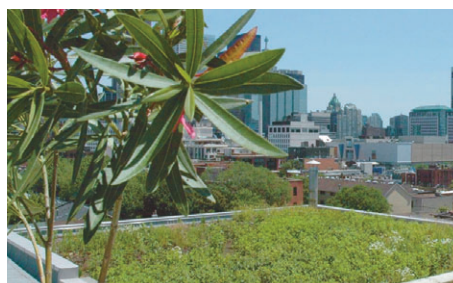


Change is in the Air

CLIMATE CHANGE, CLEAN AIR AND SUSTAINABLE ENERGY ACTION PLAN: MOVING FROM FRAMEWORK TO ACTION PHASE 1

HIGHLIGHTS

June 2007





CLIMATE CHANGE, CLEAN AIR AND SUSTAINABLE ENERGY ACTION PLAN:
MOVING FROM FRAMEWORK TO ACTION

PHASE 1

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June 2007



TORONTO ENVIRONMENT OFFICE

 **Toronto** Energy Efficiency Office

Introduction

This document summarizes the recommendations in the Climate Change, Clean Air and Sustainable Energy Action Plan: Phase 1, available on the City's website at www.toronto.ca/environment.

Climate change is the single biggest challenge facing our planet. The City of Toronto is committed to address that challenge through environmental leadership and a sustainable future for all Torontonians. In a sustainable city, a clean and healthy environment goes hand-in-hand with strong community engagement, a thriving economy and access to opportunity for all residents.

During our public engagement for the Climate Change, Clean Air and Sustainable Energy Action Plan we heard a very clear message: the residents of the City of Toronto want action and they want the knowledge and support needed to make real changes in their homes, businesses and neighbourhoods.

Toronto has a long history of leadership on climate change. The Better Buildings Partnership has created more than \$80 million in energy retrofits in buildings; the City's Energy Retrofit Program has carried out \$30 million worth of energy-related projects in City facilities. The Toronto Atmospheric Fund, the installation of wind, solar, hydrogen and tri-generation facilities at Exhibition Place, Enwave's Deep Lake Water Cooling system and policies such as the Toronto Green Development Standard are just a few other examples of ways in which the City of Toronto has been in the forefront of the movement to reduce greenhouse gas emissions.

The City's *Climate Change, Clean Air and Sustainable Energy Action Plan: Phase 1* outlines the City's response to the challenge of climate change and poor air quality. It is designed to move the City from a framework for discussion, to concrete action. This Action Plan will

accelerate our work to significantly reduce our release of greenhouse gases to the atmosphere and make substantive positive changes to our local air quality. The sustainable energy component of the plan will move Toronto from its current unsustainable state of energy use to a state of energy sustainability. It also recommends the creation of funding and other programs that encourage energy efficiency and renewable energy initiatives.

A number of other initiatives, such as the development of a Sustainable Transportation Implementation Strategy, the proposed Green Economic Sector Development Strategy, the Water Efficiency Plan and the 70% Solid Waste Diversion plan will also play an important role in meeting the City's climate change and air quality targets. Phase 2 of the Climate Change, Clean Air and Sustainable Energy Action Plan will more clearly link these other related initiatives.

TORONTO'S GREENHOUSE GAS AND SMOG EMISSION REDUCTION TARGETS

TORONTO'S REDUCTION TARGETS FOR GREENHOUSE GAS EMISSIONS, FROM THE 1990 LEVELS OF APPROXIMATELY 22 MILLION TONNES PER YEAR FOR THE TORONTO URBAN AREA, ARE:

6% BY 2012 (THE "KYOTO TARGET")
30% BY 2020
80% BY 2050

THE REDUCTION TARGET FOR LOCALLY GENERATED SMOG CAUSING POLLUTANTS IS 20%, FROM 2004 LEVELS, BY 2012 FOR THE TORONTO URBAN AREA.



