

## **APPENDIX B:**

# **Detailed Listing of Green Initiatives and their Environmental Benefits for GHG Reduction Claims during the period of 2001-2011**

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## Notes:

Unless otherwise stated, all reported carbon equivalent (eCO<sub>2</sub>) reductions shown in this Appendix have been verified by the Toronto Environment Office (TEO). Some eCO<sub>2</sub> numbers appear as they were reported to the TEO and have not been adjusted because of insufficient detail provided in order to calculate an adjustment.

All eCO<sub>2</sub> numbers calculated by TEO have been calculated using a “mean”, not a “margin” calculation basis. “Mean” calculations take into account a full electricity source mix (eg. hydro, nuclear, coal, etc) which accurately represents the current mix of energy generating sources in Ontario whereas “margin” calculations assume that all emissions discharged during the production of electricity will come solely from a coal source.

Furthermore, the following should also be noted:

- Numbers calculated for reductions of NO<sub>x</sub> and SO<sub>x</sub> have been calculated by individual ABCCDs unless otherwise stated
- “Not provided” indicates that data was not submitted
- “Not quantifiable” indicates that not enough information was available to be able to convert an activity into tonnes of eCO<sub>2</sub> or that methods have not yet been developed to quantify tonnes of eCO<sub>2</sub>, as is the case for green roofs and other ‘green’ infrastructure or for awareness activities or policy development

The following footnotes have also been inserted in this Appendix where appropriate:

<sup>a</sup> This program and its associated benefits have been reported by more than one ABCCD. Although TEO would like to acknowledge the collaborative efforts between ABCCDs, caution will be exercised in future to avoid ‘double-counting’; furthermore, numbers that were confirmed as being double-counted were adjusted appropriately for calculations found in **Table 4: Summary of Environmental Benefits and eCO<sub>2</sub> Reductions in 2007** found in the accompanying staff report, *Green Initiatives and Activities - Presentations and Accompanying Data*

<sup>b</sup> Calculated energy use (kWh) by TEO using energy conversion factor provided by Toronto Water

<sup>c</sup> Number not adjusted by TEO

<sup>d</sup> Number is an ‘umbrella’ number which may include other similar projects listed for other ABCCDs and/or can include projects being implemented at the community level

<sup>e</sup> Number is unreliable because of unknown assumptions used in calculations

<sup>f</sup> Number could not be verified to ensure that overlap did not take place with other ABCCDs

<sup>g</sup> This project has not yet received approval from Council

<sup>h</sup> Uncertain as to the stage of the project eg. planning, proposal, approved, implemented etc. and therefore difficult to judge whether the numbers are ‘actual’ versus ‘expected/projected’

<sup>i</sup> Uncertain of timeframe of project (eg. start and end dates) and therefore difficult to allocate eCO<sub>2</sub> tonnage to specific years

<sup>j</sup> Number reported is for a multi-year project and therefore estimates were made in **Table 4: Summary of Environmental Benefits and eCO<sub>2</sub> Reductions in 2007** in the staff report, *Green Initiatives and Activities - Presentations and Accompanying Data*, to attribute the project’s reductions achieved for the year 2007

<sup>k</sup> ‘Estimated’ rather than ‘actual’ numbers due to the timeframe for completion of the project

<sup>l</sup> These numbers were taken directly from the ABCCD’s presentation and have not been verified through submission of a ‘Green Initiatives Reporting Template’; these numbers have not been included in **Table 4: Summary of Environmental Benefits and eCO<sub>2</sub> Reductions in 2007** in the staff report, *Green Initiatives and Activities - Presentations and Accompanying Data*, because no follow-up information was submitted

<sup>m</sup> The City of Toronto did not participate in this initiative after the data had been reported as a Green Initiative

<sup>n</sup> This number was not included in the calculation found in **Table 4: Summary of Environmental Benefits and eCO<sub>2</sub> Reductions in 2007** to avoid potentially high levels of inaccuracy ie. high certainty that double-counting was taking place but was not able to get confirmation from ABCCDs; project did not occur etc.

## Energy Conservation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Facilities and Real Estate	Better Buildings Partnership- New Construction Program <sup>j</sup>	2008	Reduction of 157,000,000 kWh of electricity; Reduction of 9,651,205 m <sup>3</sup> of natural gas	57,364	Improves living conditions while increasing energy efficiency	\$ 19,700,000 annually
Toronto Hydro	Summer Challenge for Business <sup>d</sup>	2007	83 MW load capacity reduction	21,248	Provide incentives for businesses to reduce energy use	Not provided
Toronto Hydro	Summer Savings Program <sup>d</sup>	2007	Reduction of 57.6 million kWh of electricity	13,939	Provide incentives to residential consumers to reduce energy use	Not provided
Enwave	Deep Lake Water Cooling – Heat Exchanger Replacement	2007	Reduction of 57,000,000 kWh of electricity; Generation of 260,000 kWh of thermal energy; NO <sub>x</sub> reduced by 20,070 kg and SO <sub>x</sub> reduced by 3633 kg	13,794	Smog reduction	\$ 5.7 million (2007)
Toronto Hydro	2008 Energy Conservation Projects <sup>a,c,d,f,k,n</sup>	2008	Reduction of 7.6 million kWh/year; Reduction of 5.4 million m <sup>3</sup> of natural gas	11,900	Smog reduction	\$ 2.9 million annually
Facilities and Real Estate	Energy Retrofit Program – Overall Energy Retrofit Program Projects <sup>a,c,d,k,n</sup>	2007-2009	Reduction of 33,700,000 kWh of electricity; 1,600,000 reduction of m <sup>3</sup> of natural gas; water reduction of 15,000 m <sup>3</sup>	11,367	Improves indoor air quality, reduces energy use	\$ 4.07 million annually
Toronto Water	Ashbridges Bay Energy Management Plan – Heat Recovery <sup>k</sup>	2008	Reduction of 4,450,481 m <sup>3</sup> natural gas; reduction of NO <sub>x</sub> by 7.3 tonnes and SO <sub>x</sub> by 44 kg	8,932	Smog reduction	\$ 2,212,616
Toronto Community Housing Corporation	Building Renewal Program <sup>k</sup>	To be completed 2009	Reduction of 9,116,000 kWh of electricity; reduction of 2,796,000 m <sup>3</sup> of natural gas	7,818	Smog reduction; Promotion of energy conservation	\$ 2,000,000 annually
Toronto Water	Water Supply	2009-2013	Reduction of 25,687,109 kWh of	6,216	Smog reduction and energy	\$ 2,311,840

