



Town of Oakville

STATE OF THE ENVIRONMENT REPORT



2012



OAKVILLE

Message from the mayor



Message from mayor
TBA

Table of contents

1.	Introduction	1
2.	Indicators	2
	Goal 1: To sustain and enhance our natural environment	2
	Greenspace and biodiversity	
	Air quality	
	Water quality	
	Climate change	
	Goal 2: To reduce our resource use and waste consumption	7
	Solid waste	
	Energy conservation	
	Water conservation	
	Goal 3: To establish and support an environmentally friendly transportation network	10
	Transit	
	Transportation choices	
	Goal 4: To create and support a healthy resilient community	12
	Healthy communities	
	Green development	
	Goal 5: To foster environmental stewardship through education and community involvement	15
	Outreach events	
	EcoSchools	
	Goal 6: To lead in applying best environmental management practices	17
	Innovative environmental programs	
	Environmental Strategic Plan	
3.	Conclusion	20
4.	What you can do	20
5.	Resources	22
6.	Note for educators	23

1 Introduction



Background

In December 2005, Council approved the town's first **Environmental Strategic Plan (ESP)**. This document was developed in partnership with the community and one of the recommendations was to develop a state of the environment reporting system. In 2008, the town published its first State of the Environment Report (SOER), along with a comprehensive technical background report which set baseline parameters.



In December 2011, Council renewed its commitment to the environment by endorsing the update to the 2005 plan. The update reflects the many achievements made over the first term of the strategic plan and new aspirations for the future as identified by staff, key agencies and the public.

The SOER incorporates indicators that reflect the six goals outlined in the ESP. We are making strides in building baseline data for a better understanding of the town's environment. This will help us determine where we are and what our long term goals will be. It will also provide information on what we're doing well and where we need to improve.



With the growing number of years of baseline data, we can start to see trends. We can start to focus on the specific types of programs and actions to take to improve our performance.



What's new!

This is the fifth edition of the SOER. For this edition, we've updated some indicators and integrated the format to better reflect the updated ESP. We've also included some new resources and updated our "what you can do" section.

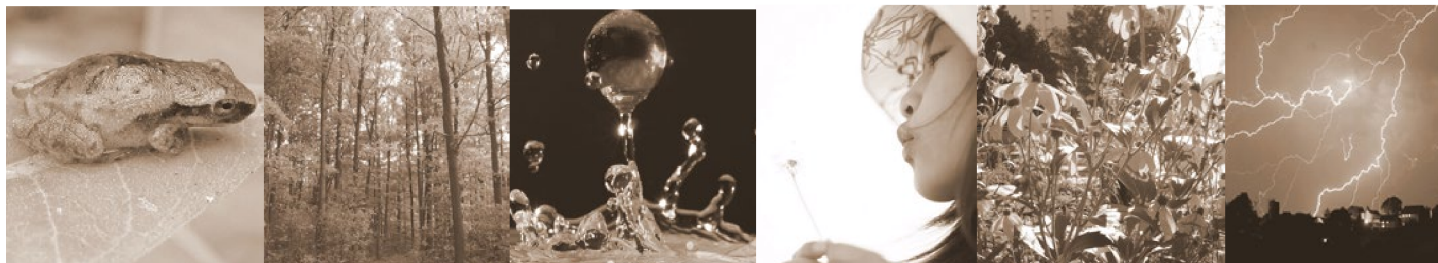
One program that we will be modifying for the future is the use of the Ecological Footprint. This measurement tool was first introduced in 2010 and provided an innovative way to look at factors affecting the environment at a neighbourhood level. A large component of this tool relied on data from the federal census and changes to the collection of information beginning in 2011 will significantly affect the model.

We will continue to use the footprint to assist us with energy based applications and also for the town's corporate footprint. For more information on the town's ecological footprint program, please visit our website at www.oakville.ca/environment/ecological-footprint.html

We hope you will find the information in this report useful. Together, we can make a difference and we hope you will join us in finding ways to improve Oakville's environment.

2 Indicators

GOAL 1: To Sustain and Enhance Our Natural Environment



Objectives

- 1.1 To protect and enhance our biodiversity
- 1.2 To protect and enhance our urban forest
- 1.3 To protect and enhance our waterways
- 1.4 To protect and enhance our air quality
- 1.5 To increase ecological landscaping on private and public property
- 1.6 To reduce and manage the impacts of climate change

Indicators

- Publicly owned green space (total and per capita)
- Trees planted by staff and volunteers
- Ground level ozone (annual average)
- Fine particulate matter (PM_{2.5}) exceedances
- Total suspended solids
- Mean chloride in creeks
- Mean phosphorus in creeks
- Annual precipitation
- Annual average temperature (winter/summer)

Key Data

Greenspace and Biodiversity

Protecting and enhancing Oakville's greenspace is important in sustaining our flora and fauna. Publicly owned land provides opportunities for protection and restoration to support biodiversity.

In 2011, as shown in Figure 1 and Table 1, although publicly owned greenspace is increasing, with increasing population our per capita amount of

greenspace continues to decline. It is expected this trend will continue as we will be seeing population increases for the foreseeable future.

