



**STAFF REPORT  
ACTION REQUIRED**

**Climate Change Action Plan – Implementation of Key Program Initiatives**

<b>Date:</b>	November 13, 2007
<b>To:</b>	Budget Committee
<b>From:</b>	Richard Butts, Deputy City Manager Joseph P. Pennachetti, Deputy City Manager and Chief Financial Officer
<b>Wards:</b>	All Wards
<b>Reference Number:</b>	P:\2007\Cluster B\PPFA\TEO\BU07013

**SUMMARY**

---

This report recommends funding for seven key program areas of the City of Toronto’s Climate Change, Clean Air and Sustainable Energy Action Plan (the “Action Plan”) and provides descriptions of the programs, including objectives, content and what will be achieved.

The seven programs addressed in this report are those components of the Action Plan assigned to the Toronto Environment Office for program implementation, policy development, monitoring and measurement and project co-ordination. Other components of the Action Plan are addressed through the work plans and program budgets of agencies, boards, commissions and divisions from across the corporation.

The seven programs that this report addresses are: the Live Green Toronto initiative, the Eco-Roofs program, the Transportation Demand Management program, the Climate Change Adaptation Strategy, the Phase Out of Two Stroke Engines, Identification of Opportunities to Expand Deep Lake Water Cooling, and Air Quality and Greenhouse Gas Emissions Monitoring and Modelling.

The implementation of these programs will be coordinated with other City programs, in particular the Sustainable Energy Funds, the Office of Partnerships and the Clean and Beautiful program, as well as programs offered by federal and provincial governments and other agencies. The Director of the Toronto Environment Office will provide regular reports on the progress of these programs and their performance in terms of reducing greenhouse gas and smog causing emissions.

## **RECOMMENDATIONS**

---

The Deputy City Manager and the Deputy City Manager/Chief Financial Officer recommend that:

1. the 2008 Capital Budget for Climate Change Plan key initiatives with a total project cost of \$20.980 million consisting of new cash flow funding for: 6 new sub-projects with a 2008 total project costs of \$20.980 million that requires cash flow of \$2.810 million in 2008 and a future year commitment of \$4.375 million in 2009, \$3.985 million in 2010, \$3.295 million in 2011 and \$3.015 million in 2012 be approved;
2. the Climate Change 2008 Capital Budget and 2009-2012 Capital Plan be approved, with gross expenditures totalling \$20.98 million funded in the amount of \$17.480 million from the Strategic Infrastructure Partnership Reserve Fund and \$3.500 million funded from third party contributions; consisting of FCM grants, Federal and Provincial funding and other sources, to be determined; and
3. this report with the operating budget impact of \$1.760 million gross, \$1.630 million net in 2008, \$2.124 million gross, \$1.994 million net in 2009, \$1.922 million gross, \$1.542 million net in 2010, \$1.524 million gross, \$0.894 million net in 2011 and \$1.572 million gross, \$0.942 million net in 2012 be referred to the Budget Committee for consideration with the City's 2008 Operating Budget Process.

### **Financial Impact**

#### Capital Funding

It is currently estimated that programs identified in this report will require capital funding of \$20.980 million. The recommended programs will help to achieve the City's greenhouse and smog emission targets and to deliver on the recommendations of the Climate Change, Clean Air and Sustainable Energy Action Plan:

Climate Change Plan Key Program Initiatives	(000)s					Program Totals
	2008	2009	2010	2011	2012	
Live Green Toronto	1,500	3,300	3,250	3,250	3,250	14,550
Eco-Roof Program	200	800	800	400	200	2,400
Climate Change Adaptation	350	505	825	515	455	2,650
Investigate Phase-Out of Two Stroke Engines	100					100
Investigate Expansion of Deep Lake Water Cooling	100					100
GHG & Air Quality Monitoring & Modelling	560	270	110	130	110	1,180
<b>Total Capital</b>	<b>2,810</b>	<b>4,875</b>	<b>4,985</b>	<b>4,295</b>	<b>4,015</b>	<b>20,980</b>
External Funding	0	500	1,000	1,000	1,000	3,500
Net City Funding	2,810	4,375	3,985	3,295	3,015	17,480

It is anticipated that a minimum of \$3.500 million will come from external funding sources, primarily corporate partnership/sponsorships for the Live Green Toronto initiative. Other external funding will potentially come from FCM grants, Federal and Provincial programs and other sources.

The remaining \$17.480 million will be funded from the Strategic Infrastructure Partnership Reserve Account which was established in 2006 to fund the City's major tax-supported strategic infrastructure projects in partnership with other orders of government and major strategic tax-supported environmental capital projects conditional on external funding partners.

It is recommended that capital funding required to implement the above key Climate Change Plan initiatives be approved as a part of the Climate Change 2008 Budget and 2009-2012 Capital Plan.