「RECOMMENDATIONS FOR ACTION」

LIVE GREEN TORONTO:

Neighbourhood Actions for a Green Toronto

(Staff Report Recommendation 4, pages 4/5)

The plan is designed to encourage Torontonians to adopt more environmentally friendly lifestyles, and reduce the energy required to heat, cool and light our homes.

The City will:

- o establish the Live Green Toronto program, to support individuals, residents' groups, Business Improvement Areas and other neighbourhood agencies and community organizations to take action in their own neighbourhoods in areas such as energy efficiency, renewable energy, local food production, water conservation, tree planting, green roofs, compact fluorescent lighting, downspout disconnection, and the use of native plants.
- o create a framework for the renewal of Toronto's concrete high-rise residential buildings, working in partnership with E.R.A. Architects, the University of Toronto and the Canada Mortgage and Housing Corporation;
- o create a City-delivered “one-window” source of information on federal, provincial, municipal, private sector and community programs related to energy and other environmental issues;
- o request the Province to fast-track changes to the energy and sustainability requirements of the Ontario Building Code for buildings in Toronto;
- o establish new standards to require and regulate green roofs in the City, and update the Green Development Standard accordingly;
- o integrate an environmental performance rating into any rating system developed for rental residential units, based on Toronto's Green Development Standard;

WHAT WE HEARD:

“I WOULD SET UP A PROGRAM WHEREBY THE CITY WOULD PROVIDE AN INTEREST-FREE LOAN TO BE PAID BACK AS A SURCHARGE ON ONE'S PROPERTY TAX BILL AT A RATE SIMILAR TO THE EXPECTED SAVINGS IN ENERGY UNTIL THE LOANED AMOUNT IS REPAYED. WITH NO OUT-OF-POCKET COST FOR THE HOMEOWNER, THERE IS NO REASON WHY VIRTUALLY ALL STANDARD EFFICIENT FURNACES CAN'T BE REPLACED WITH HIGH EFFICIENCY MODELS BY 2012.”

- o develop a voluntary Energy Performance Labelling system for low-rise residential buildings, in conjunction with Natural Resources Canada and other partners, and it will be coordinated with the Green Development Standard;
- o investigate banning the use of two stroke engines in powering home and garden equipment by 2010.

GREEN BUSINESS TORONTO

(Staff Report Recommendation 5, pg 6)

The plan will help Toronto businesses be more environmentally friendly.

The City will:

- o establish an Eco-Roofs Program to make a minimum of 10% of the total industrial, commercial and institutional roof space more environmentally friendly by 2020, integrating existing incentives and programs such as the City's Green Roof Incentive program;
- o develop a business plan for a model green-industry business park;
- o establish in 2007 an Enviro-Business Working Group with a mandate to create a comprehensive environmental efficiency and improvement program that offers pollution prevention and water efficiency and energy efficiency support;
- o establish in 2007 an Enviro-Food Working Group to promote local food production, increase community gardens, identify ways to remove barriers to the expansion of local markets that sell locally produced food, and review the City's food purchasing policies.



BECOMING THE RENEWABLE ENERGY CAPITAL OF CANADA

(Staff Report Recommendation 7, pages 7/8)

The plan will help make Toronto a leader in local renewable energy production.

The City will:

- o issue in 2007 a request for an expression of interest to develop renewable energy systems (e.g., solar, wind, geothermal and biogas) for approximately 1,500 City buildings and landfill sites;
- o develop a pilot program for residential solar hot water heating, and report in 2007 on the resources required to implement this program;
- o develop a pilot solar heating program for privately owned swimming pools, and report back in early 2008 on the resources required to implement this program;
- o prepare in 2007 a Renewable Energy By-law (Phase I) that will permit renewable energy generation as-of-right on all residential properties, and set appropriate restrictions on height, size and placement of structures;
- o prepare recommendations to address the following renewable energy generation issues:
 - i) standards for the placement, orientation, size and form of renewable energy technologies;
 - ii) options to protect access to solar and wind resources from property owners who have installed renewable energy equipment;
 - iii) permissive regulations for district-based energy distribution between multiple properties; and
- iv) provide guidance with respect to potential issues of conflict around tree protection and installation of renewable energy systems;
- o prepare in 2007 a report that addresses technical, financial, and service delivery options to expand Deep Lake Water Cooling capacity by 20 percent; and establish a long-term plan to double the existing capacity of deep lake water cooling.



