



## STAFF REPORT ACTION REQUIRED

### Carbon Credit Policy and Revenue Opportunities

<b>Date:</b>	June 6, 2011
<b>To:</b>	Executive Committee
<b>From:</b>	Gary Welsh, Acting Deputy City Manager, Cluster B
<b>Wards:</b>	All
<b>Reference Number:</b>	P:\2011\Cluster B\TEO\EX11002

#### SUMMARY

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This report presents an opportunity to receive revenues from carbon credits generated through energy efficiency and conservation projects of the City of Toronto (the "City"). To support this effort authority from Toronto City Council is recommended to update the corporate greenhouse gas ("GHG") and related carbon credit policy to better position the City for any future regulatory compliance obligations and possible revenue opportunities from monetizing GHG reductions and related GHG emissions trading.

The City has undertaken various projects that have contributed to GHG emissions reductions and, therefore, may be eligible for GHG emission offsets or credits. A GHG emission offset or credit ("carbon credit") consists of all rights and benefits associated with one tonne of GHG emissions reductions. If monetized, sold, or traded these carbon credits may result in an additional revenue source for the City.

This report also seeks authority for the Toronto Environment Office to take the necessary steps to quantify and prepare the City's portfolio of carbon credits and other environmental attributes for potential monetization or sale. The prevalent market in Ontario for carbon credits is a voluntary market and 'green funds' which offers potential opportunities for the City to engage and execute sales with prospective buyers. Any sale of carbon credits or other environmental attributes must take into account established emissions reductions targets so as to qualify as "additional" and ensure that the City's overall environmental goals are met.

This report recommends that any proceeds from the sale of carbon credits or other environmental attributes be allocated to a reserve fund to support future City

corporate capital environmental initiatives. Therefore it is proposed that any sale of carbon credits or other environmental attributes be required to yield a net benefit to the City of Toronto.

## **RECOMMENDATIONS**

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The Acting Deputy City Manager, Cluster B, recommends that:

1. City Council rescind the Carbon Credit Policies adopted in 1999 and 2005.
2. City Council adopt the Carbon Credit Policy attached as Appendix A to this report.
3. Subject to adoption of Recommendation 2:
  - a. the City Manager be authorized to amend the relationship frameworks with all City Agencies to include a direction that the Carbon Credit Policy applies to their operations; and
  - b. the City Manager be directed to prepare shareholder directions for City Corporations requiring that they develop and adopt Carbon Credit Policies consistent with the policy adopted by City Council.
4. City Council authorize the Deputy City Manager, Cluster B and Deputy City Manager and Chief Financial Officer to:
  - a. determine and implement an appropriate method of transferring carbon credits and other environmental attributes in accordance with the policy in Appendix A; and
  - b. negotiate and enter into agreements for the monetization, retirement, transfer, sale of, or related dealings (i.e. realizing the value from), up to 100,000 tonnes of CO<sub>2</sub> equivalents, per year, of City-owned carbon credits and other environmental attributes, on terms and conditions customary in the carbon market and satisfactory to the Director, Toronto Environment Office, and in a form satisfactory to the City Solicitor.
5. The Deputy City Manager and Chief Financial Officer be directed to establish an interest bearing reserve fund to accept any proceeds realized from commercial transactions involving carbon credits and other environmental attributes for current or future City corporate capital environmental initiatives.
6. The Director, Toronto Environment Office continue to monitor and participate in the shaping of provincial, federal, regional and international regulatory and

carbon market developments and report to Parks and Environment Committee, when appropriate, on any implications for the City of Toronto.

7. The Director, Toronto Environment Office, report to Parks and Environment Committee at least once every two years on the City's efforts to quantify, verify and realize value from carbon credits and other environmental attributes.

## **Financial Impact**

The proposed policy would authorize City staff to engage in commercial activities to realize value from carbon credits and other environmental attributes, when certain conditions are met. For a variety of reasons outlined in this report, it is difficult to estimate the potential value of commercial activities dealing in carbon credits. Whatever the potential revenue, the proposed policy recommends that any proceeds be allocated to fund current or future City corporate capital environmental initiatives as approved by City Council as part of the annual budget process, and that these proceeds be deposited in an interest bearing reserve fund established for that purpose.