## Energy Conservation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
	Energy Management Plan <sup>k</sup>		electricity; reduction of NO <sub>x</sub> by 28 tonnes and SO <sub>x</sub> by 98 tonnes		efficiency	annually
TTC	Purchase of Green Power <sup>c,k</sup>	2010-2011	5% of 2009 electricity will come from certified green power sources and 10% in 2010	5,469 tonnes in 2009	Support renewable energy initiatives	Not provided
Parks, Forestry, and Recreation	Arenas Energy Retrofit Project <sup>a</sup>	2007	Reduction of 10,289,340 kWh of electricity; reduction of 1,070,945 m <sup>3</sup> of natural gas	4,639	Smog reduction	\$ 1,255,253 annually
Transportation Services	Light Emitting Diode (LED) Traffic Signal Lamp Conversion at all Existing Traffic Control Signals <sup>k</sup>	To be completed 2010	Reduction of 18,700,000 kWh of electricity	4,525	Reduce energy; Product requires less servicing and maintenance	\$ 1,900,000 (by 2010)
Transportation Services	LED Traffic Signal Lamp Conversion at all Existing Traffic Control Signals	10-20 year project began in 2007	Reduction of 11,600,000 kWh of electricity	2,807	Reduce energy; Product requires less servicing and maintenance	Not provided
Transportation Services	LED Traffic Signal Lamp Conversion at all Existing Traffic Control Signals	2007	Reduction of 8,970,000 kWh of electricity	2,171	Reduce energy; Product requires less servicing and maintenance	Not provided
Toronto Community Housing Corporation	Energy Star Refrigerator Replacement Program	2007	Reduction of 14,702,000 kWh of electricity	3,588	Smog reduction; Promotes use of energy efficient appliances	\$ 1.4 million annually
Toronto Community Housing Corporation	In Suite Compact Fluorescent Lightbulb Initiative	Completed 2007	Reduction of 8,234,000 kWh of electricity	1,993	Smog reduction	\$ 800,000 annually
Toronto Hydro	2007 Energy Conservation Projects, <sup>a,c,d,f,n</sup>	2007	Reduction of 6 million kWh of electricity; reduction of 1,151,000 m <sup>3</sup> of natural gas and 1,500,000,000 lbs of steam	2,000	Improved building efficiency and on-going energy conservation	\$ 700,000 annually

## Energy Conservation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Facilities and Real Estate	Energy Retrofit Program – Deep Lake Water Cooling <sup>d,k</sup> Metro Hall, City Hall, Police Headquarters, and Old City Hall	2008-2009	Reduction of 7,200,000 kWh of electricity	1,747	Reduce dependence on grid electricity	Not provided
Facilities and Real Estate	Energy Retrofit Program – Civic Centers <sup>k</sup>	Completed by 2008	Reduction of 6,110,000 kWh of electricity; reduction of 110,000 m <sup>3</sup> of natural gas; reduction of 1,453,000 lbs of steam	1,699	Improves indoor air quality, reduces energy use	\$ 530,000 annually
Toronto Hydro	The Great Refrigerator Round-Up <sup>d</sup>	2007	1.37 MW load capacity reduction with the addition of 5.69 million kWh saved	1,377	Old appliances removed from grid and properly recycled	Not provided
Toronto Water	Clark Energy Management Plan <sup>k</sup>	2011-2014	Reduction of 5,382,740 kWh of electricity; reduction of NO <sub>x</sub> by 5.9 tonnes and SO <sub>x</sub> by 5.3 tonnes	1,302	Smog reduction and energy efficiency	\$ 484,446 annually
Fire Services	Energy Retrofit Program – Fire Halls <sup>k</sup>	Completed 2008	Reduction of 1,048,000 kWh of electricity; reduction of 428,000m <sup>3</sup> of natural gas	1,116	Smog reduction; Improves indoor air quality; Improves building operations	\$ 290,000 annually
Exhibition Place	Direct Energy Trigenation System	2007	Reduction of 2,805,000 kWh of electricity; NO <sub>x</sub> reduced by 3480 kg and SO <sub>x</sub> reduced by 630 kg	679	Smog reduction	\$ 500,000 annually
Exhibition Place	Direct Energy Centre Lighting Retrofit	2007	Reduction of 2,805,000 kWh of electricity; NO <sub>x</sub> reduced by 316 kg and SO <sub>x</sub> reduced by 177 kg	679	Smog reduction	\$ 252,450 annually
Facilities and Real Estate	Energy Retrofit Program – "City Hall Sustainable Project" <sup>nk</sup>	To be completed 2011	Reduction of 2,600,000 kWh of electricity; reduction of 14,300,000 lbs of steam	629	Improves indoor air quality, reduces energy use	\$ 600,000 annually
Toronto Community	Furnace Replacement	2007	Reduction of 282,648 m <sup>3</sup> of natural gas	567	Promotes energy conservation and tenant	\$ 120,000 annually