SUSTAINABLE TRANSPORTATION

(Staff Report Recommendation 8, pages 8/9/10)

The plan will help Toronto build a sustainable transportation system.

The City will:

- o initiate in 2007 environmental and engineering studies for the Transit City plan and submit a schedule to complete the studies and a financial plan including funding sources and revenue tools;
- o report in 2007 on the actions and resources required to complete the infrastructure elements of the Bike Plan by the end of 2012, and in particular expand the existing network of bike lanes and trails from about 300 kilometres to 1,000 kilometres, with a timetable and annual expansion objectives;
- o prepare in 2007 a Sustainable Transportation Implementation Strategy, that draws from and is consistent with existing policies and plans (e.g. the Official Plan; the Bike Plan; Transit City Plan; the TTC Ridership Growth Strategy; and the Walking Strategy) to achieve the greenhouse gas emission and smog emission reduction targets by:
 - i) including a long-term vision of a sustainable transportation system which achieves the targeted emission levels and meets the economic needs of the city;
 - ii) identifying and prioritizing short-term transportation projects that will accelerate the achievement of the City's sustainable transportation agenda; and
 - iii) creating a Strategic Transportation Planning Group to establish priorities and oversee the coordination of the planning, implementation and operation of the City's sustainable transportation system;
- o create in 2007, a Greening Commercial Fleets Environment Working Group to identify and implement

WHAT WE HEARD:

"I GAVE UP MY CAR OVER 15 YEARS AGO AND I BIKE, WALK OR USE THE TTC, HOWEVER SAFE BIKE PATHS ARE STILL VERY LIMITED IN OUR CITY, AND THE TTC IN MANY CASES STILL TAKES TIME COMING. IMPROVEMENT IN OUR PUBLIC TRANSIT AND BIKE PATHS WOULD HELP OUR FAMILY."

actions to green commercial fleets and reduce emissions city-wide;

- o develop a program to shift all taxis and limousines operating in the City to low emission or hybrid technologies by 2015 or earlier, based on the results of the Green Taxi Pilot;
- o continue to encourage the Provincial and Federal Governments to provide the policies, programs and funding necessary for Toronto to achieve a sustainable transportation system that will maintain a high quality of life and reduce greenhouse gas emissions by 80% by 2050. Of particular concern to the City are:
 - i) vehicle engine and fuel standards that will reduce emissions;
 - ii) financial incentives to utilize public transit;
 - iii) stable and secure funding for the operation and expansion of public transit systems; and
 - iv) manage urban growth and development to create a high quality of life and encourage people to use alternative modes of transportation;
- o work with the Province, the Greater Toronto Transportation Authority and GTA municipalities to investigate a road pricing regime for the GTA that will encourage people to use alternative modes of transportation, and dedicate any funds raised to transit improvements.

DOUBLE THE TREE CANOPY

(Staff Report Recommendation 10, page 12)

The plan will see Toronto double the tree canopy from 17% to 34%.

The City will:

- o establish the Tree Planting and Partnership Program, in partnership with community organizations, schools, business improvement areas and volunteers, to expand resources for the planting, maintenance and care of trees;
- o submit in 2007 a report that addresses:
 - i) steps that will be taken to increase tree plantings in the short-term;
 - ii) strategic planning steps to double the tree canopy by 2050;
 - iii) the requirements for data collection and management and modelling;
 - iv) projected operating and capital budget requirements; and
 - v) engagement of stakeholders through a Urban Forest Tree Canopy Steering Committee.