Any initial costs for documenting and negotiating commercial activities to realize value from carbon credits or environmental attributes can be accommodated within the existing 2011 budget for the Toronto Environment Office. Any incremental costs that may arise in preparing credits for sale (i.e. third-party verification, broker fees) would be recovered on or around execution of any such commercial transaction.

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

## **DECISION HISTORY**

In response to the adoption of the Kyoto Protocol and awareness of the federal government's Voluntary Challenge Registry and industry's Pilot Emissions Reduction Trading Project (PERT), City Council in 1999 adopted a policy to allow the trading of greenhouse gas emissions so long as the activity did not compromise the City's goal of improving the local environment, particularly air quality, and the trading partner had a voluntary cap on greenhouse gas emissions in the absence of a regulatory cap.

In response to a recommendation from the City's Roundtable on the Environment, City Council in 2005 adopted a carbon credit policy that:

- allowed the City of Toronto to sell offset credits only to the Government of Canada's then proposed but never implemented, Climate Fund on the condition that the offset credits be retired by the Federal Government;
- required the City to take immediate steps to ensure that new contracts with suppliers secure the City's ownership of carbon offset credits; and

- ensured that any funds raised through the sale of offset credits be directed to supplementing funding for environmental initiatives, such as transit.

A copy of the report and decision of City Council in 2005 can be found at:

<http://www.toronto.ca/legdocs/2005/agendas/council/cc050928/pof8rpt/c1027.pdf>

## ISSUE BACKGROUND

City policies regarding carbon credits from 1999 and 2005 are outdated. The federal Climate Fund and related offset program, through which the City intended to sell carbon credits, was not implemented, thereby making the provision of the 2005 policy requiring sale of the carbon credits to only the federal government largely ineffective.

City Council adopted the *Climate Change, Clean Air and Sustainable Energy Action Plan* (2007) and, in doing so, established GHG emissions reduction targets for the Toronto urban area. Any action taken by the City regarding realizing the value from carbon credits should be consistent with Council's commitment to reduce overall GHG emissions.

Additionally, new markets are emerging for energy conservation, renewable power generation and water conservation. The *Power to Live Green: Toronto's Sustainable Energy Strategy* (2009) sets conservation and renewable energy targets for the City to help achieve the aforementioned GHG reduction targets. The City's current policies do not encompass a broader definition for the environmental attributes that these types of initiatives may yield. Thus, a new policy should have an expanded scope to include realizing the value from the full range of positive environmental attributes inherent in City projects and programs.

In 2009, the Ontario Ministry of Environment (MOE) indicated plans to eventually introduce measures to cap emissions of carbon dioxide, methane, and other greenhouse gases from certain facilities and create a GHG trading program to facilitate lower overall costs of compliance with the cap. The Western Climate Initiative, a partnership of several U.S. states and Canadian provinces (including Ontario) that has spent the past several years developing a regional cap-and-trade system in the absence of federal programs, released a detailed program design document for its members to use in developing their local GHG regulations. Queens Park has already amended the Environmental Protection Act to facilitate the promulgation of GHG Reporting Regulations and authorize the MOE to enact cap-and-trade regulations. This cap-and-trade program may very well impose new compliance obligations on various municipal industrial processes and municipal operations. Existing City policies do not account for the implications that may arise from such a program.

In Spring 2009, the City Manager tasked the Toronto Environment Office (TEO) with

establishing and leading a working group across the City corporation to deal with carbon credits. The Carbon Credit Working Group was created and asked, among other things, to assess the need to update the existing City's Carbon Credit policies.

In light of all these developments, the TEO recommends that the City's corporate policies relating to carbon credits be amended to better position the City to comply with future regulatory requirements and realize value and potential revenue generation opportunities from GHG emission reductions and related environmental attributes.

## COMMENTS

To aid your review of this report and the attached policy proposal, please note the following definitions:

*Cap-and-Trade* is a market-based system for managing greenhouse gas emissions in which the government imposes a cap, or limit, on the quantity of emissions emitted from defined facilities and creates the ability to trade emission permits or quota in order to foster compliance.

