GTA.
	TTC Ridership Growth Strategy	Adopted in 2003. Phase one focuses on providing fast, reliable and convenient transit services. A key component is establishing transit right of ways, such as the St. Clair West street car right of way under development.	Facilitates the use of non-automobile forms of transportation.

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Toronto Bike Plan	Adopted by Council in 2001, the objective is to double the number of bicycle trips by 2011. Involves among other things establishing 1,000 km of bikeways.	Over 370 km of bikeways are in place and capital funding for implementation is proposed to increase to $6 million per year.
	Pedestrian Initiatives	Policies, programs and infrastructure are being developed to establish a safe comfortable and attractive walking environment.	
	Walking Strategy	To develop by October 2007 a multi-year strategy, that builds upon existing policies and activities, to encourage increased walking.	
	Idling Control By-law	The bylaw limits idling to no more then 3 minutes in a 60 minute period (under certain conditions).	Increased awareness of the contribution of vehicle exhaust to poor air quality.
	Waterfront Sustainability Framework	The TWRC has prepared a framework that ensures that sustainability principles are integrated into every facet of the waterfront revitalization.	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
Buildings	Energy Plan & the 90 Megawatt program.	Report to be submitted to the Executive Committee in Spring 2007.	The plan will provide options for achieving Council's goal of a conservation-first approach to energy consumption. The plan will also identify how to achieve 90 MW in electricity savings by 2010.
	Renewable Energy Action Plan	Report to be submitted to the Executive Committee in Summer 2007	This strategy will outline the actions for the City, businesses and residents to work in partnership to maximize the production and use of renewable energy.
	Better Buildings Partnership	An $8 million loan fund available to support energy retrofits of multi-residential, industrial, commercial and institutional buildings.	Since 1996, the BBP has provided financial assistance for the retrofitting of over 400 buildings resulting in an estimated reduction of 195,000 tonnes of eCO2 emissions per year.
	Better Buildings Partnership – New Construction Program	Design assistance to help achieve at least a 25% energy improvement over what is required in the building code.	Over 50 buildings have received design assistance and the majority have identified designs that achieve a 50 percent energy improvement over what is required in the building code.

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Toronto Hydro, Conservation and Demand Management Initiatives	Delivery of a series of programs to reach Toronto businesses and home, reducing energy use.	In 2005/06 these programs reduced electricity equal to the amount of energy consumed by approximately 20,000 homes in a year.
	Lights Out Toronto campaign	Encourages owners and operators of large buildings to turn off the lights at night, especially during the bird migration season.	Reduced energy consumption
	Toronto Green Development Standard	Adopted by Council 2006 and is currently being implemented by the City for its own buildings.	A cost benefit analysis of the standard is being prepared for the end of 2007.
	Green Roof Strategy	A strategy to encourage the development of green roofs. The strategy comprises the following elements: Incentive Program; Public Education; Toronto Building's development of construction standard under City of Toronto Act, and a link to the Green Development Standard.	A study completed by Ryerson University suggested that the installation of green roofs on all available roofs in the city would result in savings of $12 million in reduced energy for cooling and significant reductions in greenhouse gases and key air pollutants.
	Water Efficiency Plan	Reduced water consumption reduces energy consumption.	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Enwave - Deep Water Cooling	This method uses cold water from Lake Ontario to cool high rise buildings instead of electric air conditioning.	This method uses 90% less energy then conventional cooling systems. Implementation is estimated to have reduced electricity demand by 61MW which is a reduction of 79,000 tonnes of CO2 per annum.
	TAF	Established in 1991, TAF manages a $25 million endowment fund and provides $1.2 million in grants and $8 million in loans every year for air quality and climate change initiatives.	It is estimated that TAF funded projects led by the City have reduced CO2 emissions by 225,000 tonnes.
	TRCA Greening Healthcare	Working with operators of health care facilities to reduce energy use.	
	TEDCO Industrial and Employment Sustainability Initiatives.	Working towards building more LEED / Green Development Standard certified industrial buildings and encouraging energy efficiency in existing employment / industrial buildings.	
City & ABC Operations	Green Fleet Transition Plan	Plan was adopted in 2004 and outlined actions ranging from the types of vehicles and fuels purchased to driver education that will reduce emissions from 4,000 city vehicles.	Implementation has reduced emissions from 4,000 vehicles managed by the Fleet Services Division by 23% since 2003. A stage two plan is being developed for 2008-10.