WHAT WE HEARD:

“REMOVE ROAD LANES TO MAKE ROOM TO REPLACE TREES IN BOXES WITH FULL SIZE TREES.”



BUILDING PARTNERSHIPS FOR CHANGE

(Staff Report Recommendation 11, pages 12/13)

The City will:

- o continue to build the partnerships necessary with businesses, industries, research institutions, community groups, resident associations, neighbouring municipalities, other orders of government and international organizations in order to foster mutually beneficial improvements in air quality and climate change:
 - i) invite stakeholders to participate in the following Enviro-Action Working Groups (including the ones suggested in earlier recommendations): Commercial Fleets; Small Business; Good Neighbours Food Procurement; Trees and Greenspace; and Climate Change Adaptation, in addition to working groups that already exist (e.g. Greening Health Care, Renewable Energy Working Group) and in other relevant sectors, such as social housing and sustainable transportation;
 - ii) discuss forming research partnerships on energy-related issues of mutual interest, and report on the progress of this initiative in early 2008;
 - iii) continue to develop and enhance partnerships with the:
 - Greater Toronto Area Clean Air Council;
 - Greater Toronto Transit Authority;
 - Provincial and Federal Governments;
 - Clinton Climate Change Initiative;
 - C40 Large Cities Climate Initiative;
 - International Council for Local Environmental Initiatives;
 - Federation of Canadian Municipalities; and
 - other bodies, non-governmental organizations and organizations with a focus on addressing climate change and air quality.



INSPIRING ACTION:

Public Awareness

(Staff Report Recommendation 12, page 13)

The City will help Torontonians understand the need to reduce their energy use and what actions they can take at home, work and on the road.

- o The City will organize a charette, to develop in 2008 a three year climate change and air quality marketing campaign which integrates existing programs and interactive web-based programs.

WHAT WE HEARD:

"I LIKE THE IDEA OF ELIMINATING ALL TWO-STROKE ENGINE LEAF-BLOWERS OWNED BY THE CITY AS SOON AS POSSIBLE. I THINK THAT THE CITY OF TORONTO SHOULD INVITE HONDA, CUB CADET, AND ANY OTHER MANUFACTURERS OF 4-STROKE GARDEN CARE AND POWER EQUIPMENT TO BID ON A REPLACEMENT PROGRAM FOR ITS FLEET, ELIMINATING ALL TWO-STROKE ENGINES OWNED BY THE CITY BY 2010."



PREPARING FOR CLIMATE CHANGE:

Adaptation

(Staff Report Recommendation 13, pages 13/14)

The plan will help Toronto prepare for and adapt to climate change and the effects on its residents, vulnerable populations and City operations.

- o The City will complete in 2007 a report to the Executive Committee that:
 - i) identifies the components of a climate change adaptation strategy for City operations and the community;
 - ii) includes the actions required to develop a climate change adaptation strategy including project budget costs;
 - iii) ensures the strategy will incorporate the response mechanisms needed to meet identified environmental changes, including health related impacts such as the heat alert response program;
 - iv) identifies the requirements for data collection and management and modelling; and
 - v) incorporates stakeholders' input.

WHAT WE HEARD:

"THE PROPOSED ANNUAL PARKING SPACE FEES AND/OR MOTOR VEHICLE REGISTRATION FEES LEVIED BY THE CITY ARE AN INTERESTING APPROACH TO RAISING REVENUES, BUT ANY REVENUES GENERATED IN THIS WAY MUST BE DIRECTED TO MAKING ALTERNATIVE TRANSPORTATION CHOICES (I.E. TRANSIT, CYCLING, ETC.) MORE CONVENIENT AND ATTRACTIVE."



REGULAR MONITORING AND REPORTING

(Staff Report Recommendation 14, page 14)

The plan will see the City monitor and evaluate its progress on reducing emissions, and report on that progress to the community.