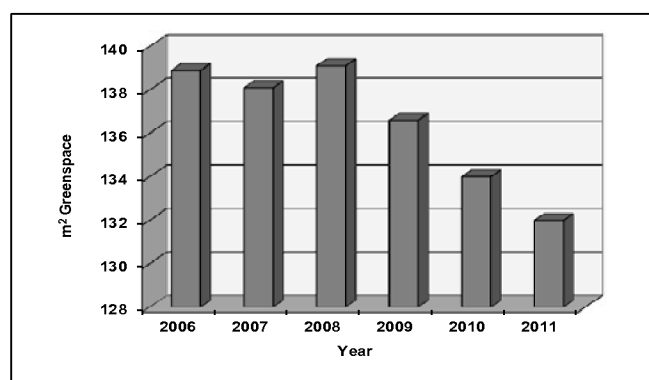


Figure 1: Publicly owned greenspace per capita
Source: Town of Oakville

In 2011, 13.25 ha of publicly owned greenspace was added by the town. In 2006, 17% of Oakville's land base of 78.1 km² comprised publicly owned greenspace. This number rose to 18.3% by 2011.

Table 1: Green space in the Town of Oakville				
Year	Town (ha)	Province (ha)	Conservation Halton (ha)	Total (ha)
2011	1,435	969	10	2,414
2010	1,422	969	10	2,401
2009	1,421	969	10	2,400
2008	1,418	969	10	2,397
2007	1,355	969	10	2,334
2006	1,332	969	0	2,301

Note: Municipally owned greenspace includes community and neighbourhood parks, tableland woodlots, valleys, and undeveloped parkland. Provincial holdings include Glenorchy Conservation Area and Bronte Creek Provincial Park. Conservation Halton has Wildflower Woods.



As outlined in the town's 2006 Urban Forest report (UFORE), trees filter air pollutants and produce oxygen. They provide shelter and food for wildlife and can assist in offsetting impacts from climate change. In recognition of the benefits trees provide, the town has set a goal to achieve a canopy cover of 40% by 2057.

To maintain a healthy tree population, it is important to continuously plant new trees to ensure the replacement of old and dying ones. This is particularly important in the face of threats such as Emerald Ash Borer (EAB) and other invasive species.

As shown in Table 2, between 2006 and 2011, town staff have planted a total of 8,813 trees.

Table 2: Trees Planted by Oakville Forestry Staff

Year	Trees Planted
2011	994
2010	1,497
2009	3,130
2008	1,898
2007	1,294

Total suspended solids (TSS) consist of fine particles of matter found in waterways. These particles are significant carriers of phosphorus, metals, and other hazardous contaminants. Soil erosion is the most common source of suspended solids and levels can become highly elevated during storm events when the water becomes turbulent.

Although there are no established standards for suspended solids, a 2001 Environment Canada/Health Canada assessment report documents toxicity for sensitive aquatic species at 210 mg/L. TSS can negatively impact aquatic life, including fish, by

smothering smaller organisms and eggs, clogging gills and removing oxygen from the water. With increasing development and erosion, coupled with more intense rainfall events it is expected that TSS levels will generally increase in the future without intervention such as increased erosion control measures.

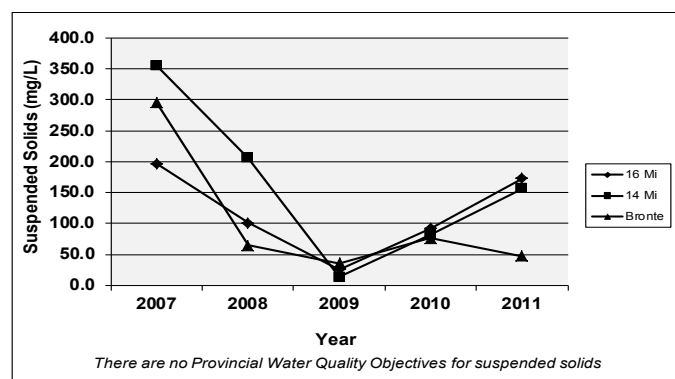


Figure 2: Total suspended solids in Oakville creeks

Source: Conservation Halton

Air Quality

Both ground level ozone and PM_{2.5} (fine particulate matter measuring less than 2.5 microns) have been linked to serious health concerns. Ground level ozone is also responsible for the majority of the smog advisories experienced in the Town of Oakville. According to Health Canada, the health reference level for PM_{2.5} is 15ug/m³. This is the level that has been found to demonstrate quantifiable health impacts in some populations.

Ozone is a secondary air pollutant that is formed when nitrogen oxides (NO_x) react with volatile organic compounds (VOCs) in the presence of sunlight. Therefore, ozone levels tend to vary considerably in response to varying weather conditions. With hotter summers and more cars on the road ozone is expected to trend upwards, however, we have been

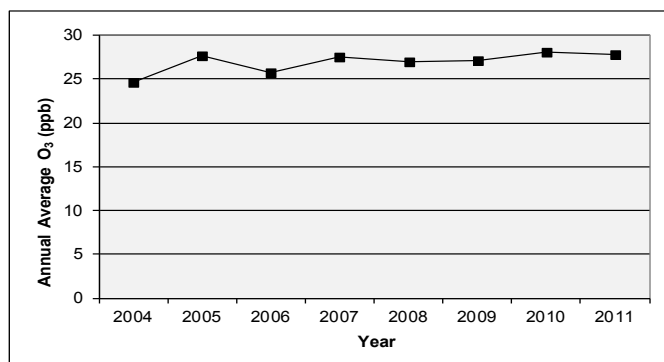


Figure 3: Annual average ground level ozone in Oakville
Source: Ministry of the Environment

seeing generally stable levels as shown in Figure 3. During periods of widespread elevated levels of ozone, it is estimated that more than 50 per cent of Ontario's ground-level ozone comes from the U.S.