## Energy Conservation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Housing Corporation	Program				education of household monitoring systems	
Toronto Water	HCTP Energy Management Plan <sup>k</sup>	2010-2012	Reduction of 2,058,360kWh of electricity; reduction of NO <sub>x</sub> by 2.3 tonnes and SO <sub>x</sub> by 7.8 tonnes	498	Smog reduction and energy optimization	\$ 192,913
Toronto Water	FJ Horgan Energy Management Plan <sup>k</sup>	2009-2011	Reduction of 1,760,760 kWh of electricity; reduction of NO <sub>x</sub> by 1.9 tonnes and SO <sub>x</sub> by 6.7 tonnes	497	Smog reduction and energy efficiency	\$ 158,468 annually
Exhibition Place	Coliseum Boiler Replacement Project <sup>k</sup>	2008	Reduction of 369,196 kWh of electricity; reduction of 185,241 m <sup>3</sup> natural gas; NO <sub>x</sub> reduced by 128 kg and SO <sub>x</sub> reduced by 23 kg	461	Smog reduction	\$ 138,241 annually
Toronto Public Library	Energy Efficiency Retrofit Project	Began in 2001 to 2007	Since 2001, reduction of 2,049,100 m <sup>3</sup> of electricity; reduction of 240 m <sup>3</sup> of natural gas	367	Smog reduction	\$ 375,400 annually
Toronto Water	Ashbridges Bay Energy Management Plan – Efficient Energy Lighting Upgrade <sup>k</sup>	2010-2013	Reduction of 1,456,109 kWh of electricity; reduction of NO <sub>x</sub> by 1.6 tonnes and SO <sub>x</sub> by 5.5 tonnes	352	Smog reduction	\$ 131,049
Transportation Services <sup>j</sup>	Cold-in-Place Recycling Asphalt <sup>k</sup>	2006-2007	Reduction of 1,111,111 kWh of electricity	269	Reduction of energy and waste	Reduction in 20-40% over conventional methods
Exhibition Place	Queen Elizabeth HVAC Retrofit	2007	Reduction of 242,000 kWh of electricity; reduction of 100,000 m <sup>3</sup> of natural gas; NO <sub>x</sub> reduced by 84 kg and SO <sub>x</sub> reduced by 15 kg	259	Smog reduction	\$ 56,000 annually
Facilities and Real Estate	Energy Retrofit Program – St. Lawrence Hall & Market South <sup>k</sup>	2008	Reduction of 459,000 kWh of electricity; reduction of 54,000m <sup>3</sup> of natural gas	219	Retrofit work creates jobs; Improves indoor air quality, reduces energy use	\$ 63,000 annually
Exhibition	Better Living Centre	2007	Reduction of 650,000 kWh of	157	Smog reduction	\$ 53,950

## Energy Conservation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Place	Retrofit		electricity; NO <sub>x</sub> reduced 226 kg and SO <sub>x</sub> reduced by 41 kg			annually
Toronto Water	Humber WWTP Energy Management Plan <sup>k</sup>	2009-2010	Reduction of 533,750 kWh of electricity; reduction of NO <sub>x</sub> by 0.6 tonnes and SO <sub>x</sub> by 2 tonnes	129	Smog reduction and energy efficiency	\$ 42,700
Exhibition Place	East Annex Lighting Retrofit	2007	Reduction of 377,262 kWh of electricity; NO <sub>x</sub> reduced by 131 kg and SO <sub>x</sub> reduced by 24 kg	91	Smog reduction	\$ 34,000 annually
Facilities and Real Estate	Energy Retrofit Program – Police HQ <sup>a,k</sup>	2008	Reduction of 138,000 kWh of electricity; reduction of 24,600 m <sup>3</sup> of natural gas	83	Improves indoor air quality, reduces energy use	\$ 32,000 annually
Toronto Water	RC Harris and Island Energy Management <sup>k</sup>	2009-2010	Reduction of 323,587 kWh of electricity; reduction of NO <sub>x</sub> by 356 kg and SO <sub>x</sub> by 1230 kg	78	Smog reduction and energy efficiency	\$ 29,122 annually
Exhibition Place	Horse Palace Boiler Retrofit	2007	Reduction of 6000 kWh of electricity; reduction of 32,000 m <sup>3</sup> natural gas; NO <sub>x</sub> reduced by 2 kg and SO <sub>x</sub> reduced by 0.8 kg	66	Smog reduction	\$ 11, 580 annually
Toronto Region Conservation Authority	EcoOffice Upgrades including Downsview Office	2008	Reduction of 25,000 kWh electricity, reduction of 1200 m <sup>3</sup> of natural gas; reduction of 275 m <sup>3</sup> of water; use of 100% renewable energy	30	Smog reduction; Reduction of water and energy consumption	\$ 9,200 annually
Transportation Services	Warm Asphalt <sup>c</sup>	2007	Pilot project saved 6,820 litres of diesel fuel at the production plant	22	Smog reduction; Improves working conditions	Not quantifiable
Exhibition Place	Direct Energy Centre Underground Garage Intelligent Lighting System <sup>k</sup>	2008	Reduction of 84,480 kWh of electricity; NO <sub>x</sub> reduced by 72 kg and SO <sub>x</sub> reduced by 13 kg	20	Smog reduction; Demonstrate new innovative lighting technology	\$ 19,000 annually
Toronto Zoo	Green Macaques! Project; geexchange system for lion-tailed	2007	Reduction of 38,000 kWh	9	Raise awareness of geothermal technology	Not provided