The City will:

- o continue to measure, monitor and model greenhouse gases and smog causing emissions to ensure efforts are focused on those that have the greatest effect on human health and the natural environment;
- o request energy utility companies in Toronto to provide data to the City, in a manner respectful of customer confidentiality requirements, to assist in monitoring the City's progress;
- o evaluate health and economic benefits associated with policy options that result in lower levels of air pollution in Toronto;
- o propose a reporting program for the use and release of toxic air contaminants and explore the reporting of greenhouse gas emissions;
- o report on its progress in moving to a state of energy sustainability, and update Toronto's Sustainable Energy Plan annually, subject to the terms of the *Energy Conservation Leadership Act, 2006*; and
- o report on air quality and greenhouse gas emissions, outcomes of policies, programs and activities in connection with the Climate Change, Clean Air and Sustainable Energy Action Plan and recommend changes and new actions.

WHAT WE HEARD:

"WE OWN A SMALL HOUSE AND ARE ON A LIMITED INCOME, THEREFORE SOME REBATE OR CASH REDUCTION ON ITEMS THAT WOULD IMPROVE OUR HOME WOULD BE USEFUL. WE HAVE CONSIDERED THE INSTALLATION OF A SOLAR PANEL AS WELL AS A SMALL PORTION OF OUR ROOF THAT COULD BE CHANGED INTO A "GREEN" ROOF. ALL WORTHWHILE PROJECTS THAT WE WOULD BE GLAD TO INVEST IN, HOWEVER LIKE MOST WE STRUGGLE TO MAKE OUR CURRENT BILLS. PERHAPS SOME KIND OF HOME "LOAN" PROGRAM FOR THESE TYPES OF CHANGES WOULD MAKE IT POSSIBLE FOR US AND OTHERS TO ACT ON SOME OF THE NEW TECHNOLOGIES."



GREENING CITY OPERATIONS

(Staff Report Recommendation 9, pages 10/11)

The plan will help Toronto build on its success in reducing greenhouse gas emissions from City operations by over 30% since 1990.

The City will:

- o undertake sustainability upgrades for City Hall and Nathan Phillips Square;
- o connect City Hall, Police Headquarters and Union Station to Enwave's Deep Lake Water Cooling system;
- o phase out by the end of 2008 the use of incandescent light bulbs wherever possible, and develop a program for environmentally appropriate disposal of all lighting fixtures and bulbs;
- o allocate funds in 2008 to move the entire street sweeper fleet to new technology that collects more than 90% of road dust and improves street level air quality by as much as 20%;
- o complete in 2007, Phase II of the Green Fleet Transition Plan;
- o develop by mid-2008 a consolidated Green Fleet Plan for City of Toronto fleets not included in the Phase I Green Fleet Transition Plan, including actions to eliminate the idling of City vehicles through the City's Anti-Idling Campaign;
- o reduce single occupancy motor vehicle home to work trips made by City employees by ensuring adequate resources are in place to support the Smart Commute program for the Toronto Public Service;
- o report in 2007 on:
 - i) opportunities for additional landfill gas collection systems at closed landfills;
 - ii) plans to collect and utilize landfill gas at the recently acquired Green Lane Landfill site; and
 - iii) plans to utilize digester gas from the City's anaerobic digestion facilities that process organic materials collected through the Green Bin program;
- o report on a proposal to phase out the use of equipment powered by two-stroke engines in City operations (for example leaf blowers and lawn mowers) by 2009;
- o report on any recommended changes to the City's Environmental Purchasing Policy;
- o include language that outlines fuel efficiency, green fleet requirements and directions on no idling in all contracts that include the use of vehicles;
- o organize a "Green Vendors Fair" for providers of products and services that improve the energy performance of buildings in all major building sectors.