PM_{2.5} is produced when fuels and coal are burned or when other air pollutants react with compounds in the atmosphere. As shown in Figure 4, since 2005 there has generally been a decreasing trend in PM_{2.5} levels in part likely due to the decommissioning of coal plants in the province, however, since the low point seen during the economic recession in 2009, there has been an upward trend.

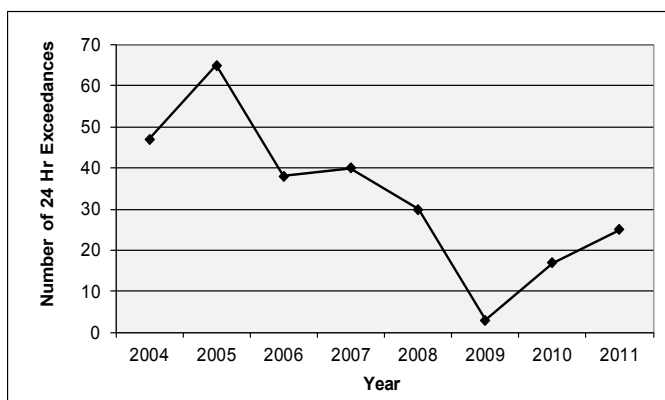


Figure 4: Annual 24 hour exceedance above 15ug/m³ of PM_{2.5}
Source: Ministry of the Environment

Water Quality

Chloride and phosphorus concentrations are important to monitor since these reflect impacts from urban and rural runoff (eg. road salts and fertilizers). The provincial Water Quality Objective (PWQO) for phosphorus to limit excessive plant growth is 0.03 mg/L. For chloride, the PWQO is 250 mg/L.

Phosphorus is a significant water quality issue in Oakville and a major cause of algae blooms. Sources include lawn fertilizers, atmospheric deposition, automobile exhaust, soil erosion, animal waste, detergents and wastewater treatment plants.

As shown in Figure 5, in 2011, phosphorus levels in all three creeks were above PWQO standards. The lower levels seen in 2009 may have been due to the decreased economic activity and the general trend to decreasing precipitation.

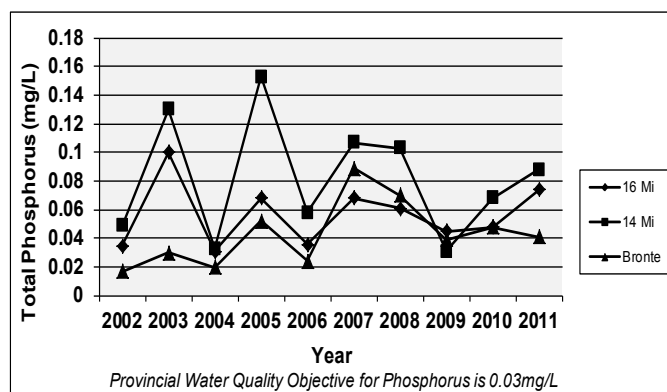


Figure 5: Mean phosphorus levels in Oakville creeks
Source: Conservation Halton

Chloride levels in creeks are significantly impacted as a result of road salting during winter months. As shown in Figure 6, chloride levels decreased in 2011 and remain below the PWQO of 250 mg/L. Significant improvements to salt use in winter months and warmer winters may be contributing to the positive results seen.

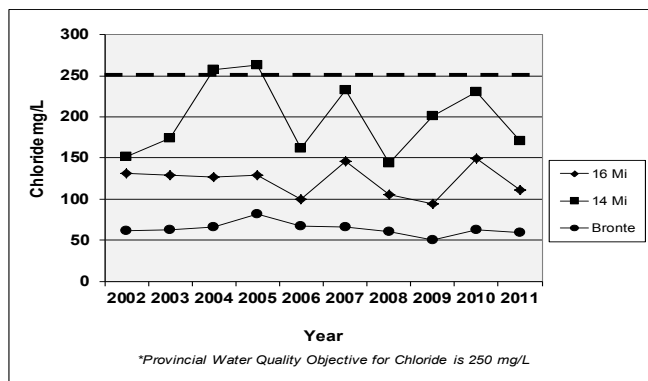


Figure 6: Mean chloride levels in Oakville creeks
Source: Conservation Halton

Climate change

Climate change is expected to lead to greater variations in our weather patterns and an increase in extreme weather events. By measuring rainfall and temperature, we can evaluate some of the changes that are taking place over time.

Averaging annual temperatures may hide the type of information we're looking for since climate change is expected to produce more extreme temperatures. By taking the average temperature in the summer months (June, July, August) and the winter months (December, January and February) we can better evaluate variations that occur.