## Energy Conservation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
	macaques exhibit					
Exhibition Place	Re-roofing of the Music Buildings with Addition of R20 Insulation <sup>k</sup>	2008	Reduction of 24,930 kWh of electricity; reduction of 119 m <sup>3</sup> natural gas; NO <sub>x</sub> reduced by 9 kg and SO <sub>x</sub> reduced by 2 kg	6	Smog reduction	\$ 2,102 annually
Exhibition Place	Queen Elizabeth Window Replacement Project	2007	Reduction of 8906 kWh of electricity; reduction of 164 m <sup>3</sup> natural gas; NO <sub>x</sub> reduced by 14 kg and SO <sub>x</sub> reduced by 2.5 kg	2	Smog reduction	\$ 1256 annually
TTC	Subway Station Lighting Retrofit with LED <sup>k</sup>	To be completed 2009	Reduction of 8,200 kWh annually	2	Smog reduction	\$ 820 annually
Facilities and Real Estate	Energy Purchasing and Monitoring	Ongoing	Not provided	Not provided (began May 2008)	Provide reports to building managers for self-monitoring of energy use	\$ 500,000 annually <sup>k</sup>
Toronto Atmospheric Fund	LightSavers <sup>a</sup>	2007	Potential electricity reduction of 70% in comparison with conventional lighting technologies	Not provided	Stimulate market transformation through new technology	Not provided
Toronto Atmospheric Fund	TowerWise <sup>a</sup>	2007	Potential reduction of 15-25% in energy savings for a 3-5 year old building	Not provided	Healthier housing conditions; energy conservation	Not provided
Toronto Hydro	2008 OPA/City Demand Reduction Program <sup>f,k,m</sup>	2008	Reduction in 4 million kWh of electricity	Not provided	Smog reduction; Reduced stress on grid	\$ 2.5 million annually
Toronto Parking Authority	Photo Cell Retrofit <sup>a</sup>	2007	Not provided	Not provided	Energy conservation and reduction	Reduced hydro costs by 10%
Toronto Police Services	Next Generation of Energy Conservation	2008	Not provided	Not provided	Energy reduction from LED lighting, occupancy sensors, indirect lighting	Not provided
Toronto Police Services	LEED-Silver Certification <sup>k</sup>	2009	75% construction waste diverted from landfill; reduction of energy	Not provided	Smog reduction; Waste reduction	Not provided



## Energy Conservation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
			consumption by 30%; potable water used reduced by 40%; to be open 2009			
Toronto Public Library	CRT monitors replaced by LCD monitors	2008-2010	Replacement of approximately 100 PCs per year across 99 branches from 2008-2010	Not provided	Smog reduction; Energy reduction	Not provided

## Alternative Energy Generation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Transportation Services	Solar Powered Transit Shelters <sup>k</sup>	After 20 years; start 2008	Reduction of 12.7 million kWh of electricity	3073	Reduce reliance on grid	\$ 1,200,000 after 20 years
Transportation Services	Solar Powered Transit Shelters <sup>k</sup>	2008	Reduction of 4.5 million kWh of electricity	1089	Reduce reliance on grid	\$ 420,000 after 10 years
Toronto Hydro	THESI/TREC Wind Turbine at Exhibition Place <sup>a,k</sup>	Since 2003	750 kW wind turbine produces 4,000,000 million kWh of power since 2003	968	Education and awareness of renewable energy	Not provided
Toronto Hydro	Toronto Hydro Solar Installation at Commissioners Street	2004	36 kW solar panel installed producing 1.4 million kWh of electricity	339	Largest kind in Toronto to build solar market	Not provided
Exhibition Place	Wind Turbine <sup>a,c,f,n</sup>	2007	Generates 1,200,000 kWh of energy; NO <sub>x</sub> reduced by 418 kg and SO <sub>x</sub> reduced by 8 kg	293 <sup>c</sup>	Smog reduction; Showcase innovative technology; Used as education program for elementary schools; Attracts visitors	Not provided
Toronto and Region Conservation Authority	CNE Project/ TRCA Collaboration with TAF and Exhibition Place <sup>a,c,f,n</sup>	2008	Generation of 120 MWh of electricity	115 <sup>c</sup>	Demonstration and training site for innovative technology	50,000 annually
Toronto Parking Authority	Solar Powered Pay and Display Machines <sup>k</sup>	2008	Generation of 284,200 kWh	69	Smog reduction	Not provided
Enwave Energy Corporation	Deep Lake Water Cooling – Thermal Energy Generation	2007	Generation of 260,000 kWh	63	Smog reduction; Showcase innovative technology	Not provided
Exhibition Place	Horse Palace Photovoltaic Plant	2007	Generation of 121, 275 kWh of electricity; NO <sub>x</sub> reduced by 42 kg and SO <sub>x</sub> reduced by 7.6 kg <sup>c</sup>	29	Smog reduction; Showcase innovative technology	\$ 10,000 annually

## Alternative Energy Generation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Exhibition Place	Press Building Geothermal Plant <sup>k</sup>	2008	Generation of 110,000 kWh of electricity; NO <sub>x</sub> reduced by 38 kg and SO <sub>x</sub> reduced by 7 kg	27	Smog reduction; Showcase innovative technology in heritage building	\$ 10,000 (2007/08)
Exhibition Place	Combi PV/Thermal Project at the Horse Palace <sup>k</sup>	2008	Generation of 19,520 kWh of electricity; NO <sub>x</sub> reduced by 8 kg and SO <sub>x</sub> reduced by 1.2 kg <sup>c</sup>	5	Smog reduction; Showcase innovative technology in heritage building	\$ 4,400 annually
TTC	Microwave Transmitter Solar Photovoltaic Panel	Ongoing	Reduction of 1,000 kWh since 2003	0.25	Smog reduction; Support renewable energy initiatives	\$6000 annually
Toronto Association of Business Improvement Areas (TABIA)	PV Solar Panel Project: Bloor West Village	2007	Generate 1.5 kW of energy	Not quantifiable	Alternative energy source; smog reduction	Not provided
Toronto Atmospheric Fund	SolarCity <sup>a</sup>	2007-2008	Not provided	Not provided	Reduce smog and GHG emissions	Not provided