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Green Fleet Expo	Led by Toronto and Hamilton, this is a forum where the two cities exhibit the technologies being used to reduce air emissions from their fleets.	
	Clean Roads to Clean Air	The City purchased in 2006 14 new technologically advanced street sweepers and is awaiting delivery of another 11 in 2007.	Theses new regenerative-air street sweepers remove over 90% of fine road dust (particulate matter) which is a significant cause of negative health effects due to air pollution.
	Toronto Energy Retrofit Program	Program established in 2004 to achieve energy efficiency in the over 1,500 buildings owned by the City.	The City has retrofitted over 200 City owned buildings (Civic Centres, Arenas, Fire Hall, Exhibition Place) and achieved an estimated reduction of almost 20,000 tonnes in greenhouse gas emissions. Currently planned retrofits will achieve an additional 12,000 tonne reduction.
	TRCA Mayors Megawatt challenge	Working with other municipalities to reduce energy consumption from municipal buildings.	
	Energy Purchasing Plan	In 2000, City Council made a commitment to purchase 25% of its energy needs for	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
		city operations from renewable sources. It is expected that this target can be met by 2011.	
	Landfill Gas Utilization Project	Methane is captured and burned to create energy at three City former landfill sites.	Methane is a greenhouse gas 21 times more potent then CO2 and this program is the major reason why greenhouse gas emissions from City operations are 40% below what they were in 1990.
	Water Transmission Operations & Energy Optimization	The City has been working with York Region to identify opportunities in the water transmission system to minimize hydro costs and reduce energy usage.	Reduced energy consumption.
	Cogeneration Projects at Wastewater Treatment Facilities	Several cogeneration projects are underway (or in the planning stage) at Wastewater Treatment facilities.	Methane gas (from the processing of sewage sludge) will be utilized for electricity production.
	Carbon Emissions Trading Policy	The current policy of City Council is that carbon credits will only be sold to the Federal Government on the condition that the credits be retired immediately and not be resold to potential polluters.	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Environmentally Responsible Procurement Policy	The purpose is to encourage the development, awareness and purchase of environmentally preferred products and services.	
	Smart Commute Program for City employees	Based on the results of a one year pilot program for city staff working at the North York Civic Centre, this program is being expanded to all city employees and focusing on helping and encouraging staff to utilize alternative ways of traveling to work and home.	
	Smog Alert Response Plan	City operations are modified on days declared as high smog, in order to reduce contributions to smog.	
	Light Emitting Diode (LED) Traffic Signals	New lights are being installed in almost 2,000 City traffic and pedestrian signals which result in significant energy savings.	Estimated that this will save 18 million KW hours a year and operating savings of $1.8 million and will save an estimated 5 million kilograms of CO2 emissions a year.
	Pavement Marking Products	In 2005, the City converted from using oil based traffic markings paint to a water based paint. Oil based paints contain volatile	VOC emissions have been reduced by almost 78% from this source.