### Operating Budget Requirements

In addition to the above capital funding, some of the proposed initiatives require operating budget funding starting in 2008:

Climate Change Plan Key Program Initiatives	(\$000s)					Program Totals
	2008	2009	2010	2011	2012	
Live Green Toronto	1,300	1,800	1,550	1,200	1,200	7,050
Transportation Demand Management	280	280	280	280	280	1,400
Climate Change Adaptation GHG & Air Quality	85	10	10	10	10	125
Monitoring & Modelling	95	34	82	34	82	327
<b>Total Operating</b>	<b>1,760</b>	<b>2,124</b>	<b>1,922</b>	<b>1,524</b>	<b>1,572</b>	<b>8,902</b>
External Funding	130	130	380	630	630	1,900
Net City Funding	1,630	1,994	1,542	894	942	7,002

It is anticipated that the 2008 operating budget requirements of \$1.735 million will be funded partially from external sources (\$0.130 million from the Greater Toronto

Transportation Authority for the Smart Commute Initiative) with the funding of \$1.630 million provided by the City from the Strategic Infrastructure Partnership Reserve Account, or net \$0 for the City.

It is recommended that this report be referred for consideration with the 2008 Operating Budget process as a part of the Toronto Environment Office's operating budget.

## **DECISION HISTORY**

At its meeting of July 16 – 19, 2007 Council adopted the Climate Change, Clean Air and Sustainable Energy Action Plan: Moving from Framework to (the "Action Plan") (<http://www.toronto.ca/changeintheair/index.htm>). Included in the Action Plan were recommendations to develop the following programs:

- Live Green Toronto;
- Eco-Roofs Program;
- Transportation Demand Management;
- Phase out the use of Two-Stroke Engines;
- Identify Opportunities to Expand Deep Lake Water Cooling;
- Climate Change Adaptation; and
- Air Quality and Greenhouse Gas Emissions Monitoring and Modelling.

Funding requirements for these programs were not identified in the Action Plan and staff were directed in Recommendation 2(f) to report back on initiatives for which the funding is yet to be determined.

This report identifies the objectives and five year funding requirements for these key program areas of the Action Plan assigned to the Toronto Environment Office for program implementation, policy development, monitoring and measurement and project co-ordination. Other components of the Action Plan are addressed through the work plans and program budgets of agencies, boards, commissions and divisions from across the corporation.

## **ISSUE BACKGROUND**

This report responds directly to recommendation 2f and to recommendations 4a (Live Green Toronto), 5a (Eco-Roofs Program), 15(iii) (Green Roof Incentive program), 9g (Smart Commute initiative), 4j and 9i (Phase out Two Stroke Engines), 12a (Climate Change Social Marketing Campaign), 13a (Climate Change Adaptation Strategy), and 14a (Monitoring and Modeling of GHGs and Smog) of the Action Plan (referenced above).

In addition, the delivery of these programs will support the implementation of other key projects arising from the Action Plan, such as the Tower Renewal Project, community efforts to develop renewable energy systems, efforts to expand community and allotment gardens, and actions to promote the production and consumption of locally grown food.

## **COMMENTS**

### **1. LIVE GREEN TORONTO – PROGRAM DESCRIPTION**

#### **1a. Direction of Council**

As part of the Action Plan City Council directed that staff establish the Live Green Toronto program, to support individuals, residents' groups, Business Improvement Areas and other neighbourhood agencies and community groups to green their own neighbourhoods through a range of programs (recommendation 4a). Council also directed that staff develop a climate change and air quality marketing campaign (recommendation 12a).

#### **1b. Justification**

The City of Toronto has long been recognized as a global leader in reducing municipal greenhouse gas emissions. Toronto's leadership was recognized by the Climate Group through a Low Carbon Leader Award in 2005, for achieving a 42 per cent reduction in corporate greenhouse gas emissions between 1990 and 1998. However, real progress in addressing climate change can only be made if the effort is focused on significantly reducing greenhouse gas emissions from the community as a whole. At its July, 2007 meeting, City Council acknowledged that the greatest reductions in emissions will occur from changes in how people move about the city and how they operate their homes and businesses and people need to understand why, what and how to change.

Through its programs and policies, the City of Toronto and its agencies, boards and commissions can have a significant impact on community-wide greenhouse gas emissions. Many complementary policies, programs and projects aimed at improving urban service levels and Toronto's quality of life also have the co-benefit of greenhouse gas reductions associated with them. A few examples include the TTC Ridership Growth Strategy, the Transit City Plan, the Green Development Standard, the Waste Diversion Strategy, the Water Efficiency Plan, Sustainable Transportation Initiatives, and the Green Economic Development Strategy.