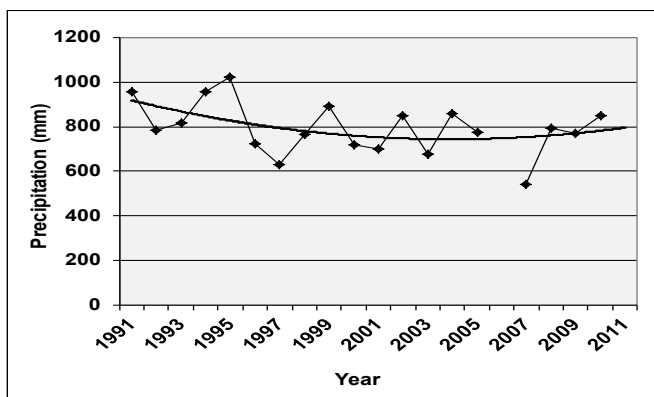


Figure 7: Oakville Annual Precipitation
Source: Environment Canada

Generally, the trend toward warmer summers and lower annual precipitation in Oakville is consistent with what is being seen throughout the province, although 2011 saw an increase in precipitation over 2010 (Figures 7 and 8). There has also been a trend of increasing winter temperatures since 2007 (Figure 9).

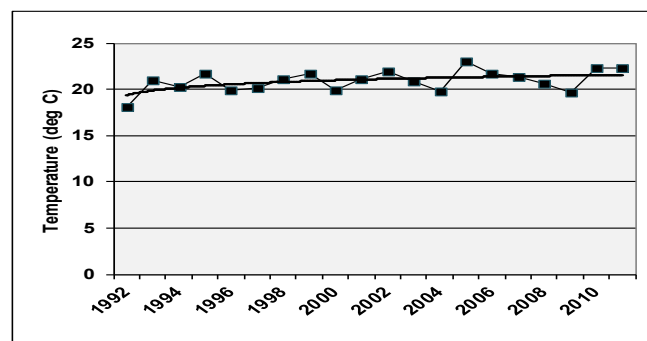


Figure 8: Oakville's average summer temperature
Source: Environment Canada

It is important to distinguish between weather and climate. Weather is highly variable and changes from year to year. Climate looks at average weather patterns over decades or centuries to see what trends are occurring.

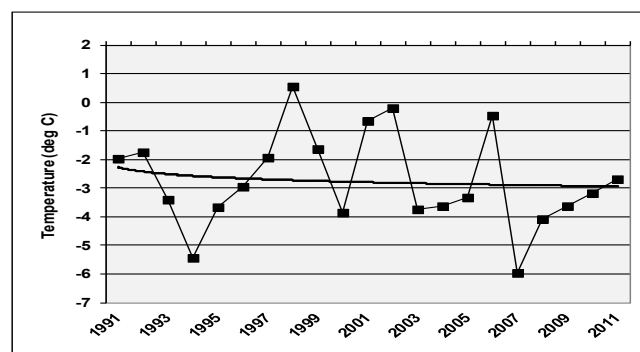


Figure 9: Oakville's average winter temperature
Source: Environment Canada

While we are tracking weather from year to year, it will take some time to see what changes in the local climate are occurring. Years where weather data was incomplete have been excluded in the charts.



What we're doing



The town partnered on a number of habitat restoration projects in 2012 including the construction of a wetland in the Glenorchy Conservation area and enhancements to South Shell Park, a major stopover for migratory birds.



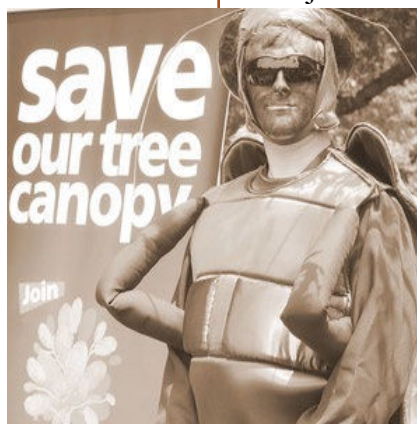
The Town of Oakville and its partners used leading edge technology to identify, catalogue and map public (town-owned trees) in Oakville, including ash trees, to create a tree inventory. To see the results and whether the public ash trees in your neighbourhood are receiving treatment, please visit www.oakville.ca/residents/ash-tree-locator-map.html



Volunteer groups such as OakvilleGreen/Ground Breakers, Field and Stream Rescue Team and Evergreen contribute significantly to town tree and shrub plantings. Between fall 2011 and spring 2012, OakvilleGreen planted 925 native trees and shrubs and in April 2012, 300 seedlings were planted in partnership with the Joshua Creek Residents Association and Holcim Canada.