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
		organic compounds (VOCs) that are a major contributor to air pollution and smog.	
	Road Salt Management	Salt becomes air borne very readily. The City has implemented activities to reduce the amount of salt being used on roads.	Reduce air pollution. Reduction of road salt by 15 percent.
	Exhibition Place	Exhibition Place has set the goal of becoming energy self sufficient by 2010. Various initiatives include the Toronto Hydro/TREC Wind Turbine, the photovoltaic power system, green roofs, tri-generation plant and much more.	The estimated annual reduction in annual eCO2 emissions resulting from these measures will be almost 11,000 tonnes.
	Toronto Community Housing Corporation	Implementation of its Green Plan adopted in 2004 includes: appliance replacement program, building renewal, low flow program, furnace replacement, tenant education, green procurement standards, and staff training.	
	Toronto Hydro	In addition to its conservation demand management programs, Toronto Hydro has provided funding support for tree planting	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
		programs, is a funding sponsor of the Smog Summit and the Green Toronto Awards, has developed a 36 kW solar PV system at its building at 500 Commissioner St., and co-developed and co-owned with Windshare North America's first urban wind turbine located at Exhibition Place.	
	TTC – Green Fleet	Purchase of 150 hybrid electric buses with plans to purchase 220 more and replace the 350 non bus vehicles with hybrids. Use of biodiesel and ultra low sulphur fuels.	Hybrid vehicles produce about 50% less greenhouse gases and fuel consumption is reduced by 20%.
	Toronto Zoo	Energy and lighting retrofits between 1989 and 2000. Setting a target of zero carbon emissions by 2017 as part of its Green Plan to be completed by the Fall of 2007.	Estimated savings of $150,000 annually and reduced CO2 emissions of over 1,000 tonnes.
Mitigation and Adaptation	Tree Planting	Objective is to increase the tree canopy from 18% to 30-40%.	
	Natural Heritage Strategy	Currently being developed.	
	Ravine Control Bylaw	Protection of ravines from inappropriate development.	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Tree Bylaw	Protection for trees from being cut down inappropriately.	
	Wet Weather Flow – Storm water Design Standards	In response to recent events and expected increased risk of flooding as a result of extreme storms, design standards have been modified to reduce the risk of flooding.	
	Green Development Standard	Encourages building designs that are better prepared for climate change.	
	Green Roof Strategy	Implementation can reduce the urban heat island effect.	
	Shade Policy	Encourages the development of shade to reduce the negative effect of over exposure to heat and sunlight.	
Public Education	Green Toronto Awards	Over 175 nominations were received in 2007.	The number of nominations has increased every year, suggesting increased environmental awareness and behaviour in the community.
	Green Toronto Festival	2007 is the second year for this event, where over 60 City programs and community groups exhibit their environmental initiatives.	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	20/20 the Way to Clean Air	A Toronto Public Health led program to educate people about the steps they can take to helping achieve cleaner air and reduced greenhouse gas emissions.	A review in 2005 found that the 20/20 resources are helping participants reach a 20% reduction target in home energy use and 15% reduction in vehicle kilometres travelled, and achieve up to 1.2 tonnes reduction in greenhouse gas emissions, on average, per household.
	Heat Alerts and Extreme Heat Alerts	Toronto Public Health staff monitor the Heat-Health System several times a day from May 15 to September 30. Alerts are based on several climatic conditions, not just temperature.	Agencies with vulnerable populations are contacted. Red Cross operates an information line. Cooling centres are opened to help respond to heat-related illness.
	Air Quality Health Index	The City has participated in the Federal Government's development of a new index. This includes development of new communication tools for the public that will forecast times when health risk is elevated. Toronto will be the pilot site for implementation.	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Toronto Green Guide	Comprehensive summary of all City led environmental programs.	
	Ontario EcoSchools	The Toronto Region Conservation Authority with local school boards has led the way in the development of education programs that include climate change and air quality.	98 schools in Toronto are certified and the Toronto District School Board won a Green Toronto Award for the EcoSchools program.
	Smog Summit	An annual event of municipal, provincial and federal government leaders designed to identify and initiate plans to improve air quality in the GTA.	
	Access to Environmental Information project	Purpose is to enhance public access to environmental information, in particular information held by the City of Toronto.	
Advocacy and Partnership	Advocacy – Review of Ontario Building Code	In 2006 the City Recommended that the Province pursue the most aggressive options for energy efficiency amendments to the Building Code. The City also requested that the Province remove barriers to green technologies in the Building Code.	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
	Court Case – US Coal Fired Power Plants	Toronto is a participant in a US court case aimed at reducing emissions from coal fired power plants in nine US states.	
	Intergovernmental Advocacy	The City works with other orders of government to develop healthy public policy on issues, such as energy planning, fuels, air quality standards and CEPA, and to reduce transboundary air pollution affecting Toronto.	
	Closure of the coal fired plants in Ontario	The City has advocated for the closure of coal fired energy plants.	
	GTA Clean Air Council (Toronto is the host City)	This is an inter-jurisdictional forum that meets monthly and involves the Federal and Provincial Governments and municipal governments from the GTA and larger Golden Horseshoe.	
	Great Lakes Climate Change Partnership	Partnership with 10 cities in the Great Lakes region working towards addressing climate change.	
Research & Monitoring	NPRI Reporting	Annual reporting as required by the Federal and Provincial	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
		governments on the emissions from certain City of Toronto facilities.	
	Air Quality modeling.	Models are developed to help identify air quality issues and the affects of city policies and programmes.	
	Research on and assessment of health impacts.	Research into what are the health effects associated with poor air quality and assessment of potential health benefits of policy options. Development of a framework for the assessment of health impacts of major policies and undertakings that may affect health.	
	Greenhouse Gas Inventory	Development of a comprehensive inventory of sources of greenhouse gases.	
	United Nations Regional Centre for Excellence	City has taken a secretariat role to support the Centre's 10-year commitment to promote sustainability.	Researching examples of sustainability in the GTA.
Other	Green Economic Development Strategy	To be completed in 2007, will contribute towards enhancing the City's understanding of existing green industries, businesses	