In addition to providing services that enable Torontonians to green their homes, businesses, and transportation, the City can play a key role in catalyzing Toronto's neighbourhoods and communities to take action on climate change. At the public engagements for the Climate Change Plan, a frequently-heard comment was that Torontonians need easily accessible information on environmental programs to help them make the right decisions. Suggested components of such a program should be:

- provision of visible and multiple advertisements about climate change and environmental issues;
- clear communications on what individual actions must be taken to address climate change;
- a central website where all environmental initiatives and the financial subsidies available from each level of government, or an environmental hotline that provides information relevant to Torontonians;
- support for “demonstration neighbourhoods” to showcase green living; and
- provision of information on environmentally-friendly products and local foods.

The Live Green Toronto Program is designed to deliver on these requests, and in doing so help Toronto residents and businesses understand the impact of their activities on climate change and the environment. Furthermore, Live Green Toronto will provide them with support in reducing their greenhouse gas emissions.

### **1c. Objective**

The purpose of the Live Green Toronto program is:

- to **catalyze** effective community action on climate change and environmental issues in Toronto;
- to **simplify** the process of accessing information, financial incentives, and technologies that reduce environmental impacts and greenhouse gas emissions; and
- to provide direct **support** to Toronto’s neighbourhoods and communities in making lifestyle choices that significantly reduce carbon footprints

### **1d. Program Elements**

The Live Green Toronto Program will consist of the following program components designed to accomplish this objective:

#### **(i) Social Marketing Campaign**

The Toronto Environment Office is currently designing social marketing techniques that will help to instil the values and lifestyle choices that reduce greenhouse gas emissions. Under the Action Plan Council directed staff to develop a social marketing campaign. This will include social networking and interactive web-based tools, including the proposed Zerofootprint Toronto initiative, a public advertising campaign (including TTC and City vehicles, transit shelters and stations, newspaper ads, and billboards), monthly challenges, distribution of promotional items, and door-to-door campaigning. The need for resources delivered in languages other than English, or targeted at diverse communities, is also being considered.

Good examples of social marketing relating to greenhouse gas emissions reductions exist in several cities, including Toronto. [20/20 the Way to Clean Air](#) is a successful campaign of Toronto Public Health that promotes improved air quality through transportation and energy efficient choices. The Live Green Toronto social marketing campaign will include 20/20 content and build on its success, including the use of the 20/20 Planner and the link to school curriculum through the EcoSchools program.

Other cities that have developed comprehensive social marketing campaigns include: the “DIY Planet Repair” campaign in London (England), the Community Carbon Reduction Project (“CRed”) in the East of England, the “One Day” program in Vancouver, and GreenNYC in New York City. Highlights from each of these local campaigns include:

#### **DIY Planet Repair (London, England)**

- Interactive questions and answers about how to reduce greenhouse gas emissions
- Partnering with a local agency to deliver home energy audits
- Carbon emissions calculator
- Listing of local environmental events
- Household toolkit (including shower timer, reusable mug, and “turn-it-off” stickers)
- Monthly newsletter
- Money-saving coupons

#### **CRed (East England)**

- Greenhouse gas reduction tips for both homes and businesses
- Personal pledges to save carbon
- Household carbon calculator
- Domestic energy use tool to track energy consumption

#### **One Day (Vancouver)**

- Monthly email newsletter
- “Ask an Expert” (Questions submitted to website are answered by an expert)
- Success stories submitted by members of the public
- Events calendar
- Downloads including stickers, tip sheets, posters, and computer wallpaper

#### **GreenNYC (New York City)**

- More than \$3.2 million in media assets committed towards the campaign, including \$1.5 million in donated ad space from New York’s television, newspapers and radio stations
- “Top Ten” tips for energy and resource conservation
- ENERGY STAR product promotions, including coupons

All of these campaigns also have strong visual identifiers that when placed on decals or stickers are treated as a certification for green activities, or as a reward that is earned for green lifestyle choices. A visual identifier for Live Green Toronto is being developed,

and consideration is being given as to how it might be used as a certification or accreditation for greening initiatives.

### **(ii) Website**

The Live Green Toronto website will serve as the nexus for information on the Live Green Toronto program. It will provide one-window access to municipal, provincial and federal incentive programs, including Toronto Hydro and the [powerWISE](#) campaign, the federal [ecoACTION](#) programs and the provincial [Go Green Ontario](#) programs. The site will also include “green tips” such as those available from campaigns in which the City of Toronto already participates, including [20/20 The Way to Clean Air](#). Other green living tips can be garnered from complementary resources like the “We Conserve” campaign from the [Conservation Council of Ontario](#).

The interactive nature of the website will allow the Toronto Environment Office to track uptake of green living tips, and to monitor and respond to frequently asked questions and other forms of interaction via the website.

A first phase of the development of the Live Green Toronto website will see the inclusion of existing City environmental programs under the Live Green Toronto banner. These include programs with significant carbon-reducing benefits, including waste diversion, sustainable transportation, urban forestry, energy efficiency, water efficiency, and storm water management programs.