PROGRAM FUNDING

(Staff Report Recommendations 2 and 3, pages 3/4)

The plan will help the City establish the financial resources to implement the programs required to meet Toronto's reduction targets.

The City will:

- o create a \$42 million Toronto Energy Conservation Fund to support energy conservation initiatives in City facilities as well as buildings in the Municipal, University/College, School and Hospital (MUSH) and not-for-profit sectors, with implementation to commence in 2008;
- o create a \$20 million Toronto Green Energy Fund to support renewable energy installations in Toronto, with implementation to commence in 2008;
- o endorse \$9 million for the continued implementation of Deep Lake Water Cooling at City Hall, Police Headquarters and Union Station;
- o endorse \$13 million to continue energy efficiency and sustainability upgrades at City Hall and Nathan Phillips Square for the first phase of a sustainability showcase;
- o develop a plan to obtain 25 percent of the City's electricity needs from green energy sources over a four year phase-in period starting in 2008;
- o endorse an additional \$1 million for Tree Planting and Green Roof Initiatives to be funded from the Water Stabilization Reserve.

WHAT WE HEARD:

"WE NEED EDUCATION AND A FIRM HAND WITH TAXATION. I WOULD BE PLEASED TO WRITE A CHEQUE FOR \$50.00 TWICE A YEAR TO HELP GET ACTION."



PLANNING FOR A SUSTAINABLE ENERGY FUTURE

(Staff Report Recommendation 6, page 6)

The plan will help move Toronto toward a sustainable energy future.

- o The City will report in 2007 on a process to develop an integrated approach for community energy planning based on community energy zones.

WHAT WE HEARD:

“AS AN ELEMENTARY SCHOOL TEACHER, I REGULARLY REMIND STUDENTS TO TURN OFF LIGHTS WHEN THEY LEAVE A CLASSROOM. AND OF COURSE, I ENCOURAGE THEM TO DO THE SAME AT HOME. BUT MY STUDENTS LIVE DOWNTOWN WHERE THEY REGULARLY SEE HUGE OFFICE TOWERS WITH THOUSANDS OF LIGHTS BURNING ALL NIGHT LONG WHEN FEW, IF ANY WORKERS ARE THERE. IF TOWER MANAGERS CAN'T FIND A WAY TO TURN OFF THE LIGHTS AFTER WORK HOURS, CAN'T WE PUT IN PLACE PENALTIES TO ENCOURAGE THEM TO DO SO?”



Background Information

Climate Change, Clean Air and Sustainable Energy Action Plan: Staff Report, June 13, 2007
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4982.pdf>)

Climate Change and Clean Air Action Plan Phase 1: Staff Background Report
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4986.pdf>)

Climate Change and Clean Air Action Plan: Civic Engagement Report
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4988.pdf>)

Change is in the Air: Toronto's Commitment to an Environmentally Sustainable Future
Framework for Public Review and Engagement, March 2007
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-3852.pdf>)

Toronto's Sustainable Energy Plan: Energy Efficiency and Beyond
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4989.pdf>)

Report on Consultations for Toronto's Sustainable Energy Plan
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4996.pdf>)

Background Report on the Energy Plan for Toronto: Pricewaterhouse Coopers
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4997.pdf>)

Blueprint for an Energy-Efficient City Hall 2007: Leading By Example
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4998.pdf>)

Toronto's Greenhouse Gases and Air Quality Emissions Inventory
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4990.pdf>)

Greenhouse Gases and Air Pollutants in the City of Toronto, June 2007
(<http://www.toronto.ca/legdocs/mmis/2007/pe/bgrd/backgroundfile-4991.pdf>)

10 things you can do now

- use compact fluorescent light bulbs
- adjust your thermostat to reduce energy use
- conserve water
- use energy efficient appliances and furnaces
- turn off lights, TVs and computers when not in use
- leave the car at home - bike, walk, take transit
- plant a tree
- upgrade the insulation in your home
- get a home energy audit
- reduce, reuse, recycle



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