Major City Led Climate Change and Air Quality Initiatives			
Sector	**Activity**	**Actions**	**Outcomes**
		and green technology opportunities so that the City can foster growth and innovation in this cluster.	

Appendix B.

Summary of Recommendations from
Panel of Environmental Experts

Parks & Environment Committee Meeting

February 20th, 2007

Key Facts:

In Toronto, it is estimated that:

- 1,700 deaths and 6,000 hospitalizations can be attributed to poor air quality
- heat related mortality will double by 2050 as a result of climate change
- deaths and hospitalization attributed to poor air quality will increase by 20% by 2050 even if air pollution emission rates remain the same as now.
- negative economic impact of climate change is 5 to 20% of the GDP while the estimated cost to address climate change is 1% of the GDP.

Sector	Recommendation
Transportation (City-Wide) & Urban Form GHG emissions from transportation sources are significant and growing and represent over 1/3 of Toronto's emissions. Vehicles were identified as a major source of NOx, with diesel trucks and buses accounting for ½ of sources of NOx.	The City should: o place a priority on public transit; o develop parking incentives/disincentives for fuel efficient/low efficiency vehicles; o use its licensing powers to raise revenues and look at providing incentives for taxis to convert to hybrid; o improve cycling and pedestrian infrastructure; o promote active transportation choices because they have the added benefit of addressing the poor health issues associated with inactive lifestyles; o consider a congestion charge in the central business district or a tax on parking dedicated for transit improvement; o encourage expansion of the availability of biodiesel locally; o invest revenues from parking charges and congestion charges into clean air programs.

Sector	Recommendation
Gasoline for vehicles was identified as the 2nd largest source of greenhouse gases. Smog and heat problems can be compounded by urban form (e.g. tall buildings create canyons that may trap pollutants).	
Heating, Cooling and Lighting Industrial, Commercial and Residential Buildings (City-Wide) The burning of non-renewable energy to heat, cool and light buildings is a major source of particulate matter. The use of natural gas for space heating is the largest source of greenhouse gases. Promotion and implementation of renewable energy systems will generate jobs – a possible employment solution for at risk populations.	The City should: o support and promote high-rise rental and condo retrofits for energy efficiency; o make the Green Development Standard mandatory for new buildings; o expand the Better Building Partnership to include small businesses and residential buildings; o set aggressive targets for reducing greenhouse gas emissions from buildings; o provide greater support for Combined Heat and Power; o make waterfront redevelopment carbon neutral, and a showcase for green design and development; o establish a tax rebate for high efficiency furnaces / boilers; o establish a Municipal Trust Fund for green heating and cooling initiatives; o encourage the development of a green mortgage program for home and business owners to finance energy efficiency measures; o provide incentives for energy efficient retrofits for residential sector (or market the programs of other levels of government); o help establish a Toronto Green Industry Centre of Excellence to promote energy retrofits and renewable energy development.