*Carbon Credits* or *carbon offset credits* or *offset credits* refers to quantified and verified reductions of GHG emissions from a given facility, operation or project that is additional to any existing voluntary or regulatory requirement, where such GHG reductions have been verified by an independent third party verifier, and may be serialized and listed through a GHG registry. Usually, one carbon credit represents all rights and benefits associated with one tonne of GHG emissions reductions. Carbon credits generally can be banked, retired or transacted.

*Banking a carbon credit* generally refers to holding a carbon credit or other environmental attribute in the context of a regulated trading system for future compliance use, perhaps in anticipation of using it to comply with future regulatory requirements.

*Retiring a carbon credit* refers to permanently taking a carbon credit out of use and rendering it (and the underlying GHG reductions) or other environmental attribute of no further force and effect, thereby removing it from any and all voluntary or regulatory systems.

*Transacting a carbon credit* refers to encumbering, claiming, or otherwise transferring legal and/or beneficial ownership of a carbon credit or other environmental attribute in consideration for value.

*Environmental Attributes* refers to a broad range of rights and benefits associated with GHG emission reduction, renewable electricity and energy efficiency activities including, but not limited to the environmental rights and benefits that may take the form of carbon

credits, renewable energy certificates, green tags, white tags, labelled/certified "green" power, megawatts, water conservation credits, and related attributes.

*Greenhouse gas emissions (GHG emissions)* refers to the dissemination in the air of gases – including carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons, perfluorocarbons, and nitrogen trifluoride and related gases or any other contaminant prescribed as a greenhouse gas by government regulation or international treaty - that contribute to the warming of the earth's atmosphere known as the greenhouse effect.

*Western Climate Initiative (WCI)* is a partnership of seven U.S. states and four Canadian provinces (including Ontario) working together to implement a regional cap-and-trade program in the absence of national programs in Canada and the U.S.

a. Recent Carbon Developments in Ontario

Many jurisdictions around the world have instituted, or are in the process of developing, regulated carbon markets to manage and reduce GHG emissions in a cost-effective and environmentally sustainable manner.

Since there is no federal program in place within Canada, provinces including Ontario, are working alongside other willing provinces and U.S. states to create a regional platform. The Government of Ontario has committed to aligning its efforts with those of the Western Climate Initiative (WCI) in designing its cap-and-trade program.

The Government of Ontario has introduced the framework for a cap-and-trade program by enacting two pieces of legislation:

- Bill 185, *The Environmental Protection Amendment Act (Greenhouse Gas Emissions Trading)*, enacted as Chapter 27 of the Statutes of Ontario, 2009;
- *Ontario Regulation 452/09* – a new GHG emissions reporting rule.

The impacts of proposed Ontario cap-and-trade regulations on the City of Toronto are still uncertain at this time, particularly as they relate to municipal operations and GHG emissions obligations and opportunities. The City will need to continue to monitor these developments and dialogue with the relevant Provincial ministries and report back to City Council.

In February 2011, upon direction from the Ontario Minister of Energy, the Ontario Power Authority (OPA) was directed to develop a program to sell a limited number of environmental attributes secured through electricity generation procurement contracts if there is a net benefit to electricity rate payers. The Minister's direction states that any sales must ultimately result in the retirement of credits within Ontario and cannot be sold to offset emissions in a compliance market. City staff will monitor, assess and analyze any resulting activity of the OPA to better understand the implications and opportunity for the City.

b. Greenhouse Gas Emissions Reporting

From a reporting standpoint, the City of Toronto is well positioned to comply with future regulations arising from enhanced anticipated GHG reporting requirements and to track, quantify and assess its various emissions reduction projects.

TEO maintains an inventory of combined GHG and air quality emissions for both the corporation and community. Toronto's overarching goal is to reduce GHG emissions for the Toronto urban area to 80% of 1990 levels by 2050. This inventory helps measure the City's progress and identify priorities and strategies to meet its target.

Additionally, TEO has been actively collecting and tracking green initiatives across City Agencies, Boards, Commissions, Corporations and Divisions (ABCCD) as part of its Environmental Initiatives Reporting. The information collected is compiled and consolidated into a report so that a standardized system is in place to collect, track and quantify corporate GHG emissions reductions. Many of these initiatives, while focused on achieving environmental benefits, such as improved water quality and increased waste diversion, also help reduce carbon emissions. Standard methodologies have been established by various sources for quantifying the greenhouse gas emissions reductions associated with these and all activities of the City.

