



Region of Peel's Actions to Improve

Air Quality

2010 to 2011 Progress Report • 2011 to 2012 New Actions



Message from the Chair of Health Services

Improving air quality is a priority for the Region of Peel as it impacts the health of all residents, as well as our environment and economy. Over the past 10 years, the Region has implemented numerous air quality initiatives ranging in scope and size. The 2011 Report on the Region's Actions to Improve Air Quality celebrates the Region's key achievements in air quality over the last decade. The Report also presents the Region's 2011 air quality activities and updates on the Region's 2010 air quality activities. I am proud of the work of the Regional Air Quality Working Group, departments and divisions on their air quality achievements and look forward to their continued efforts in implementing actions to improve air quality.

Councillor Elaine Moore, Chair, Health Services Section of Regional Council

Ten Years of Air Quality Achievements (2001 to 2011)

We all contribute to air pollution through our use of energy for water, lighting, heating and cooling as well as our transportation choices. However, it is through our combined efforts that we will be able to improve the air we breathe.

The Region takes its role in improving air quality seriously and is involved in a number of initiatives to improve air quality which result in emission reductions and cost savings. Below are highlights of some of the air quality initiatives that the Region has implemented over the past 10 years. Improving air quality is a strategic priority and the Region is proud to be a leader in air quality improvements.

- The Regional Air Quality Working Group was established in 2001 as an inter-departmental working group that also includes municipal representatives. The Group meets quarterly to share best practices and discuss air quality updates, information and achievements.
- The Region's Smog Response Strategy was approved in 2003. The Strategy focuses on activities to reduce emissions from Regional facilities and operations that can be made on smog advisory days when action is most needed.
- The Britannia Landfill Gas Utilization Project was constructed in 2005 and generates "green power." This landfill gas-to-electricity project generates approximately 5.5 MW of power annually by turning a waste by-product into a valuable resource. Enough green electricity is generated to power 5,000 homes on a daily basis for 20 years, thereby reducing 250,000 tonnes of GHG emissions annually and improving local air quality.
- The Clean Air Peel website, peelregion.ca/health/cleanairpeel, was launched so that residents could get up-to-the-minute information on air quality and smog. The website also highlights the Region's various Clean Air Peel initiatives to improve our air quality.
- A joint venture traffic signal replacement project was implemented with the Cities of Brampton and Mississauga to replace existing incandescent lamps with lower energy LED-type traffic signals.
- By the end of 2011, the Region will have purchased 58 hybrid vehicles for its fleet.
- The Energy Management Plan builds on the Region's commitment to reduce corporate energy use and minimize the adverse social, economic and environmental effects of inefficient energy consumption.
- The Region implemented Transportation Demand Management (TDM) programs and services to help reduce single-occupant vehicle trips and reduce GHG emissions.
- Launch of the walkandrollpeel.ca website and active transportation marketing strategy helped to reduce vehicle trips, increase active transportation and reduce GHG emissions.
- The Region of Peel has diverted over 111,000 tonnes of organic waste from landfill and energy from waste disposal since the Region-wide Organics (Green Bin) Program began in 2007; representing a reduction of 5,966 tonnes of GHG emissions.
- The collection of waste vegetable oil via the Region's Community Recycling Centres has produced over 9,000 litres of bio-fuel since the program began in 2007. The use of bio-fuel has reduced emissions by 10 and 20% (carbon monoxide, carbon dioxide, sulphur dioxide and particulate matter) as compared to the use of diesel fuel.
- From 2005 to present, water efficiency initiatives have contributed to savings of approximately 4.0 tonnes of GHG emissions per day, equivalent to the emissions of approximately 375 medium sized vehicles being taken off the road.
- The air quality section of the Regional Official Plan was enhanced with new policies.
- The Region has adopted a Vehicle and Equipment Idling Policy, which limits idling to one minute, to reduce the air pollution from vehicle and equipment exhausts, create a healthier environment, promote energy (fossil fuel) conservation, reduce noise pollution and reduce wear and service needs on Regional vehicles and equipment.