The website will be divided into several sections targeting separate audiences and/or issues:

- Live Green for Neighbourhoods and Communities
- Live Green at Home (reducing water, energy, and toxic substances)
- Live Green on the Go (sustainable transportation)
- Live Green with Nature (gardening, urban forestry, biodiversity)
- Live Green for Kids (sustainability education resources)
- Live Green for Business (targeting Business Improvement Areas and small and medium-sized enterprises)

### **(iii) Events, Workshops & Celebrations**

The Live Green message will have a strong presence in the community at existing events and celebrations including Community Environment Days, the Green Toronto Awards, the Green Toronto Festival, Business Improvement Area events, and other community festivals.

In 2008, options for developing and delivering a workshop series (e.g., draught-proofing, low-water gardens, etc.) will be investigated.



#### **(iv) Incentive & Funding Programs**

In addition to providing simplified, one-window access to existing municipal, provincial and federal incentives, the website will also provide information on common funding sources for community groups and grassroots initiatives, including the Toronto Community Foundation and Ontario Trillium Foundation.

The Toronto Environment Office is also proposing the establishment of a small Live Green Community Grants fund to provide community-based organizations with seed funding for grassroots climate change initiatives. The eligibility criteria will be developed in consultation with the Toronto Atmospheric Fund, Toronto Public Health, Clean and Beautiful Secretariat and the Energy Efficiency Office and presented to City Council in early 2008.

In addition, it is recommended that a Community Projects capital program be established whereby community and neighbourhood groups identify potential projects but implementation is managed by the City. The criteria for identifying and selecting projects will also be developed and presented to City Council in early 2008.

#### **(v) Live Green Community Animators**

The Toronto Environment Office is proposing that a fund be established whereby the City will provide financial support to Non-Governmental Organizations, able and willing to provide dedicated community animators to assist communities and neighbourhoods in identifying and launching community-based climate change initiatives. Community animators will also play a role in monitoring and evaluating community-led initiatives, in coordinating Live Green workshop series, and in making sure that Live Green Toronto has a presence at Community Environment Days and other community festivals. Live Green Community Animators will also liaise with other Ward and neighbourhood-based City led initiatives, such as Community Recreation Teams, Neighbourhood Action Teams in the 13 priority neighbourhoods, and the Clean and Beautiful program and the Business Improvement Areas.

#### **(vi) Live Green Neighbourhood Projects**

By the end of 2008, the Toronto Environment Office plans to have Live Green Toronto projects operating in different parts of the city. The nature of neighbourhood and community projects will be determined in consultation with each community/neighbourhood. Examples of neighbourhood projects include:

- Neighbourhood tree inventory and urban forest improvement action plans;
- Low-water gardening initiatives
- Walking School Bus
- Solar energy buying cooperatives
- Community gardens
- Community Smart Commute initiatives

These projects will build upon the success of pre-existing initiatives like [smartliving St. Lawrence](#), the “[RISE](#)” and [WISE](#)” solar cooperatives in Riverdale and West Toronto, and the [Toronto Green Community](#) initiative.

While all of these successes have been built on significant grassroots efforts and personal commitment, public comments on the Climate Change Plan suggested that the City of Toronto could be doing a better job at engaging in outreach to the community through neighbourhood committees and residents’ associations. The Community Animators will play a key role in supporting community based initiatives.

#### **(vii) Promoting the Production and Consumption of Locally Grown Food**

Another key element of the Live Green Toronto program will be the promotion of the production and consumption of locally grown food. There were a number of recommendations in the Climate Change Plan, which addressed this topic with a focus on three specific areas:

- Develop a local food procurement policy for the City of Toronto;
- Increase community/allotment gardens and farmers markets; and
- Establish an Enviro-Food Working Group to develop and implement actions to promote local food production and identify ways to remove barriers to the expansion of local markets that sell locally produced food.

The Toronto Environment Office is proposing that a temporary position be established for a period of three years for the express purpose of:

- Working with City staff to develop operating procedures and provide training of City staff engaged in the purchase of food for City operations to ensure implementation of a local food procurement policy; and
- Working with the Enviro-Food Working Group and other community partners to develop and implement actions which promote local food production and consumption.

#### **(viii) Community Partnerships**

As part of the Live Green Toronto program, organizations, businesses and corporations will be invited to become partners in the effort to reduce greenhouse and smog causing emissions. The Toronto Environment Office is working with the Office of Partnerships to develop an approach that will engage these groups in a manner that they can indicate their commitment to protecting and improving the natural environment and contribute towards the delivery of the various elements of the Live Green Toronto program.