Sector	Recommendation
	The Green Building Standard should incorporate a natural ventilation standard to reduce dependence on air conditioning.
Energy Systems The burning of fossil fuels for power production is a major source of greenhouse gas emissions.	The City should: o aim for energy self-sufficiency through renewables (wind, solar, geothermal, biofuels) as well as cogeneration. o work to turn Toronto Hydro into Canada's largest provider of green power; o aggressively expand deep lake water cooling; o encourage that smart meters should also show greenhouse gas emissions; o promote energy conservation; o support renewable energy initiatives through Standard Offer Contracts; o develop systems for landfill gas methane capture (Thackeray Landfill); o quantify Green Lane Landfill emissions and identify measures to reduce fugitive emissions. Require trucks transporting waste to use biodiesel; o support the phase-out of coal-fired power plant; and. o promote the new air quality health index.
Adaptation for Climate Change Increased incidence of extreme weather. Heat related mortality will double by 2050. Increased stress on water supply and infrastructure.	The City should: o require and provide incentives for permeable paving, on-site stormwater retention; o encourage green roofs; o promote indoor temperature standards; o take action to enhance the urban forest; o require light-coloured roofing mateials

Sector	Recommendation
Measuring, Monitoring & Research	The City should: o set targets and timelines that are based on the scientific evidence; o improve the inventory of air pollutants and GHG emissions; and o track progress, including health risks, and make monitoring transparent.
Education & Outreach	The City should: o focus on community action and city-wide programs; o harness neighbourhood leadership; o set up a Sustainability Bureau to mobilize education sector; o implement a Community Right-to-Know by-law by 2008; o engage in sustained region-wide public education on the risks of climate change and on solutions; o lead the way in region wide multi jurisdictional coordination; o integrate and expand the "20/20 The Way to Clean Air" to engage in sustained region-wide public education on the risks of climate change and on solutions; and o Promote New Air Quality Health Index;

Appendix C.

Overview of International and National Strategies to Address Climate Change

Key Information Sources

As part of the research work for the Environment Plan 2007, a review was made of environmental practices in other cities and organizations of interest to the City of Toronto. In 2006, as part of the research work for a Clean Air Action Plan, a comprehensive review was made of air quality management and greenhouse gas emission reductions in other cities. Those two research initiatives are the key sources of information for this summary. The following websites were identified as key sites for linking to the activities of hundreds of cities and organizations.

1. FCM's Partners for Climate Protection
http://www.sustainablecommunities.fcm.ca/Capacity_Building/Energy/PCP/Milestone_Status.asp

The Partners for Climate Protection (PCP) program is a network of more than 140 Canadian municipal governments (including Toronto) which have committed to reducing greenhouse gases and acting on climate change. PCP is the Canadian component of ICLEI's Cities for Climate Protection™ (CCP) network that comprises more then 650 communities world wide making the same efforts.

2. ICLEI's Cities for Climate Protection (CCP)
http://www.iclei.org/index.php?id=800

The Cities for Climate Protection™ (CCP) Campaign enlists cities to adopt policies and implement measures to achieve quantifiable reductions in local greenhouse gas emissions, improve air quality, and enhance urban liveability and sustainability. More than 650 local governments participate in the CCP, integrating climate change mitigation into their decision-making processes.

3. The Climate Group
http://www.theclimategroup.org/index.php?pid=430

The Climate Group is an independent, nonprofit organization dedicated to advancing business and government leadership on climate change. They promote the development and sharing of expertise on how business and government can lead the way towards a low carbon economy whilst boosting profitability and competitiveness.