The TEO has also been communicating with various City divisions about the new Provincial Greenhouse Gas Reporting Rule and implications it may have for City operations, particularly those from general stationary combustion activities. Although the City already reports some of its emissions pursuant to a federal program, the new reporting rule broadens the scope and deepens the scrutiny related to such reporting. This rule could form the basis for reporting under the proposed future cap-and-trade program.

The methodology for tracking and quantifying the City's various projects is an integral step in determining the eligibility of emissions reduction projects to qualify as carbon credits. Continuing to track this information is also essential for future cap-and-trade compliance although it is still uncertain what City facilities, if any, would be affected. At this time there are no mandatory cap-and-trade requirements applicable to the City and its operations.

c. Eligibility Criteria for Carbon Credits

Preliminary work undertaken by City staff suggests that the City has many high-quality carbon credits in its possession. The quality of a carbon credit is a function of several variables including: clear and unique legal ownership, and evidence to support the real, quantifiable, additional, surplus, verifiable, permanent nature of the GHG reductions and associated carbon credits. The City's Carbon Credit Working Group has developed an eligibility matrix to aid in the assessment of City projects and whether or not they may qualify for carbon credits or other environmental attributes. Applying that matrix to City

projects indicates that not all greenhouse gas reductions from City projects are necessarily eligible for carbon credits or other environmental attributes.

Also, there may be projects and other commercial arrangements where parties negotiating with the City have a greater interest in obtaining any associated or resulting carbon credits. In these cases, City staff should be prepared to negotiate a reasonable commercial benefit in return for giving up any such carbon credits.

Based on a sample selection of green initiatives reported by City ABCCDs in 2007 alone, conservative estimates suggest that at least 20,000 tonnes of CO<sub>2</sub>equivalents (CO<sub>2</sub>e) could be pre-qualified as legitimate carbon credits (20,000 carbon credits). There are a considerable number of additional emissions reduction projects and commercial and procurement arrangements that need to be assessed on a case-by-case basis in order to fully understand the scope of the City's portfolio of environmental attributes. Moreover, City operations may also be eligible for early reduction allowances under the proposed Ontario/WCI cap-and-trade programs. Tracking this information is essential for future compliance and benefits under such programs.

Thus, further study by City staff is required to get a more comprehensive understanding of eligible City projects that are of a high-quality and marketability and are worth verifying from a cost-benefit standpoint. Afterwards the credits may be monetized or otherwise result in realized value for the City.

d. City of Toronto's Environmental Attributes Potential

The City's broader portfolio of environmental attributes spans a variety of project types including:

- Energy efficiency retrofits at City-owned facilities
- Landfill gas collection, combustion and electricity generation
- Renewable energy (i.e. photovoltaic installations, tri-generation projects)
- Deep Lake Water Cooling
- Switching to lower-carbon fuels
- Major tree plantings
- Grant funding (i.e. Better Building Partnership)

Appendix B provides an overview of the projects that have been pre-screened by City staff for their eligibility only as carbon credits (and not more broadly as environmental attributes). This list is neither an exhaustive list nor verified by a third party. These are solely the projects that the City believes are or may be eligible for carbon offset credits, or similar credits, at this time.

Recent Provincial initiatives like the Green Energy and Green Economy Act (2009) and the Water Opportunities and Conservation Act (2010) may eventually give rise to additional marketable environmental attributes and products that result from the City



taking steps to conserve energy and water to comply with these initiatives. Such attributes also should be quantified and realized in parallel with the GHG reductions.

The City's renewable energy and energy efficiency projects are likely to offer high quality environmental attributes because these project types result in a measurable and irreversible climate benefit, are often the result of community projects, and also prevent or reduce the burning of fossil fuels for electricity generation.

e. Voluntary Market and Green Fund Opportunities

Given the uncertainty in provincial and federal GHG policies and associated cap-and-trade programs, the potential value of City-owned carbon credits and other environmental attributes is unclear at this time. The lack of a regulated marketplace and standardized terms and conditions makes it difficult to estimate a per unit price for a carbon credit.