## Electricity Load Capacity Reduction

N.B. With the exception of Solid Waste Management's data, the numbers in this table have not been adjusted by TEO

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits	ABCCD Provided eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Toronto Hydro	ABTP and Green Lane Biogas Cogeneration Projects <sup>k</sup>	2011	Generation of 66,000 and 33,000 MWh/year for ABTP and GL respectively	17,000 tonnes and 21,000 tonnes respectively	Heat and emergency power generated	Not provided
Toronto Hydro	Distributed Generation – Deep Lake Water Cooling	2007	27 MW load capacity reduction	6,500	Displacement of coal-fired power generation; incentive to sell power to grid	Not provided
Toronto Hydro	TAPS <sup>d</sup>	2007	8.3 MW load capacity reduction	4,643	Neighbourhood based education program; creation of local jobs	Not provided
Toronto Hydro	Business Incentive Program	2007	9 MW load capacity reduction	2,202	Reduced electricity costs for businesses	Not provided
Toronto Hydro	2008 Low Income Program <sup>k</sup>	2008	3 MW load capacity reduction	2,000	Energy savings for low income tenants	Not provided
Toronto Hydro	2008 Multi-Retail Mass Market Electricity Conservation Program <sup>k,e</sup>	2008	1.6 MW load capacity reduction	1,000	Engage consumers in use of clotheslines and CFLs	Not provided
Toronto Hydro	Keep Cool – Room Air Conditioner Program <sup>d</sup>	2007	4.4 MW load capacity reduction; 15 MW reduced since 2005	677	Old appliances removed from grid and properly recycled	Not provided
Toronto Hydro	Low Income Housing – Social Housing Services Corporation	2007	1 MW load capacity reduction	670	Maintenance worker and tenant education program re energy efficiency values	Not provided
Toronto Hydro	Festive Light Exchange <sup>a,f</sup>	2007	1.8 MW load capacity reduction; 3 MW reduced since 2005	79	Reduced electricity load and cost	Not provided
Enwave	Distributed Generation – Steam	2008	Generate 11 MW of energy from steam; operational 2008	Not provided	Supplies power to Toronto Hydro; smog reduction	Not provided

## Electricity Load Capacity Reduction

N.B. With the exception of Solid Waste Management's data, the numbers in this table have not been adjusted by TEO

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits	ABCCD Provided eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
	Turbine Generator					
Solid Waste Management Services	Renewable Energy Systems: Landfill Gas Utilization	2007	Keele Valley: 20 MW Beare Road: 2 MW Brock West: 2 MW Thackery: online in 2009	<b>TEO Adjusted:</b> Keele Valley: 775,467 Beare Road: 68,255 Brock West: 195,015	Energy reduction	Not provided
Toronto Association of Business Improvement Areas (TABIA)	Green TBiz : Reduced Load Capacity through BIA	2007	Reduced load capacity by 107.5 kW <sup>d,e,f</sup> since 2006	Not quantifiable	Smog reduction	80,000 annually
Toronto Association of Business Improvement Areas (TABIA)	Reduced Load Capacity <sup>d,f</sup>	2007-2008	Reduced load capacity by 275 kW <sup>d,f</sup>	Not quantifiable	Smog reduction	Not provided
Toronto Hydro	Peaksaver <sup>d</sup>	2007	40 MW load capacity reduction	Not provided	Smog reduction; Reduction of peak loads	Not provided
Toronto Hydro	Peaksaver 2008 <sup>d</sup>	2008	11 MW load capacity reduction	Not provided	Smog reduction; Reduction of peak loads	Not provided
Toronto Parking Authority	Solar Photovoltaic – St. Lawrence Parking Garage <sup>k</sup>	2008	Installation of 20 kW solar photovoltaic	Not provided	Energy reduction	Not provided
Toronto Zoo	Light bulb upgrade	2007	28 kW load capacity reduction	Not provided	Energy reduction	Not provided
Toronto Police Services	Police Headquarters –	2009	Not provided	Not provided	Energy reduction	Not provided

### Electricity Load Capacity Reduction

N.B. With the exception of Solid Waste Management's data, the numbers in this table have not been adjusted by TEO

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits	ABCCD Provided eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
	Deep Lake System <sup>a,k</sup>					

## Transportation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Toronto Police Services	Right Sizing/Downsizing <sup>a</sup>	Since 1990	Not provided	34,721	Reduced cost of vehicles and number of vehicles purchased	Not provided
Toronto Police Services	Greening Fleet <sup>a,k</sup>	2008-2011	Not provided	9,146	Smog reduction	Not provided
Fleet Services	Green Fleet Plan 2008 <sup>a,d,j,k</sup>	2006-2008	Emissions reduction from green vehicles was 160,000 kg; emissions reduction from fuels was 3,120,000 kg in 2008	7,227	Smog reduction Reduce fuel consumption	\$ 417,000
TTC	TTC Planned Purchases of Hybrid City Buses <sup>k</sup>	2009	Reduction of 3.16 million litres of fuel; 130 hybrid buses	3,027	Smog reduction; Fuel reduction	Not provided
Fleet Services	Green Fleet Plan 2007	Phase I 2004-2007 and Phase II 2008-2011	Emissions reduction from green vehicles was 144,000 kg; emissions reduction from fuels was 1,823,000 kg	1,976	Smog reduction	Not provided
EMS	Green Fleet Plan <sup>a,k,j</sup>	2008-2011	Use 30-50% less fuel	1,200	Smog reduction	Not provided
Technical Services	Recycling Materials	2007	Reduced trips to landfill by 325,000 km; 250,000 tonnes of construction materials diverted from landfill	353	Smog reduction; Reduction of noise pollution; waste reduction	Not provided
Toronto Hydro	Green Fleet <sup>i</sup>	2001-2007	Used biodiesel in 80 fleet vehicles; 213,522 litres of biodiesel	72	Smog reduction	Cost neutral
Fire Services	Toyota Highlander Hybrids Project <sup>a</sup>	2008	Reduction of 1.9 tonnes of combined Criteria Air Contaminants	53.5	Smog reduction	\$ 14, 738 annually
Toronto Public Library	Efficient Delivery Routing	2007	Reduce number of delivery/pickups at 28 branches to once/day; travel reduction by 63,960 km per year since 2007	28	Smog reduction Efficient fuel use	\$ 70,000 annually
EMS	Diesel to Gasoline Replacement of Ambulances <sup>a</sup>	2007	Equivalent to taking 224 cars off the road	0.58	Smog reduction	Not provided
EMS	Ethanol Enriched	2007	Not provided	0.12	Smog reduction	Not provided