4. SustainLane
http://www.sustainlane.us/

This organization provides third party verification of municipal government sustainability practices in the United States. SustainLane benchmarks sustainability programs, policies and practices for the largest 50 cities in the US.

Canadian Examples

1. Halifax Regional Municipality
http://www.halifax.ca/climate

Initiated in 2003, the municipality partnered with all levels of government and the private sector to develop **Climate SMART** (***S***ustainable ***M***itigation and ***A***daptation ***R***isk ***T***oolkit), which is presented as an integrated planning approach that addresses the impacts of climate change. The program supports a wide range of adaptation and mitigation activities, including models to determine potential climate change impacts, compiling up-to-date greenhouse gas (GHG) emission information, and preparing emission management options for different sectors of the community. Climate SMART is part Halifax's umbrella **Healthy, Sustainable, Vibrant Communities** strategy under which it implements a variety of sustainability initiatives, such as:

- a plan for a district energy system;
- a reduced idling campaign;
- a Clean Air Strategy; and
- a Community Energy Plan.

The approach taken by Halifax integrates greenhouse gas emission reduction and climate change impacts and adaptation considerations into its overall corporate-decision making process.

2. City of Calgary
http://www.calgary.ca/portal/server.pt/gateway/PTARGS_0_2_104_0_0_35/http;/content.calgary.ca/CCA/City%20Hall/Business%20Units/Environmental%20Management/Climate%20Change/Climate%20Change.htm

Published in July 2006, the City of Calgary's **Climate Change Action Plan Target 50** sets the following objectives:

- to reduce greenhouse gas emissions from City operations by 50% from 1990 levels by 2012; and
- to reduce per capita greenhouse gas emissions by 20% by 2020 and 50% by 2050.

Actions are proposed in the following areas: transportation, residential energy, commercial energy, renewable energy, waste and water.

Note: Calgary's initial climate change plan focused on municipal operations and the City received the FCM CH2M Hill Sustainable Community Award for this plan.

3. City of Ottawa
http://ottawa.ca/city_services/planningzoning/2020/air/index_en.shtml

In October 2003, the City of Ottawa developed an **Air Quality and Climate Change Management Plan,** which is a supporting document to the City's Environmental Strategy. The Plan provides a context for climate change and air quality issues within the City, proposes both a Corporate and Community target for greenhouse gas emission reduction and outlines the measures the City should undertake to reach this target. The proposed target is a 20% reduction in greenhouse gas (GHG) emissions, relative to 1990 levels, which is to be achieved by 2007 for City operations and by 2012 for Community emissions.

4. Greater Vancouver Regional District

http://www.city.vancouver.bc.ca/sustainability/pdf/CommunityPlan.pdf

The **Community Climate Change Action Plan** for the City of Vancouver sets a target of reducing greenhouse gas emissions by 6% below 1990 levels by 2012. The plan targets six key action areas:

- Community engagement;
- Housing energy efficiency;
- Commercial and industrial building energy efficiency;
- Community energy systems and supply;
- Transportation alternatives; and
- Vehicle and fuel efficiency.

International Examples

1. Mexico City
http://www.theclimategroup.org/index.php?pid=427

Mexico City has undertaken a comprehensive effort which integrates air quality and climate change called, **Proaire 2002-2010**. The objective of the plan is to achieve significant reductions in both air pollution and greenhouse gas emissions. In the first phase of the project, the city identified over 85 air pollution and greenhouse gas emissions reduction actions to be implemented over the eight year period. These include energy efficiency improvements, protection of forests and green spaces, and public transportation enhancements.

2. Greater London Authority
http://www.london.gov.uk/climatechangepartnership/aims.jsp
http://www.london.gov.uk/mayor/environment/climate-change/docs/ccap_fullreport.pdf

The Mayor of London, intends to make London an exemplary, sustainable world city. This will be delivered through the Greater London Authority's five functional bodies - Greater London Authority (GLA), London Development Agency (LDA), London Fire and Emergency Planning Authority (LFEPA), Metropolitan Police Authority (MPA) and Transport for London (TfL).