Nonetheless, there is a reasonably active voluntary GHG market in Ontario that enables the trading of carbon credits and environmental attributes to individuals and businesses that voluntarily choose to reduce their carbon footprint. Buyers in a voluntary GHG market are often driven by "green" product differentiation goals and corporate objectives related to GHG emissions reductions. Other entities may purchase carbon credits and environmental attributes to fulfill corporate social responsibility mandates or for reputational reasons, such as showing corporate leadership in combating climate change.

City-owned carbon credits and environmental attributes are desirable and considered to have high-value, given the community benefits that are inherent in emissions reduction projects undertaken by the City. Similarly, City carbon credits and environmental attributes may have particular social value, which is another factor that directly influences price in the voluntary market. If the City were to transact its carbon credits and environmental attributes on the voluntary market, certain sensitivities surrounding the City selling its carbon credits to allow for industrial emitters to pollute may be mitigated because industrial emitters do not routinely purchase voluntary carbon credits and environmental attributes in a yet to be regulated market for compliance purposes.

The Greening Canada Fund is a voluntary carbon emissions reduction fund aimed exclusively at the voluntary objectives of large Canadian corporations. The Fund purchases carbon credits and other environmental attributes from green projects across Canada on behalf of the fund's investors. TD Canada Trust and Bank of Montreal are the fund's primary investors, having already committed \$13 million as they strive to become carbon neutral corporations.

The Greening Canada Fund has invested in various public projects on behalf of its clients. For example, \$1.7 million was paid to the Toronto District School Board for energy retrofits across its building portfolio. The Fund also invested over \$1 million in the expansion of a landfill gas collection and utilization project owned by the City of Guelph. The unit price that these credits sold for was not disclosed for confidentiality reasons.

Other similar climate and environmental attribute related funds are active domestically, throughout North America and overseas.

Once the City determines its portfolio of carbon credits and other environmental attributes, the next step would be to initiate a competitive process to explore what value could be realized from its inventory and then consider how best to realize value from such products in accordance with the Carbon Credit Policy (attached as Appendix A).

The proceeds received from the sale of carbon credits or other environmental attributes should be dedicated to an interest-bearing reserve fund to supplement current and future City corporate capital environmental initiatives. City carbon credits may be perceived to be of a higher-value if a prospective purchaser knows the proceeds of sale will be used to fund further community-based projects versus some other purpose (i.e. general revenues).

f. Stakeholder Consultation

On May 3, 2011, the Toronto Environment Office hosted a half-day policy workshop to consult the opinions of the non-profit, academic and business sectors regarding a Carbon Credit Policy for the City of Toronto.

A copy of the Carbon Credit Policy Review – Workshop Report can be found at:  
[http://www.toronto.ca/environment/air\\_carbon.htm](http://www.toronto.ca/environment/air_carbon.htm)

Consultation highlights include:

- Consensus that the City's Carbon Credit Policy should encompass a broad definition so as to include all existing, emerging and future carbon credits and environmental attributes.
- Acceptance that the monetization of City-owned credits, on certain conditions, is justified.
- Any limitations placed on the sale or retirement of environmental attributes (i.e. geographic, non-industrial buyers) would likely result in a lower market price.
- Importance of re-investing the proceeds from sale to fund new/enhanced environmental projects.

The proposed new policy, attached in Appendix A, includes the following components to address the above-stated issues:

- A requirement that the City take all reasonable steps to safeguard the City's ownership of carbon credits and environmental attributes, and clarify that in order for the City to give up environmental attributes in any contract or other arrangement, the City requires compensation of some kind (e.g. higher royalty rate or lease rate, etc.).
- Expanded policy definitions to cover not only carbon credits based on greenhouse gas reductions but also to include renewable energy credits, energy conservation credits, water conservation credits, and similar assets. The term 'environmental attributes' is used to encompass these various components.
- Realizing value from environmental attributes shall not compromise the City's ability to meet its GHG and renewable energy targets.
- Environmental attributes may be preferentially sold to organizations generating emissions from their operations in Canada with the majority of emissions coming from sources within the City of Toronto or Ontario, in order to encourage or facilitate the reductions to be counted toward achieving the Province's greenhouse gas targets.
- In a corporate effort to prepare for potential emission reduction requirements enacted by any anticipated regulatory program or in anticipation of the price for carbon credits increasing in the future, a portion of carbon credits and other environmental attributes may be banked for future use.
- The proceeds of any sale be directed to a dedicated interest bearing reserve fund to support future City corporate capital environmental initiatives versus some alternative purpose (i.e. general revenues). Doing so will increase the desirability for City credits from a buyer's perspective.