## Transportation

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
	Gasoline <sup>a</sup>					
EMS	Paramedic Bike Program	2007	500 responses/year	Not provided	Fuel and smog reduction	Not provided
Parks, Forestry and Recreation	Greening of Fleet and Small Equipment <sup>a</sup>	Not stated	Not provided	Not provided	Smog reduction Reduction of noise pollution	Not provided
Solid Waste Management Services	Greening Fleet: Biodiesel <sup>a</sup>	2007	324 collection vehicles on B5 biodiesel; 60 vehicles by 2008 will meet diesel engine standard to reduce smog pollutants	Not provided	Smog reduction	Not provided
Solid Waste Management Services	Greening Litter Collection Vehicles	2007	1 mini sweeper received and 2 procured to reduce PM <sub>2.5</sub> and PM <sub>10</sub>	Not provided	Particulate reduction; Improve air quality	Not provided
Toronto Atmospheric Fund	FleetWise <sup>a</sup>	2007-2008	20-50% improvement in fuel efficiency	Not provided	Smog reduction	Not provided
Toronto Zoo	Electric Zoomobile – Pilot Program	2009	Not provided	Not provided	Fuel reduction	Not provided
Transportation Services	Environmental Preferred Pavement Markings	2008	90,720 kg of VOCs reduced from use of waterborne paint; 11,525 kg of VOCs reduced from durable paint use	Not quantifiable	Lower VOC emissions; Decrease health risks for City workers applying paints	Not quantifiable
Transportation Services	Clean Roads to Clean Air (CRCA) Program	2007	Removal of 14 tonnes PM <sub>10</sub>	Not quantifiable	Public health benefits	\$ 750,000 annually
TTC	TTC Retrofit of Hybrid Buses with Lithium-Ion Batteries	2009	Convert 564 diesel-electric buses with Lithium-ion batteries	Not provided	Smog reduction; Fuel reduction	Not provided
TTC	Use of Hybrid Sedans at TTC	2008	Purchase 8 gas-electric hybrid sedans	Not provided	Smog reduction; Fuel reduction	Not provided
Enwave	Deep Lake Water Cooling (CFC Reduction)	2008	Not provided	Not quantifiable	Elimination of release of CFC's from refrigerants	Not provided



## Waste Management (Reduction and Diversion)

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Parks, Forestry and Recreation	Waste Reduction	2007	46% reduction of waste	854	Meet City's waste reduction targets	Not provided
Facilities and Real Estate	Creation and implementation of "No Waste" recycling program	2008 and ongoing	Recycled 523 tonnes of paper (City Hall and Metro Hall)	Not provided	Contributes to City's waste reduction targets	Not provided
Solid Waste Management Services	Increased Waste Diversion	Not provided	Not provided	Not provided	Meet City's waste reduction targets	Not provided
Technical Services	Recycled Materials from Construction	2007	250,000 tonnes of construction waste	Not quantifiable	Meet City's waste reduction targets	Not provided
Toronto Association of Business Improvement Areas (TABIA)	Waste Diversion 2006	2006	8 tonnes of waste diverted	Not quantifiable	Meet City's waste reduction targets	Not provided
Toronto Police Services	No Waste Recycling Program	Not provided	Not provided	Not provided	Meet City's waste reduction targets	\$ 50,000 annually
Toronto Public Library Board	Waste Management	2007	86% reduction of waste resulting in 376 tonnes diverted from landfill	Not quantifiable	Meet City's waste reduction targets	Not provided
Toronto Zoo	Eco-Cell cell phone recycling program	2007-2009	4500 phones	Not provided	Waste reduction; Education re non-renewable resources	Not quantifiable
Toronto Zoo	Decrease Waste	2008-2009	55% reduction in 2007	Not provided	Meet City's waste reduction targets	Not provided
TTC	Solid Waste Diversion	Not provided	77% waste diversion in 2008	Not provided	Meet City's waste reduction targets	Not provided

## Water Conservation, Filtration and Treatment

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Toronto Water	Water Efficiency Plan (WEP) <sup>j</sup>	2008 and ongoing	Reduction of 2,814,359 m <sup>3</sup> of water; reduction of 3,377,231 kWh of electricity <sup>b</sup>	817	Smog reduction and water efficiency	\$ 4.5 million annually after 2015 when plan fully implemented
Enwave	Deep Lake Water Cooling – Reduced Water Consumption from Electric Chillers <sup>k</sup>	2008	Reduction of 591,000 m <sup>3</sup> of water; 709,200 kWh of electricity reduced <sup>b</sup>	172	Reduced water demand	\$ 946,000 (2007)
Toronto Zoo	Air compressor upgrade; aquatic air compressor for various aquaria	2007	Reduction of 221,600 kWh of electricity; reduction of 18,000 m <sup>3</sup> of water,	54	Reduced water demand and energy demand	Not provided
Fire Services	Energy Retrofit Program – Fire Halls <sup>k</sup>	2008	Reduction of 12,700 m <sup>3</sup> water resulting in 15,240 kWh <sup>b</sup> reduction in electricity	4	Smog reduction; Improves indoor air quality; Improves building operations	Not provided
Parks, Forestry and Recreation	Water Conservation Strategy Development	2008	Not provided	Not provided	Water conservation to meet future needs	Not provided