#### **(ix) Monitoring & Evaluation of Live Green Toronto Programs**

To assess whether the Live Green Toronto program is achieving its intended purpose of catalyzing community action on climate change, several techniques will be employed:

- Public opinion polling to track awareness and response to various components of the Live Green Toronto program
- Statistical data gathered through the Live Green Toronto website, including number of visits, compliance/commitment to green living tips, carbon calculator tallies, etc.
- Greenhouse gas and criteria air contaminant reductions accrued as a result of Live Green Toronto projects, in compliance with the Toronto Atmospheric Fund's policy on quantifying air emissions impacts
- Direct contact (e.g., telephone inquiries through Toronto Environment Office and the 3-1-1 system)
- Community Animators will track number of community contacts made, meetings attended, community projects initiated and completed, etc.
- Tracking Live Green Toronto outreach at events, including community festivals and workshops.

### 1e. Five Year Funding Request

**Table 2a: Live Green Toronto Operating Budget '000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Social Marketing Campaign	1,000	1,500	1,250	1,000	1,000	<b>5,750</b>
Local Food Campaign Lead	100	100	100	0	0	<b>300</b>
Community Grants	200	200	200	200	200	<b>1,000</b>
<b>GROSS TOTAL</b>	<b>1,300</b>	<b>1,800</b>	<b>1,550</b>	<b>1,200</b>	<b>1,200</b>	<b>7,050</b>
External Funding (projected)	0	0	250	500	500	1,250
Net City Funding	1,300	1,800	1,300	700	700	5,800

**Table 2b: Live Green Toronto Capital Budget '000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Community Projects	500	2,000	2,000	2,000	2,000	<b>8,500</b>
Community Garden Development	250	250	---	---	---	<b>500</b>
Community Animators	500	800	1,000	1,000	1,000	<b>4,300</b>
Live Green Community Festival	250	250	250	250	250	<b>1,250</b>
<b>GROSS TOTAL</b>	<b>1,500</b>	<b>3,300</b>	<b>3,250</b>	<b>3,250</b>	<b>3,250</b>	<b>14,550</b>
External Funding (projected)	0	500	1,000	1,000	1,000	3,500
Net City Funding	1,500	2,800	2,250	2,250	2,250	11,050

Note: Based on the successful fund raising experiences of other cities, such as, New York City, the Toronto Environment Office with the assistance of the Partnerships Office will solicit corporate partnership/sponsorships for the Live Green Toronto program in addition to exploring grants available through a variety of Federal and Provincial and other sources.

## **2. ECO-ROOFS INCENTIVE PROGRAM**

### **2a. Direction of Council**

As part of the Climate Change Plan City Council directed that staff establish an Eco-Roofs Program that sets a minimum target of 10% of the total industrial, commercial and institutional roof space located in Toronto be made more environmentally friendly by 2020 (recommendation 5a) and that staff develop a strategy for funding the development of green roofs (recommendation 15(ii)).

### **2b. Justification**

It is estimated that there are just over 65,000 buildings in the industrial, commercial and institutional sector with a combined roof space area of almost 40 million square metres. This roof space offers a significant opportunity for the installation of a green roof or the use of reflective materials to help address urban heat island and storm water management issues. In addition, this roof space may also offer a significant opportunity for the development and installation of renewable energy systems.

The City has demonstrated the value of green-roofs and has an established green roof incentive program to encourage and facilitate the development of green roofs.

**2c. Objective**

To establish a program that builds upon the Green Roof Incentive program and will work with building owners and operators of large industrial and commercial buildings to encourage them to utilize their roof-space to help address climate change whether that be through the installation of green-roofs, utilization of reflective materials or installation of a renewable energy system.

**2d. Program Description**

Toronto Water currently has in place the Green Roofs Incentive program with annual funding of \$200,000. The incentive is available for the following amounts and property types:

(a) \$20.00 per square metre of green roof installed, be paid to eligible single-family residential property owners, to a maximum of \$10,000; and

(b) \$50.00 per square metre of green roof installed be paid to eligible industrial, commercial and multi-family residential property owners, to a maximum of \$100,000.

It is proposed that this incentive program be built upon and a larger fund be established to provide incentives to industrial and commercial building operators. The specifics of who will be eligible, what financial incentives will be provided, and how the fund will be administered will be developed and presented to City Council prior to July 2008 with the intention to pilot potential approaches in the second half of 2008.

**2e. Five Year Funding Request**

**Table 3: Eco-Roofs Program Capital Budget ‘000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Incentive Program	200	800	800	400	200	<b>2,400</b>
<b>GROSS TOTAL</b>	<b>200</b>	<b>800</b>	<b>800</b>	<b>400</b>	<b>200</b>	<b>2,400</b>
External Funding	0	0	0	0	0	0
Net City Funding	200	800	800	400	200	2,400

Note: utilization of these funds will be coordinated with the existing \$200,000 green roof incentive program currently administered by Toronto Water.

### **3. TRANSPORTATION DEMAND MANAGEMENT PROGRAM**

#### **3a. Direction of Council**

As part of the Action Plan City Council directed that staff continue to ‘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’ (recommendation 9g).