Adoption of this policy will strategically position the City for future regulatory changes

and allow it to take advantage of opportunities to realize value and potentially generate additional funds for City corporate capital environmental initiatives.

## **CONTACTS**

Lawson Oates  
Director, Toronto Environment Office  
Tel: 416-392-9744  
Fax: 416-338-0808  
Email: [loates@toronto.ca](mailto:loates@toronto.ca)

Grace Patterson  
Solicitor, Legal Services  
Tel: 416-392-8368  
Fax: 416-397-5624  
Email: [gpatter@toronto.ca](mailto:gpatter@toronto.ca)

## **SIGNATURE**

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Gary Welsh  
Acting Deputy City Manager  
Cluster B

## **ATTACHMENTS**

Appendix A – City of Toronto Carbon Credit Policy  
Appendix B – Public Notice: City of Toronto's Carbon Credits  
Appendix C – Carbon Credit Working Group Members

## Appendix A – City of Toronto Carbon Credit Policy

### BACKGROUND

Toronto City Council adopted a policy in 1999 to, among other things, allow the trading of greenhouse gas emissions so long as the activity did not compromise the City’s goal of improving the local environment, particularly air quality, and the trading partner had a voluntary cap on greenhouse gas emissions in the absence of a regulatory cap.

Toronto City Council adopted a policy in 2005 to update the 1999 policy to, among other things, (i) allow the City of Toronto to sell offset credits only to the then announced, but never implemented, Government of Canada Climate Fund on the condition that the offset credits be retired by the Federal Government; (ii) require the City to take immediate steps to ensure that new contracts with suppliers secure the City’s ownership of carbon offset credits; and (iii) ensure that any funds raised through the sale of offset credits were directed to supplementing funding for environmental initiatives such as transit.

Various developments in climate change mitigation, cap-and-trade, and the carbon markets since 2005<sup>1</sup> made it necessary to proceed with a more comprehensive effort to assess ownership of greenhouse gas reductions, eligibility of such reductions for carbon credits, and the relevancy of the City’s existing carbon credit policies.

The City Manager tasked the Toronto Environment Office in 2009 to establish and lead a Carbon Credit Working Group with representatives from appropriate City of Toronto Agencies, Board, Commissions, Corporations and Divisions (“ABCCDs”) to explore these issues.

### POLICY

1. The terms set out below have the following meanings:

*Cap-and Trade* is a market-based system for managing greenhouse gas emissions in which the government imposes a cap, or limit, on the quantity of emissions emitted from defined facilities and creates the ability to trade emission permits or quota in order to foster compliance.

*Carbon Credits* or *carbon offset credits* or *offset credits* or *offsets* refers to quantified and verified reductions of GHG emissions from a given facility, operation or project that is additional to any existing voluntary or regulatory requirement, where such GHG

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<sup>1</sup> Such developments include, but are not limited to, the formal termination of the Government of Canada Climate Fund, City Council adoption of the *Climate Change, Clean Air and Sustainable Energy Action Plan* (2007) that established greenhouse gas emissions reduction targets for the Toronto urban area, adoption of the *Power to Live Green: Toronto’s Sustainable Energy Strategy* (2009), growth of carbon credit markets with more specific rules around eligibility and ownership in response to emerging cap-and-trade systems (e.g. Regional Greenhouse Gas Initiative; Western Climate Initiative), and provincial developments toward a mandatory cap-and-trade program.

reductions have been verified by an independent third party verifier, and may be serialized and listed through a GHG registry. Usually, one carbon credit represents all rights and benefits associated with one tonne of GHG emissions reductions. Carbon credits generally can be banked, retired or transacted.