## Green Development

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Enwave	Green Roof at Deep Lake Water Cooling Energy Transfer Building	2008	Not quantifiable	Not quantifiable	Reduction of heat island effect	Not provided
Parks, Forestry and Recreation	New Tree Maintenance	2008 and ongoing	Not provided	Not quantifiable	Reduce maintenance to conserve future energy needs	Not provided
Parks, Forestry and Recreation	Integrated Plant Health Care (IPHC)	2008 and ongoing	Not provided	Not quantifiable	Increase greenspace to reduce urban heat island	Not provided
Parks, Forestry and Recreation	Tree Planting	2008 and ongoing	15,671 trees planted in 2008; 91,073 small trees and shrubs planted in 2008	Not quantifiable	Increase greenspace to reduce urban heat island	Not quantifiable
Solid Waste Management Services	Green Roofs	Not provided	3 green roofs being planned and implemented	Not quantifiable	Energy reduction; Reduce heat island effect	Not quantifiable
Toronto and Region Conservation Authority	Mimico Waterfront Linear Park	2008	Connection of three parks by multi-use waterfront trail	Not quantifiable	Public access; Reinvigoration of local economy and Mimico as recreational destination; Connection to Lake Ontario	Not quantifiable
Toronto and Region Conservation Authority	Don Mouth Naturalization and Port Lands Flood Protection Project EA	2008	Creation of 40 ha of wetland	Not quantifiable	Restoration of significant wetland habitat	Not quantifiable
Toronto and Region Conservation Authority	Wilket Creek/Edwards Gardens	2008	Not quantifiable	Not quantifiable	Restored and functioning park after erosion from storm in 2005	Not quantifiable
Toronto and Region Conservation	Wicksteed Erosion Control Project	2008	Not quantifiable	Not quantifiable	Remedial erosion control work	Not quantifiable

## Green Development

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Authority						
Toronto and Region Conservation Authority	Rouge Watershed Strategy	2008	Enhance natural cover from 24 to 31%	Not quantifiable	Enhanced storm water management	Not quantifiable
Toronto and Region Conservation Authority	Tommy Thompson Park Natural Area Enhancement	2008	Creation of 20 ha of new coastal marsh; 5 ha of new forest <sup>h</sup>	Not quantifiable	Creation of natural area in urban area	Not quantifiable
Toronto Economic Development Corporation (TEDCO)	Soil and Groundwater – Brownfield Remediation and Technologies	2007	Not quantifiable	Not quantifiable	Education and awareness; Promotion of innovative green techniques	Not quantifiable
Toronto Economic Development Corporation (TEDCO)	Urban Forests and Ecological Restoration on Brownfields	2007	Not quantifiable	Not quantifiable	Education and awareness; Promotion of innovative green techniques	Not quantifiable
Toronto Economic Development Corporation (TEDCO)	Sustainable Built Form – Land Use Intensification and Green Buildings	2007	Not quantifiable	Not quantifiable	Education and awareness; Promotion of innovative green techniques	Not quantifiable
Toronto Economic Development Corporation (TEDCO)	Brownfield Remediation - Canpar	2006	Remediated 40 acre brownfield site with 25% of pre-existing concrete was reused in construction; 95% of construction waste was diverted; Nearly 60% of materials were extracted and manufactured regionally and nearly 60% of wood used was FSC certified.	Not quantifiable	TEDCO's first built City-owned LEED building	Not quantifiable
Toronto	Brownfield	2007	30 acres remediated; bioremediate	60	All materials from	Not quantifiable

## Green Development

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Economic Development Corporation (TEDCO)	Remediation – Pinewood Toronto Studios (formerly called Filmport) <sup>c</sup>		onsite eliminates 3,700 trucks from leaving the Port Lands		demolished buildings and foundations were recycled; Stormwater run-off will be filtered through onsite bioswales.	
Toronto Economic Development Corporation (TEDCO)	Brownfield Remediation – Toronto Hydro Service Facility	2006	18 acre restoration of contaminated waterfront lands	Not quantifiable	Almost 55,000 tons of contaminated soil was excavated from the site, treated and returned	Not quantifiable
Toronto Hydro	Tree Planting – Local Enhancement and Appreciation of Forests, Taylor-Massey Project	2007	2450 trees planted; additional 1500 with Tree Advocacy Program	Not quantifiable	Preservation of urban canopy; support of ‘green infrastructure’	Not provided
Toronto Hydro	Tree Planting – E-Billing Promotion	2007-2008	5,300 trees planted; 4,700 trees planted by end of 2008	Not quantifiable	Preservation of urban canopy; support of ‘green infrastructure’; reduce air conditioning	Not provided
Toronto Parking Authority	Tree Advocacy Program	Not provided	Not provided	Not provided	Reduction of heat island effect	Not provided
Toronto Parking Authority	Introduction of Design Guidelines for Greening Surface Carparks – Ossington Avenue	2007	Not quantifiable	Not quantifiable	Bioretention and swale reduce transport of pollution into lakes and streams and stormwater system	Not quantifiable
Toronto Public Library Board	Green Roof at Bloor and Gladstone Branch	2009	171.0 m <sup>2</sup> of green roof installed in 2009	Not quantifiable	Energy reduction; Increase greenspace to reduce urban heat island	Not provided
Toronto Zoo	Conservation Connection Centre Retrofit Project	2007-2009	Not provided	Not quantifiable	Education of local species at risk	Not provided