Water Wise Garden, Lakeview WT Plant



Sunflower-shaped Solar Cells, Clarkson Wastewater Treatment Facility

NEW Air Quality Improvement Activities for 2011 to 2012

ENERGY

Poor air quality is closely linked to energy use because burning fossil fuels releases pollutants. Air quality is affected by the amount of energy we use and the ways in which we produce it. The Region is involved in many initiatives aimed at conserving energy in Regional operations as well as using less polluting forms of energy.

- Retro-commission one Peel Living building (Queen Frederica Drive). This will involve audits, adjustments and fine-tuning of existing HVAC and other equipment to optimize efficiency.
- Optimize pumping operations at the South Peel Water Distribution Plant using both software and hardware. This project will improve efficiency and reduce energy consumption by 10 to 15 per cent while reducing approximately 2,700 to 4,000 tonnes of GHG emissions annually.
- Install rooftop solar photovoltaic panels at four Peel Living sites. The project will generate an estimated 58,000 kWh per year. Annual revenues are estimated at \$44,500 (over 20 years with an Ontario Power Authority contract) and will reduce approximately 17 tonnes of GHG emissions annually.
- Install rooftop solar domestic hot water systems at four Peel Living sites. The project will generate approximately 437 kWh of heat energy per year and reduce approximately 160 tonnes of GHG emissions and 41,600 m³ of natural gas annually.
- Streetsville Childcare Center to host a solar domestic hot water system on the roof. The estimated annual heat energy generation is approximately 5 kWh per year and the project will reduce approximately 3.1 tonnes of GHG emissions and 800 m³ of natural gas annually.

TRANSPORTATION

Initiatives aimed at reducing kilometres travelled by increasing alternative modes of transportation such as walking or cycling, increasing the efficiency of fleets and reducing idling all help improve air quality by reducing pollutants.

- Develop a long-range Active Transportation Plan to create policies, programs and infrastructure to encourage employees and residents to walk, bike and/or use other active modes of transportation.
- Implement an Active Transportation marketing and education program to encourage residents and employees in Peel to use active modes of transportation.
- Work with Property Management to explore the provision of the Preferential Parking Program (five spots to start) to staff that carpool to 7120 Hurontario St.
- Two hybrid compact cars and one hybrid SUV will be added to the fleet in 2011 bringing the total number of hybrid vehicles in the Region to 58. The use of hybrid vehicles in 2011 will reduce the Region's annual CO₂ emissions by approximately 109,680 kg.

WATER

Reduction in water consumption reduces associated energy requirements and greenhouse gas emissions related to water and wastewater treatment and distribution processes.

- As part of the Residential Outdoor Fusion Landscaping Program, conduct over 1,300 landscape consultations with homeowners to encourage bio-diverse, water-wise landscapes. Planting native trees, shrubs and perennials is the focus. Fusion gardens are a new trend in landscape design that blends traditional gardens with modern eco-friendly plants. It reflects how society aims for lower costs, less maintenance and conservation of water, which helps to improve air quality.
- Two water-wise demonstration gardens will be installed on Region of Peel properties (Copper B Facility at 230 Advance Blvd. and the Lakeview Water Treatment Facility). A third demonstration garden will be installed at the new GO Parking Lot at Mayfield Road and Highway 50.



Organic Waste Program



Regional Hybrid Vehicle

UPDATES on 2010 to 2011 Air Quality Improvement Activities

TRANSPORTATION

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- The Employee Transit Pass Subsidy was successfully piloted in Peel. Based on the success of the project, Brampton Transit and Smart Commute Brampton-Caledon are planning to offer the program to other Smart Commute Brampton-Caledon members.
- Due to administrative and operational challenges the use of pool vehicles has not been launched. The three additional pool vehicles for the 10 Peel Alternative Ride Project has been suspended until additional resources can be allocated to the program. Eight lower emission vehicles are available for business travel and/or rental through Fleet Services.
- Eight hybrid SUVs and one hybrid compact car were added to the Region's Fleet, bringing the total number of hybrid vehicles in the Region to 55. The use of hybrid vehicles reduced the Region's annual CO₂ emissions by approximately 103,920 kg in 2010.