At its October 2007 meeting City Council directed, as part of the Sustainable Transportation Initiatives: Short Term Actions report, that staff ‘negotiate with the Greater Toronto Transportation Authority and other municipalities within the region to jointly fund and support continuing transportation demand management initiatives’.

#### **3b. Justification**

The Smart Commute Initiative was a three-year, \$6.8 million project to implement workplace-based transportation demand management strategies across the GTA and Hamilton. This effort has resulted in an estimated avoidance of over 17,000 tonnes in greenhouse gas emissions and over 1 million single occupant trips. The City of Toronto has provided funding of over \$400,000 over that last three years to this initiative and maintained, on a temporary basis one position to support the program and manage the program for City employees. Currently there are three TDM initiatives in Toronto: regional projects in Northwest Toronto/Vaughan and Toronto East and an employee trip reduction program for City employees.

City Staff who sit on the Smart Commute Initiative’s Steering Committee have been negotiating with the Greater Toronto Transportation Authority (GTTA) to develop an approach for continuing the Smart Commute Initiative. The GTTA is currently considering a proposal to provide annual funding of \$130,000 to help Toronto maintain its transportation demand management initiatives, as long as the City provides equivalent funding.

Funding of \$150,000 a year for five years, is requested to maintain and enhance the TDM initiatives occurring in Toronto.

#### **3c. Objective**

To reduce the use of single occupant vehicles and to encourage the use of sustainable modes of transportation in the City of Toronto.

#### **3d. Program Components**

The City of Toronto is demonstrating its leadership in transportation demand management (TDM) by investing in three separate TDM initiatives:

##### **(i) City of Toronto Smart Commute**

An employee trip reduction program geared towards City of Toronto staff. This program was successfully piloted at North York Civic Centre and is ready to be expanded to all City employees. Continuation and expansion of the program requires the establishment

of one temporary position in the Toronto Environment Office for the next five years to work with City staff on the development of new operating procedures, investigate existing practices around usage of City vehicles and personal vehicles for City business, deliver education and promotion campaigns and continue to liaise with the Smart Commute Initiative for the GTA/Hamilton.

**(ii) Smart Commute North Toronto / Vaughan**

The City of Toronto is a founding partner of this program and has been supporting the organization since its inception in 2001. Through this program York University, as one of the participating employers, estimates that it has seen a reduction of [xx] single occupant trips.

**(iii) Smart Commute Northeast Toronto**

This effort is centred on the Consumers Road employment area near Highway 401 and the 404/Don Valley Parkway. The initiative is being managed by the Smart Commute North Toronto/Vaughan organization.

In addition, to these existing TDM initiatives, there is a growing demand for similar services in other areas of the city. Maintaining and enhancing support for the TDM initiative will help fill that service gap.

**3e. Five Year Funding Request**

**Table 4: TDM Operating Budget ‘000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Smart Commute Coordinator	100	100	100	100	100	<b>500</b>
Funding for Smart Commute Programs	180	180	180	180	180	<b>900</b>
<b>GROSS TOTAL</b>	<b>280</b>	<b>280</b>	<b>280</b>	<b>280</b>	<b>280</b>	<b>1,400</b>
External Funding	130	130	130	130	130	650
Net City Funding	150	150	150	150	150	750

Note: the GTTA has tentatively committed to funding of \$130,000 a year towards the Transportation Demand Management programs occurring in Toronto.

## **4. CLIMATE CHANGE ADAPTATION**

### **4a. Direction of Council**

As part of the Climate Change Plan City Council directed that staff establish a process that engages all relevant City ABCC&Ds and community partners to develop a climate change adaptation strategy (recommendation 13a).

### **4b. Justification**

There has been a significant increase in weather-related disasters across the world. The majority of scientists believe is related to global warming and Toronto has seen its share of weather related changes. In August 2005 almost 12 centimetres of rain fell in one hour and this storm flooded hundreds of basements, washed out a portion of Finch Avenue and was identified by the insurance industry as the single most expensive natural disaster in Ontario's history (approximately \$0.5 billion in claims).

Extreme weather and events place a large financial burden on municipalities due to damage to infrastructure. It also places a significant strain on the City's more vulnerable populations who for various reasons are not suited to handle extreme weather events.

### **4c. Objective**

To put in place ongoing mechanisms for continually evaluating changing weather patterns, the potential effects on the City and a strategy to adapt to and mitigate the effects of climate change.

### **4d. Program Components**

There are two elements to the Climate Change Adaptation work: development and implementation of strategies to address forecast changes in weather patterns and putting in place the capacity to monitor and predict what those changing weather patterns might be for Toronto. Funding is also requested in 2008 to pilot the development of a Climate Change Action Kit for Residents, which would include information about City's climate change goals and objectives, mitigation programs, links to websites and information on how to prepare for short term utility and service disruptions, which may increasingly occur, as a result of changing weather patterns.