*Banking a carbon credit* generally refers to holding a carbon credit or other environmental attribute in the context of a regulated trading system for future compliance use, perhaps in anticipation of using it to comply with future regulatory requirements.

*Retiring a carbon credit* refers to permanently taking a carbon credit out of use and rendering it (and the underlying GHG reductions) or other environmental attributes of no further force and effect, thereby removing it from any and all voluntary or regulatory systems.

*Transacting a carbon credit, or Transaction*, refers to encumbering, claiming, retiring for another party's benefit, or otherwise transferring legal and/or beneficial ownership of a carbon credit or other environmental attribute in consideration for value.

*Environmental Attributes* refers to a broad range of rights and benefits associated with GHG emission reduction, renewable electricity and energy efficiency activities including, but not limited to the environmental rights and benefits that may take the form of carbon credits, renewable energy certificates, green tags, white tags, labelled/certified "green" power, negawatts, water conservation credits, and related attributes.

*Greenhouse gas emissions (GHG emissions)* refers to the dissemination in the air of gases – including carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons, perfluorocarbons, and nitrogen trifluoride and related gases or any other contaminant prescribed as a greenhouse gas by government regulation or international treaty - which contributes to the warming of the earth's atmosphere.

2. City staff will continuously review projects and activities that result in the reduction of greenhouse gas emissions, the generation of renewable energy, the conservation of electricity, natural gas, or water, or any other environmental attributes to determine whether such attributes are eligible for designation as carbon credits, renewable energy certificates, conservation credits, or other similar attributes and products, respectively.

3. City staff will take all reasonable steps to safeguard the City's ownership of environmental attributes in any contracts, procurement documents, and other arrangements and, if selling or not retaining such attributes, will attempt to obtain a reasonable commercial benefit (e.g. higher royalty rate or lease rate, etc.) in return for ceding its rights associated with such environmental attributes.

4. City staff will take all necessary steps to keep current the City's table of projects and activities for which environmental attributes exist or potentially exist and that the City owns or potentially owns, in whole or in part. Such table will be posted on the City's website and periodically updated.
5. City staff may take steps to realize value from carbon credits and other environmental attributes only if:
  - i. The transaction would result in a net benefit to the City;
  - ii. Realizing value from transactions shall not compromise the City's ability to meet its GHG emissions reduction targets, renewable energy targets, and other environmental targets.
6. Any realization of value from transactions shall be guided by the following:
  - i. Carbon credits and other environmental attributes may be transacted in the period prior to the imposition of a cap-and-trade compliance obligation on the City.
  - ii. Preference will be given to organizations generating emissions from their operations in Canada with the majority of emissions coming from sources within the City of Toronto or Ontario, in order to encourage or facilitate the reductions being counted toward achieving the Province's greenhouse gas targets, if possible.
  - iii. A portion of carbon credits may be banked for future use.
  - iv. Any organizations seeking to purchase City carbon credits or other environmental attributes for the purpose of meeting cap-and-trade regulatory obligations will not be considered as eligible parties for any transaction.
7. All proceeds from the realization of value from transactions shall be used to fund City corporate capital environmental initiatives and shall be deposited in a reserve fund established for that purpose.

## Appendix B: Public Notice of City of Toronto Carbon Credits

Below is a list of projects and programs, undertaken by the City of Toronto, that have contributed to greenhouse gas reductions and that are, or may be, eligible for carbon offset credits. Consistent with City policy, this list provides notice of the City's ownership or potential ownership, in whole or in part, of those credits. This list will be continually updated to include any new projects and reflect changes to any of the projects listed below. It should be noted that this list does not represent all of the projects that the City has undertaken that have resulted in greenhouse gas reductions but solely the projects that the City believes are or may be eligible for carbon offset credits at this time.