## Green Development

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	TEO Adjusted eCO <sub>2</sub> Reduction (tonnes)	Other Benefits	Financial Benefit
Toronto Zoo	Green roofs (Australasia)	2007	112 m <sup>2</sup> of green roof installed	Not quantifiable	Increased stormwater retention; reduce urban heat island	Not quantifiable
Toronto Zoo	Tundra trek green roof (polar bear holding)	2009	465 m <sup>2</sup> of green roof installed	Not quantifiable	Increased stormwater retention; reduce urban heat island	Not quantifiable
Toronto Zoo	Wetland restoration -- Restore 2 ponds on table lands	2007	Ponds are 1500 ft <sup>2</sup> and 500 ft <sup>2</sup>	Not quantifiable	Add to wildlife heterogeneity of Rouge Park ecosystem	Not quantifiable
Toronto Zoo	Wetland restoration; waterway wetland and native flower, shrub and tree meadow	2007	Not provided	Not quantifiable	Interpretive and education	Not quantifiable
Toronto Zoo	Pulling biomass of garlic mustard	2007-2009	350 kg pulled biomass	Not quantifiable	Interpretive and education	Not quantifiable
Toronto Zoo	Dog-strangling vine management	2007-2009	700 acres of land surveyed	Not quantifiable	Add to wildlife heterogeneity of Rouge Park ecosystem	Not quantifiable
Transportation Services	Tree Planting Program/Other Tree Planting	2007-2008	328 trees planted in 2007; projected 477 trees in 2008	Not quantifiable	Carbon sequestration; Stormwater management benefits; Reduce heat island effect	Not quantifiable

### Community Engagement (eCO2 Reduction and Financial Benefits Not Quantifiable)

ABCCD	Green Initiative	Year of Initiative	Quantifiable Environmental Benefits Claimed by ABCCD	Other Benefits
Economic Development, Culture and Tourism (EDC&T)	Green Economic Sector Development	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Green Manufacturing Action Team	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Eco Industrial Project	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Environmental Industry Capabilities and Market Prospectus	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	One Window Utility Conservation Program for Industry	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Toronto Environmental Research and Commercialization Initiative	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Training Program for Building Owners and Managers, Designers and Construction Trades	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Green Trade Fair	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Environmental Workshop for Small Business <sup>a</sup>	2007	Not quantifiable	Education and awareness; Promotion of innovative green techniques
EDC&T	Façade Improvement Program	2008	Not quantifiable	Use of energy efficient materials
EDC&T	Sony Centre	2010-2011	Not quantifiable	LEED Gold Standard for 2010, 2011

**Community Engagement (eCO2 Reduction and Financial Benefits Not Quantifiable)**

<b>ABCCD</b>	<b>Green Initiative</b>	<b>Year of Initiative</b>	<b>Quantifiable Environmental Benefits Claimed by ABCCD</b>	<b>Other Benefits</b>
EDC&T	Toronto Centre for the Arts	2006-2007	Retrofit two 340-ton chillers installed	Energy reduction
EDC&T	St. Lawrence Centre for the Arts	2007-2008	320 ton chiller installed	Support alternative energy generation; Energy reduction
EDC&T	Brick Works Environmental Remediation	2006-2007	Not quantifiable	Energy reduction; Support alternative energy generation; Removal of designated (toxic) substances
EDC&T	Wychwood Barns Revitalization	2006-2008	Not quantifiable	Ground source heating; Smog reduction
EDC&T	Fort York Landscape Restoration	2006	Not provided	Improve stormwater drainage; Environmental clean up
EDC&T	John Street Roundhouse Restoration	2007-2009	Not quantifiable	LEED Standard for 2007/2009
EDC&T	InfoTOgo Mobile Visitor Information Services	2007	Use of 1 gas-electric hybrid vehicle	Smog reduction; Fuel reduction
EDC&T	Yonge-Dundas Square	2007	20 fountains reduce chemical use; 30% diversion of waste	Waste reduction; Safer water from reduced chemical use
EDC&T	Green Screen Initiative	2007	Not provided	Energy, water and waste reduction
Facilities and Real Estate	Toronto Energy Conservation Fund	2008	Not provided	Reduce GHG emissions and smog reduction; improvements to indoor air quality
Facilities and Real Estate	Toronto Green Energy Fund	2008	Not provided	Reduce GHG emissions and smog reduction; job creation through stimulate renewable energy industry
Toronto and Region Conservation Authority (TRCA)	Green Building Councils	2009	Not provided	Education and awareness
TRCA	The Living City Campus at Kortright	2008	Over 50 environmental programs for schools and public groups over the past 25 years; 125,000 visitors annually	Demonstration of innovative programs and green technologies; Leadership development in business
TRCA	Archetype Sustainable House	2008	Construction of 2 green homes with 50% reduction in heating; 50% reduction in hot water; 50% reduction in electrical plug loads;	Annual viewing of 10,000 school children, 15,000 public visitors, 1000 homeowners; Demonstration of innovative programs and green



**Community Engagement (eCO2 Reduction and Financial Benefits Not Quantifiable)**

<b>ABCCD</b>	<b>Green Initiative</b>	<b>Year of Initiative</b>	<b>Quantifiable Environmental Benefits Claimed by ABCCD</b>	<b>Other Benefits</b>
			100% solar supplied electrical plug load	technologies
TRCA	Pearson Eco-Business Zone	2009	Reduction of 120,400 MWh of electricity; reduction of 583,600 GJ of natural gas by 2015 <sup>e</sup>	Encourage job development in green industry
TRCA	Zerofootprint Toronto, Living City zerofootprint, Region of Peel Environmental Carbon Calculator	2007	Project just initiated	Community engagement and education