A by-law to assess and control major emissions of PM_{2.5} in Oakville was passed in 2010 by town council. In 2009, there were 13 major emitters. As of 2012, six facilities



The town has an extensive emerald ash borer management plan in place to combat this invasive species

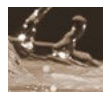


Workshops were held in 2011 and 2012 to assist those affected by the new Health Protection Air Quality By-law

reduced or re-evaluated their emissions to below the major emission thresholds and six existing major emitters remain. Four facilities have submitted their application for approval under the by-law and two facilities are engaged in the Major Emission Reduction Strategy, which would reduce their emissions to below major emission thresholds in 2013. One proposed major emitter has been approved. For more information visit www.oakville.ca/environment/health-protection-air-quality.html



The Town of Oakville is one of the 12 'early adopter' municipalities in Canada to create a Climate Change Adaptation & Mitigation Strategy by implementing ICLEI's (Local Governments for Sustainability) milestone framework. The Town of Oakville has also received a Recognition of Achievement Award at the GTA Clean Air Council's Clean Air and Climate Change Summit for meeting approximately 80 per cent of the Inter-governmental Declaration on Clean Air and Climate Change targets.



In 2012, the town participated as a key partner in a study to inform the province's development of a municipal water sustainability plan. The goal of this work is to more effectively manage municipal water, stormwater and wastewater services through integrated sustainability planning to protect and enhance our water resources.

GOAL 2: To Reduce Our Resource Consumption and Waste Production



Objectives

- 2.1 To reduce dependence on fossil fuels
- 2.2 To reduce energy use and greenhouse gas emissions
- 2.3 To reduce waste and increase recycling and reuse
- 2.4 To reduce our water consumption

Indicators

- Natural gas use per sector
- Electricity use per capita
- Natural gas use per capita
- Waste to landfill and diverted
- Residential waste generated per capita
- Water consumption per capita
- Industrial, commercial & institutional water use

Key Data

Energy Conservation

By tracking the amount of energy used by the community, we will be able to assess our energy efficiency over time, and where improvements can be made. We also need to look at reducing the impact of our energy production.

We expect that an increase in population will result in an increase in total energy use which is why per capita data provides the best information on changes at the individual level.

Using a base year of 2004, as shown in Figure 10, residential per capita electricity use increased between 2004 and 2008 and steady decreases since the 2008 peak have seen a return to 2004 levels. While this is positive and indicates growing consumer awareness and uptake of energy saving behaviours and technology, because of the growing population our overall electricity use is remaining relatively constant.

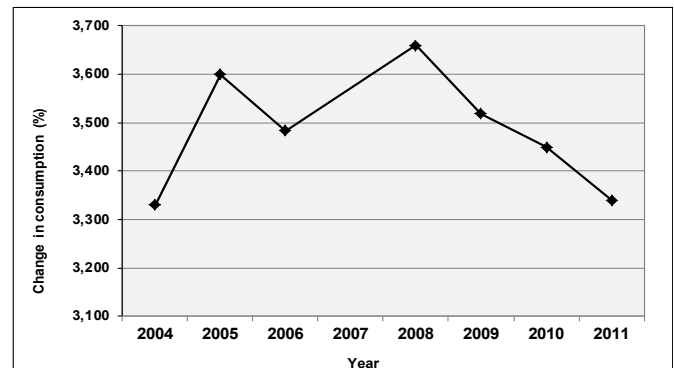


Figure 10: Per capita electricity consumption

Source: Oakville Hydro

Gas consumption is another component of our energy use and provides a majority of the residential heating in Oakville. As shown in Figures 11 and 12 residential consumption increased, however, both commercial and industrial use has remained relatively constant. Weather can impact gas use in the residential sector, however, temperature data indicates that 2011 was a warmer winter than 2010. Further investigation will be needed to determine a reason for the increase in gas use seen in 2011.

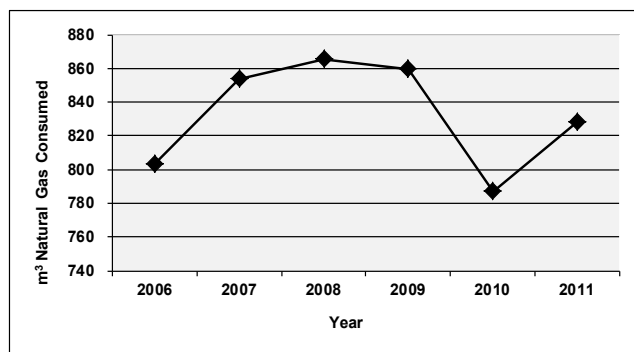


Figure 11: Residential per capita natural gas consumption
Source: Union Gas

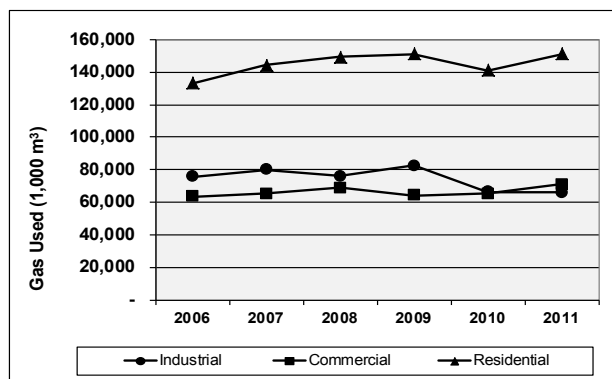


Figure 12: Residential per capita natural gas consumption
Source: Oakville Hydro

Solid Waste

The amount of waste diverted from landfills provides a measure of the effectiveness of our efforts to reduce, reuse and recycle. Waste going to landfills indicates the degree to which resources are wasted. The amount generated per capita helps to show the public's participation in reducing their waste.