To tackle climate change specifically, the Mayor set up the **London Climate Change Partnership** (LCCP), to address adaptation to the impacts of climate change and, in June 2005, the **London Climate Change Agency** (LCCA) to address the CO2 dimensions of energy, waste, water and transport in the city with a view to establishing a low carbon trajectory going forward.

Two major achievements have been a 7% reduction in municipal CO2 emissions between 1990 and 2000 and a 19% reduction in traffic CO2 emissions within the congestion charging zone by 2004 on 2003 levels.

London's Climate Change Action Plan – Action Today to Protect Tomorrow – was released on February 27, 2007.

3. San Francisco
http://www.theclimategroup.org/index.php?pid=614

Released in 2004, the **Climate Action Plan** is centred on the goal of reducing citywide greenhouse gas emissions 20 percent below 1990 levels by the year 2012. This target was articulated in a resolution passed by the Board of Supervisors in 2002. The plan is focused on four categories of emissions reductions - transportation, energy efficiency, renewable energy and solid waste. Plan programs and policies include investing in energy efficiency and renewable energy, transit improvements and increased transit ridership, "greener" alternative fuel and hybrid fleets, and increasing recycling. The plan also recommends the establishment of a City interdepartmental working group to monitor Plan implementation, track progress and quantify CO2 emissions and reductions.

4. Portland

http://www.portlandonline.com/auditor/index.cfm?&a=25049&c=29151

The city has a goal of reducing greenhouse gas emissions by 10% below 1990 levels by 2010. The plan focuses on six key areas:

- policy research and education
- energy efficiency
- transportation, telecommunications and access
- renewable energy resources
- waste reduction and recycling
- forestry and carbon offsets

5. Seattle
http://www.seattle.gov/climate/

The objective of the **Seattle Climate Action Plan** is to reduce the city's greenhouse gas emissions by 680,000 metric tons and meet the 2012 international goals of the Kyoto Protocol. It was prepared in response to the recommendations by the mayor's **Green Ribbon Commission on Climate Protection** and details a series of specific steps that residents, business and the city will take to reach the Kyoto target of 7 percent reduction from 1990 levels by 2012. The bulk of the effort relies on reducing emissions from motor-fuel, natural gas and other sources at home, on the road, at work and in the community.

6. Melbourne

http://www.melbourne.vic.gov.au/rsrc/PDFs/EnvironmentalPrograms/ZeroNetEmissionsFull.pdf

Zero Net Emissions by 2020 is Melbourne's strategy to achieve economic growth, environmental improvements and social cohesion by shifting mainstream investment in buildings and power generation over the next two decades. There are three core elements to the strategy: building design; greening the power supply; and sequestering residual emissions.

7. Others

There are many other examples both Canadian and international, like Chicago, which is ranked very high by SustainLane for its overall environmental initiatives, or Hamilton, which has recently released in August 2006 its planned approach to air quality and climate change. The examples presented here provide a summary of what is being done by municipal governments.

Common Themes

1. Approach to Development

All of the plans have been developed with degrees of public consultation and engagement, and sometimes the plan is a partnership with key stakeholders signing off on the plan along with the municipal Council.

- Often there was a task force or panel mandated with developing the plans.
- The Mayor and Deputy Mayor played a strong leadership role.
- There was extensive research which guided identification of priorities and development of actions.

2. Content of the Plans
    - The plans are usually a community plan, not just a plan for City operations, and recognize that achievement means working in partnership with many stakeholders.
    - Often there are separate targets for City operations and a specific action plan.
    - Transportation tends to be an area of significant focus. Additional areas of focus are building operations/energy efficiency, increasing renewable energy, solid waste management, water systems, forestry, climate change mitigation, and adapting to climate change.

Many address air quality concerns and greenhouse gas emission reductions together, but it is not consistent.