<b>Projects/Facilities</b>	<b>Type</b>	<b>City Division, Agency, Board or Commission</b>
Fleet Vehicles	Acquisition of hybrids and fuel-efficient vehicles	Fleet Services
Tree Plantings	Afforestation	Parks, Forestry and Recreation
Biodiesel	Alternative Fuel Purchase	Fleet Services
Ethanol Gasoline	Alternative Fuel Purchase	Fleet Services
City Hall	Deep Lake Water Cooling	Facilities Management
John Street Roundhouse	Deep Lake Water Cooling	Economic Development and Culture
Metro Hall	Deep Lake Water Cooling	Facilities Management
Old City Hall	Deep Lake Water Cooling	Facilities Management
Police Headquarters	Deep Lake Water Cooling	Facilities Management
Ashbridges Bay Treatment Plant	Digester Gas Utilization	Toronto Water
R.L. Clark Water Treatment Plant	Energy Efficiency Retrofit	Toronto Water
Ellesmere Pumping Station	Energy Efficiency Retrofit	Toronto Water



Evergreen Brickworks	Energy Efficiency Retrofit	Economic Development and Culture
LED Traffic Signal Lamp Conversion	Energy Efficiency Retrofit	Transportation Services
R.C. Harris Water Treatment Plant	Energy Efficiency Retrofit	Toronto Water
Arenas	Energy Efficiency Retrofit	Facilities Management/ Parks, Forestry and Recreation
Central Maintenance Garage	Energy Efficiency Retrofit	Facilities Management
Civic Centres	Energy Efficiency Retrofit	Facilities Management
Community Centers	Energy Efficiency Retrofit	Facilities Management/ Parks, Forestry and Recreation
Direct Energy Centre	Energy Efficiency Retrofit	Facilities Management/ Exhibition Place
EMS Stations	Energy Efficiency Retrofit	Facilities Management/ Emergency Medical Services
Exhibition Place	Energy Efficiency Retrofit	Facilities Management/ Exhibition Place
Fire Halls	Energy Efficiency Retrofit	Facilities Management/ Fire Services
Police Headquarters	Energy Efficiency Retrofit	Facilities Management
Police Stations	Energy Efficiency Retrofit	Facilities Management
Public Libraries	Energy Efficiency Retrofit	Facilities Management/ Toronto Public Library
Recreation Centers Lighting	Energy Efficiency Retrofit	Facilities Management/ Parks, Forestry and Recreation
Ricoh Coliseum	Energy Efficiency Retrofit	Facilities Management/ Exhibition Place
St. Lawrence Hall and South Market	Energy Efficiency Retrofit	Facilities Management
Transfer Stations	Energy Efficiency Retrofit	Facilities Management/ Solid Waste Management
Wychwood Barns	Geo-thermal heating/cooling system	Economic Development and Culture

Beare Road Landfill	Landfill gas collection, combustion and electricity generation	Solid Waste Management/ Technical Services
Brock West Landfill	Landfill gas collection, combustion and electricity generation	Solid Waste Management/ Technical Services
Keele Valley Landfill	Landfill gas collection, combustion and electricity generation	Solid Waste Management/ Technical Services
Better Building Partnership	Loan Repayment Reserve Fund	Facilities Management
Queensway Fieldhouse	New Construction	Parks, Forestry and Recreation
F.J. Horgan Water Treatment Plant	Photovoltaic Installation	Toronto Water
Horse Palace Building	Photovoltaic Installation	Facilities Management/ Exhibition Place
Better Building Partnership	Toronto Energy Conservation Fund	Facilities Management
Better Building Partnership	Toronto Green Energy Fund	Facilities Management
Direct Energy Centre	Tri-generation System	Facilities Management/ Exhibition Place

## Appendix C: Members of Carbon Credit Working Group

1. Build Toronto
2. Corporate Finance
3. Economic Development & Culture
4. Enwave Energy Corporation
5. Exhibition Place
6. Facilities Management
7. Fleet Services (also representing fleets from Fire Services, Police Services, and EMS)
8. Legal Services
10. Parks, Forestry & Recreation
11. Policy, Planning, Finance and Administration
12. Purchasing & Materials Management
13. Shelter, Support & Housing Administration
14. Solid Waste Management
15. Toronto Atmospheric Fund
16. Toronto Building
17. Toronto Community Housing Corporation
18. Toronto Environment Office
19. Toronto Hydro Corporation
20. Toronto Parking Authority
21. Toronto Public Health
22. Toronto Public Library
23. Toronto Water
24. Toronto Zoo
25. Transportation Services
26. Toronto Transportation Commission
27. Waterfront Secretariat