As shown in Figure 13, per capita residential waste generation has remained relatively steady at around 350 kg per person, although waste diverted increased in 2008 when Halton Region introduced composting through the Green Bin program. While the introduction of the green bin has helped consumers reduce the amount of waste going to landfill, overall

our generation of waste materials has not significantly changed over time.

Table 3: Oakville waste to landfill and diverted (Tonnes)

Year	Landfill (T)	Diverted (T)	Total (T)
2011	27,717	36,062	63,779
2010	28,402	36,843	65,245
2009	36,076	27,907	63,983
2008	29,317	34,540	63,857
2007	39,352	22,456	61,808
2006	40,635	24,301	64,937

An increasing population has resulted in overall increases of waste being generated. Options to improve our performance on this indicator would be either to reduce our overall consumption and waste or increase our recycling and waste diversion rates.

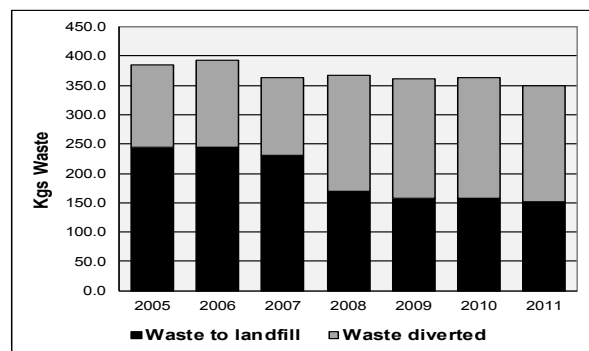


Figure 13: Residential per capita waste and recycling
Source: Halton Region

Water Conservation

Efficient use of water is good for the environment as it reduces our impact on water resources and reduces the energy required to treat and transport the water. It is also good for the economy because it is cheaper to conserve water than it is to build new treatment capacity. Studies show that water efficiency can cost less than new infrastructure to provide the same amount of water.



Table 4: Oakville Residential Water Consumption (millions of Litres)

Year	Millions of Litres	Year	Millions of Litres
2011		2007	165.2
2010	151.5	2006	151.7
2009	150.3	2005	163.3
2008	149.3	2004	153.8

As shown in Table 4, despite a population increase of 18% since 2002 total residential water use has remained relatively constant over time and per capita use has gone down significantly, particularly since 2007 (Figure 14). Several factors may contribute to this trend, including the continued water reduction strategies offered by the region and town. These include the Outdoor Water Use Education Program and the annual rain barrel sale held each spring.

Figure 14: Water. WAITING FOR DATA

Source: Halton Region.

Figure 15: Water. WAITING FOR DATA

Source: Halton Region.

The trend to hotter and drier summers can contribute to increased water use and it will be particularly important in coming years to monitor this.

What we are doing



As part of the Partners for Climate Protection program to reduce greenhouse gas emissions, the town completed a community and corporate energy reduction strategy and achieved milestone three of a five milestone process. Currently, only 87 of 225 municipalities have achieved milestone three or higher.



Halton Enablers of Renewable Energy (HERE) works with homeowners and businesses to help decrease their use of fossil fuels. HERE holds workshops and renewable energy tours to help educate the public about renewable energy programs and technologies available. The town is pleased to work with HERE through joint workshops and outreach initiatives.



In 2012, Oakville received top honours as the first municipal marina in Ontario to achieve the Clean Marine Partnership's Five Green Leaf Anchor Diamond rating for its overall operation of Oakville and Bronte Harbours. Oakville was previously awarded a Four Green Leaf Anchor rating in 2009. The town has implemented a number of sustainability initiatives including enhanced lighting at the harbours to reduce overall energy consumption, the addition of a new recycling centre at Bronte Harbour, and the upgrade to hand dryers in the washroom facilities at both harbours.

GOAL 3: To Establish and Support an Environmentally Friendly Transportation Network



Objectives

- 3.1 To enhance public transportation within and connecting to Oakville
- 3.2 To support bike and walking path infrastructure and connectivity
- 3.3 To encourage the use of alternative modes of transportation
- 3.4 To promote and use transportation demand management (TDM)

Indicators

- Oakville Transit trips per capita
- Oakville Transit net cost per passenger trip
- Personal vehicle registrations
- Population growth vs vehicle ownership

Key Data

Transit

We are measuring the number of times a year, on average, residents took Oakville Transit and the cost per passenger trip.

Generally, buses are more fuel efficient than automobiles. Burning one litre of gasoline generates two kgs of carbon dioxide (CO₂). Using a conservative estimate, the average car commuter generates at least 3,300 kg of CO₂/year.

In 2009 Oakville Transit introduced new route designs and numerous service improvements which has resulted in increased ridership as shown in

Figure 16. Ridership over a 12 month period is now at approximately 3 million.