WATER

Reduction in water consumption reduces associated energy requirements and greenhouse gas emissions related to water and wastewater treatment and distribution processes.

- Thirty residents participated in the Residential Humidifier Rebate Program in 2010, which provides incentives for residents who choose water efficient furnace-mounted humidifiers when installing or replacing whole home humidification systems.
- Through the Residential Toilet Replacement Program, water savings from the replacement of older, inefficient toilets with high efficiency models resulted in a CO₂ emissions reduction of 0.24 tonnes/day in 2010.
- As part of the successful marketing plan for the Residential Outdoor Water Efficiency Program, 1,377 Fusion Landscape consultations were performed in 2010. Data was also collected from 423 water meters monitored in the Clarkson community during the 2010 pilot study.
- Two demonstration gardens were constructed in partnership with Sheridan Nurseries, and one with Humber Nurseries. Five Fusion Landscape front yard demonstration gardens were constructed in Clarkson as part of the 2010 pilot study.
- A total of 81 facilities have participated in the Indoor Water Audit Program, with another 25 potential facilities scheduled to participate in 2011. Improvements to facility irrigation in 2010 resulted in a CO₂ emission reductions of 0.13 tonnes/day.

Definitions: GHG - Greenhouse gas kWh - kilowatt hour CO₂ - Carbon Dioxide

ENERGY

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- The energy retrofits for the South Peel Water and Wastewater Treatment Plants and Pumping Stations have been implemented and additional measures are being incorporated into the designs of upcoming capital projects.
- Green building measures were incorporated into the design of the Peel Heritage Complex construction. This building will feature a geothermal-based heating and cooling heat pump system which will enhance energy efficiencies, while reducing consumption of fossil fuels. Once commissioned, energy performance will be tracked, monitored and reported.
- Green building standards were incorporated into the design and construction of the new Peel Paramedic Facilities.
- The Energy Management Plan is being revised and will present a vision for achieving energy sustainability throughout the corporation as energy sustainability is the responsibility of all departments working in partnership.
- A Baseline Study to quantify the Region's GHG emissions for 2007 to 2008 has been completed by the consultant Yield Energy. Targets will be set in the updated Energy and Environment Management Plan.
- Energy audits of 100 Peel-owned buildings have been completed (as per scope of work). A report has been drafted and is under review by stakeholders.
- Building automation systems are being purchased and/or installed at five community recycling centres and three Peel Living high-rise apartment buildings.
- The Landfill Solar Pre-Feasibility Study was completed and a full technical and economic feasibility study will be undertaken in the next phase.
- Solar domestic hot water heaters have been purchased and will be installed at Sheridan Villa Long Term Care Centre and at Peel Police 11 Division and Training Facility.
- 10 kW solar panels have been installed and are operational on Peel Police 11 Division; 30 kW panels are being installed at the Davis Long Term Care Centre; and 10kW panels are being planned for installation at Tall Pines Long Term Care Centre.
- A new two-storey office building and expansion to the fleet service garage and indoor parking is being constructed to LEED (Leadership in Energy and Environmental Design) standards reducing CO₂ emissions by an estimated 160 tonnes and saving approximately 43 per cent in energy costs. The initial investment in energy efficiency will be recovered several times over by the energy savings during the life of these buildings.

WASTE

The Region has a goal of 70% waste diversion by 2016. The following initiatives help to improve air quality in the Region.

- The Waste Wood Feasibility Study (Phase Two) is being explored. Design and tender for the facility has not yet begun.
- The project which sought to use processed bottom ash from the Algonquin Power Energy to manufacture a product is currently on hold.
- The Front-End Recycling Program for Schools is on-going. This program, which is an extension of the Multi-Residential Front-End Recycling Program initiated in February 2009, could lead to additional collection efficiencies resulting in fewer trucks and reduced emissions.
- A program to reuse waste vegetable oil collected by the Region for bio-fuel in fleet vehicles continues to be developed.



peelregion.ca/health/cleanairpeel



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