#### 4e. Five Year Funding Request

**Table 5a: Climate Change Adaptation Operating Budget '000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Climate Change Action Kit for Residents	75	0	0	0	0	<b>75</b>
Membership	10	10	10	10	10	<b>50</b>
<b>TOTAL</b>	<b>85</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>125</b>
External Funding	0	0	0	0	0	0
Net City Funding	60	60	60	35	35	250

**Table 5b: Climate Change Adaptation Capital Budget '000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
Strategy Development Consulting Expertise	100	100	75	75	75	<b>-425</b>
Research & Modelling (consultant/ data acquisition)	250	405	750	440	380	<b>2,225</b>
<b>TOTAL</b>	<b>350</b>	<b>505</b>	<b>825</b>	<b>515</b>	<b>455</b>	<b>-2,650</b>
External Funding	0	0	0	0	0	0
Net City Funding	350	505	825	515	455	2,600

Note: an application has been submitted to FCM requesting funding of \$350,000 for 2008/09 for the Climate Change Adaptation research and modelling.

## 5. PHASE OUT OF TWO STROKE ENGINES

### 5a. Direction of Council

As part of the Climate Change Plan, City Council directed that staff undertake two actions:

- Develop a proposal to phase out by the end of 2009 the use of equipment powered by two stroke engines in City operations (recommendation 9i); and
- Develop a plan to potentially ban by 2010 the use of two stroke engines in powering home and garden equipment (recommendations 4j and 4k).

### **5b. Justification**

During the community engagements leading to the development of the Climate Change Plan, there were a number of comments made expressing a desire for the City to consider a ban on the use of gas powered home and garden equipment. According to the Clean Air Foundation it is estimated that a standard gas mower can emit the same amount of common air pollutants in one hour as driving a new car for over 550 kilometres and that Statistics Canada has estimated that gas-powered lawn equipment releases about 80,000 tonnes of emissions in Canada every year, using 151 million litres of gas.

While there is an obvious environmental impact associated with the use of gas powered home and garden equipment, the technology is changing and representatives of the industry claim significant improvements have been made in controlling emissions. There is a need for resources and expertise to assist City staff in investigating alternatives and developing an approach that addresses the directions of City Council.

### **5c. Objective**

To prepare by mid-2008 an action plan that addresses City Council's direction to investigate a phase out of the use of two stroke engines in City operations and potentially ban -- including the option of phasing out -- the use of two stroke engines in powering home and garden equipment.

### **5d. Program Components**

The Toronto Environment Office will engage a consultant to work with an already established internal staff working group to identify for City operations the existing usage of two stroke engines, alternatives available and prepare an action plan, including capital costs, geared to their phase out by the end of 2009. The same or another consultant will also be engaged by the Toronto Environment Office to work with staff from the MLS division and Toronto Public Health to investigate the feasibility and the environmental and public health value of banning the use of two stroke engines across Toronto.

### **5e. Five Year Funding Request**

Funding of up to \$100,000 is requested for 2008 to engage a consultant and support this work. Future year funding needs will be determined as part of this project.

## **6. INVESTIGATE EXPANSION OF DEEP LAKE WATER COOLING SYSTEMS**

### **6a. Direction of Council**

As part of the Climate Change Plan, City Council directed that staff establish a committee to prepare a report that outlines the technical, financial and service delivery

options for expanding by at least 20% the capacity of the existing deep lake water cooling systems in the short term and for at least doubling in the long term deep lake water cooling systems in Toronto (recommendation 7f).

#### **6b. Justification**

The development and implementation of the deep lake water cooling system by the City of Toronto through the Enwave Corporation is one of the major successes of the City in the effort to reduce greenhouse gas emissions associated with the cooling of buildings. With the commitment to hook-up City Hall, Union Station and the Toronto Police Headquarters, scheduled for 2009, the existing system has reached its capacity. Opportunities may exist to expand the existing system and there may also be opportunities to develop other deep lake water cooling systems for other parts of the city. These opportunities need to be investigated and identified so that the City can take advantage of them.

As part of the Climate Change Plan, a request was made to allocate \$75,000 from the Toronto Environment Office to hire a consultant to assist in investigating these opportunities. Due to cost containment these monies were frozen and consequently the project has been delayed.

#### **6c. Objective**

To prepare by mid 2008 a study that identifies the opportunities for expanding the use of deep lake water cooling and associated financial costs.

#### **6d. Program Components**

The Toronto Environment Office will engage a consultant to work with staff to assist in the identification of opportunities to expand the existing deep lake water cooling system and other opportunities to deliver deep lake water cooling systems.

#### **6e. Five Year Funding Request**

Funding of up to \$100,000 is requested for 2008 to engage a consultant and support this work. Future year funding needs will be determined as part of this project.