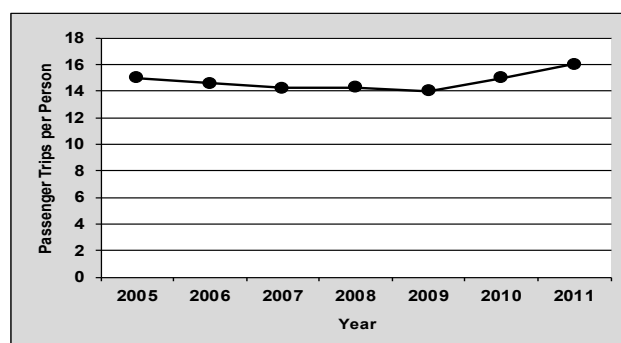


Figure 16: Oakville Transit passenger trips per capita
Source: Town of Oakville

As seen in Figure 17, while operating costs have increased due to rising labour, service and fuel costs, the trend has levelled since 2009. Initiatives such as alternative fuel/hybrid buses, increased ridership strategies and partnerships with organizations such as Halton Region and Sheridan College will contribute to further stabilizing costs in the future.

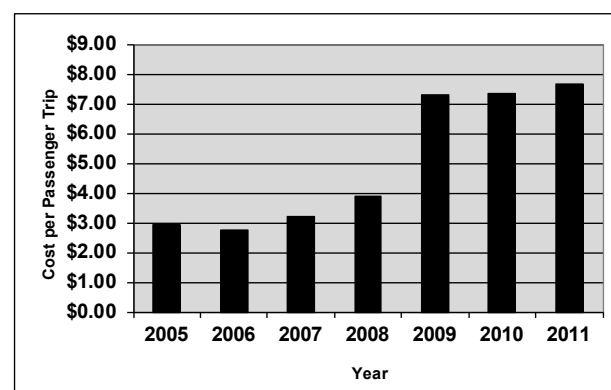


Figure 17: Oakville Transit net cost per passenger trip
Source: Town of Oakville



Transportation Choices

Transportation choices depend on commuting distance, accessibility of alternative transportation modes such as bicycle lanes and the availability of options such as Transportation Demand Management (TDM).

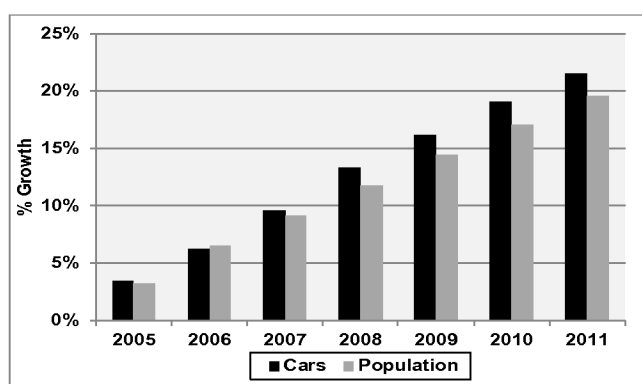


Figure 18: Population growth vs vehicle ownership in Halton
Source: Ontario Ministry of Transportation

Cars can provide an easy means of travel, however their cost economically and environmentally is high. According to Statistics Canada, over 80% of residents use a personal vehicle for their commute. Figure 18 shows the relationship between population and vehicle ownership. The data shows that car growth has generally outpaced population growth. Between 2009-2010, this has stabilized. However, as seen in Figure 16, increases in population mean that the overall number of vehicles has still been increasing.

We are also looking at the number of personal vehicles owned. As seen in Figure 19, this value continues to rise. In 2009, the town developed an Active Transportation Master Plan (ATMP). This sets out a plan for increasing the accessibility and use of alternative transportation modes such as walking and bicycling.

To continue to support a desired level of active

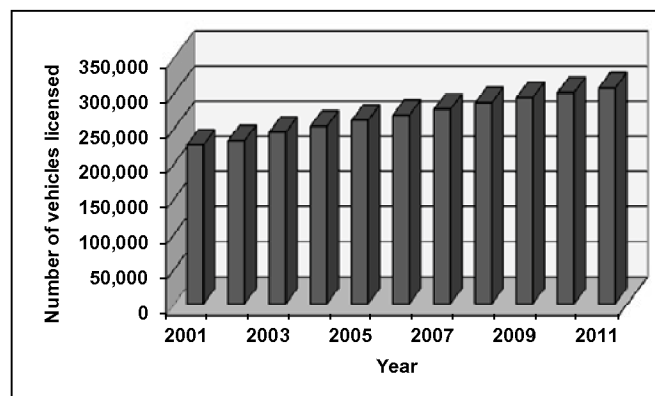


Figure 19: Personal vehicle registrations in Halton
Source: Ontario Ministry of Transportation

transportation (cycling and walking), approximately 31 kilometres of active transportation facilities (i.e. on-road cycle lanes, signed cycle routes, multi-use trails) were implemented within the town in 2011 and another 30 km was completed in 2012.

In total, 266 kilometres of cycling, sidewalk and multi-use trails projects have been proposed through the ATMP to be completed by 2019.

What we are doing



In 2012, the town completed its transportation master plan, *Switching Gears* which aims to develop a more balanced transportation system that provides a variety of travel options in Oakville. It's about sustainable transportation options including public transit, walking, cycling and ride-sharing along with strategic roadway improvements to ensure the safe, convenient and efficient movement of people and goods.



Oakville Transit is undergoing a re-design of their website to better serve the public and provide up to date information on routes. The new site is set to launch in December 2012.