### **7. AIR QUALITY AND GREENHOUSE GAS EMISSIONS MONITORING AND MODELLING**

#### **7a. Direction of Council**

As part of the Climate Change Plan, City Council directed that staff continue ‘to coordinate the City’s actions 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’ and ‘to report on the outcomes of policies, programs and activities in connection with the Action Plan and recommend changes and new actions’ (recommendations 14a and 14f).

#### **7b. Justification**

In July 2007, the City released a comprehensive inventory based on 2004 data of both greenhouse gas and criteria air contaminant emissions for both City operations and the community at large (<http://www.toronto.ca/teo/greenhouse-emissions.htm>). This effort provided valuable information to help inform the development of the Climate Change Plan.

There is a need for ongoing monitoring and modeling of air quality and greenhouse gas emissions to ensure efforts are being focused on sources with the greatest impact and that the policies and programs being implemented are achieving the desired reduction in emissions.

### **7c. Objective**

To ensure the City has the capacity for ongoing monitoring and modelling of air quality and greenhouse gas emissions for ongoing priority setting and evaluation of implementation of policies and programs.

### **7d. Program Components**

There are two key elements to the modelling and monitoring program:

#### **(i) The Greenhouse gas and air quality emissions reporting.**

Building upon the work released in 2007, this effort will allow the City to determine whether the community is achieving the targets of the Climate Change Plan and where more focused effort is required. Funding is required for ongoing data and software purchases and to retain external expertise to assist in the interpretation. A formal report will be produced 2008, 2010 and 2012.

#### **(ii) Air Quality Monitoring & Modelling**

The Toronto Environment Office has been requested to conduct air quality assessments at the neighbourhood level. Current monitoring by the Province does not allow for detailed assessment of what might be site specific air quality issues. The program through the purchase of a mobile gas analyzer will provide the capability to assess air quality at the street level. In addition this program will continue to support the street level monitoring of the Clean Roads to Clean Air program through the purchase of dusttracks. Funding is also required for consulting assistance, data acquisition and the purchase of special computers to run the models.

## 7e. Five Year Funding Request

**Table 6a: Monitoring and Modelling Operating Budget '000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
GHG & AQ Emissions Report (software & data purchases)	75	14	62	14	62	<b>227</b>
AQ Modelling & Monitoring (students)	20	20	20	20	20	<b>100</b>
<b>TOTAL</b>	<b>95</b>	<b>34</b>	<b>82</b>	<b>34</b>	<b>82</b>	<b>327</b>
External Funding	0	0	0	0	0	0
Net City Funding	95	34	82	34	82	327

**Table 6b: Monitoring and Modelling Capital Budget '000s**

<b>Program Component</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>Total</b>
GHG & AQ Emissions Report (consulting services)	20	20	20	20	20	<b>100</b>
AQ Modelling & Monitoring (consulting services)	250	250	90	90	90	<b>770</b>
Mobile Gas Analyser	250	0	0	0	0	<b>250</b>
Dustracks	20	0	0	0	0	<b>20</b>
Computer Work Stations	20	0	0	20	0	<b>40</b>
<b>TOTAL</b>	<b>560</b>	<b>270</b>	<b>110</b>	<b>130</b>	<b>110</b>	<b>1,150</b>
External Funding	0	0	0	0	0	0
Net City Funding	560	270	110	130	110	1,150

## CONCLUSION

As part of the Climate Change Plan, City Council directed that staff report in 2007 on the funding requirements for components of the Plan where no funding sources were identified. This report outlines the seven key program areas from the Climate Change Plan where funding is required and is not captured in prior approvals or in the budgets of any City division or Agency, Board or Commission. These being:

- Live Green Toronto;
- The Eco-Roofs Program;
- Transportation Demand Management;
- Climate Change Adaptation;
- Phasing out Two Stroke Engines;
- Identification of Opportunities to Expand Deep Lake Water Cooling; and
- Air Quality and Greenhouse Gas Emission Monitoring and Modelling.

This report outlines a funding request totalling \$29.872 million for the 2008-2012 time period of which it is projected at least \$5.85 million will come from external sources, such as corporate sponsorships/partnerships for the Live Green Toronto initiative and grants from Federal and Provincial sources. Funding can be provided from the City's Sustainable Infrastructure Reserve.

## CONTACTS

Lawson Oates, Director Toronto Environment Office, 416.392.9744, [loates@toronto.ca](mailto:loates@toronto.ca)

Josie Lavita, Director, Financial Planning, 416-397-4229, [jlavita@toronto.ca](mailto:jlavita@toronto.ca)

Mark Bekkering, Acting Manager Environmental Planning and Support, Toronto Environment Office, 416.392.8556, [mbekker@toronto.ca](mailto:mbekker@toronto.ca)

## SIGNATURES

---

Richard Butts  
Deputy City Manager

---

Joseph P. Pennachetti  
Deputy City Manager and  
Chief Financial Officer