GOAL 4: To Create and Support a Healthy Resilient Community



Objectives

- 4.1 To improve the health and safety of Oakville's neighbourhoods
- 4.2 To foster and sustain an environmentally sustainable urban form
- 4.3 To support green building practices
- 4.4 To support outdoor recreational opportunities in Oakville

Indicators

- Community garden plot rentals
- Adopt-a-Park (ha)
- Adopt-a-Trail (kms)
- Kms of trails per 1,000 people
- Outdoor recreational facility space per 1,000 people
- Housing completions
- Building Permits (GFA)

Key Data

Community Health & Green Space Access

We are measuring indicators for initiatives that will result in more ecologically friendly neighbourhoods. These include community garden plots, access to open space, the Adopt-a-Trail program and the Adopt-a-Park program.

These indicators can help assess some of the elements that create visually pleasing and environmentally friendly landscapes. For example, community

gardens offer opportunities for urban agriculture and beautification for residents who might not have access to land. It also offers social opportunities and produce may be donated to foodshare programs which creates even further benefits. An extensive body of research exists demonstrating the direct link between a healthy environment and human health.

There are approximately 150 km of trails and 1,400 ha of parkland available for adoption. As noted in Table 5, numbers are relatively stable. In 2011 the number of people involved in these programs increased overall as shown in Table 5.

Table 5: Oakville's "Adopt-a" programs

Adopt-a Park		
Year	Area (ha)	Participants
2011	208	49
2010	212	46
2009	195.5	42
2008	187.7	46

Adopt-a-Trail		
Year	Length (kms)	Participants
2011	82	89
2010	71.57	83
2009	67.22	78
2008	75.8	83

Community garden plots are also available through the town and Bronte Creek Provincial Park. For a fee, residents can rent a plot of land on an annual basis. As shown in Figure 20, in 2011 a total of 179 plots were available at four locations.



As population increases and there is a greater focus on “local food”, it is likely future demand will increase.

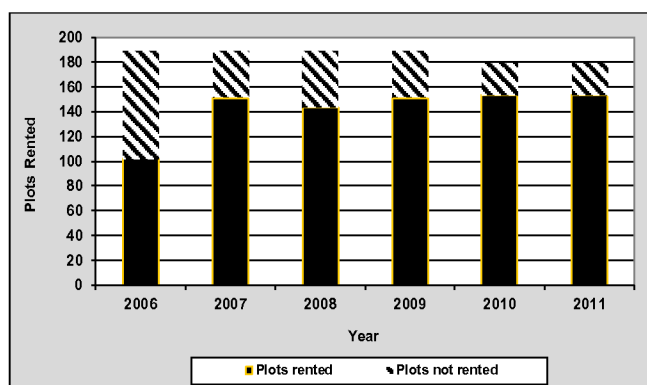


Figure 20: Community garden plot rentals in Oakville
Source: Town of Oakville and Ministry of Natural Resources

Oakville has over 2,400 ha of publicly owned greenlands. In surveys conducted by the town, these resources are consistently cited by residents as a cherished amenity.

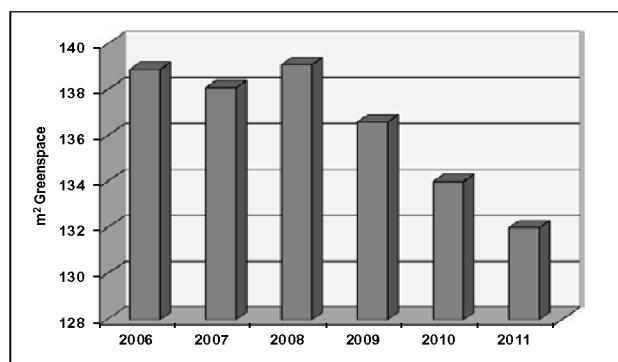


Figure 21: Outdoor recreational facility space per 1,000
Source: Town of Oakville

Our outdoor recreational facility space includes built structures for community recreation and leisure such as tennis courts, splash pads and outdoor swimming pools. Outdoor recreational facilities per capita have been decreasing (Figure 21), in part due to increasing population and the greater focus in recent years on adding indoor sports facilities for soccer and skating.

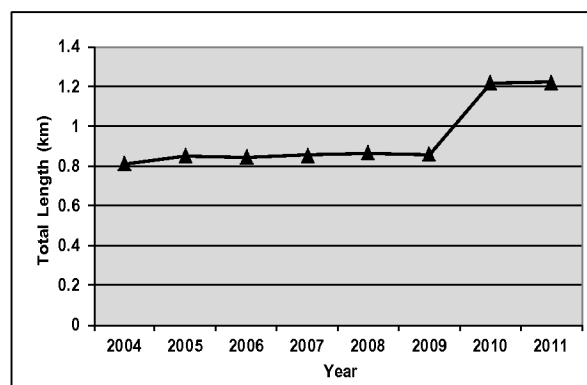


Figure 22: Total kms trails per 1,000 people
Source: Town of Oakville

Trails are another important amenity that connect people with the outdoors. Oakville has one of the most extensive trail systems per capita in Ontario, although with our increasing population per capita, availability has declined despite annual additions of trail infrastructure (Figure 22). In 2011, two kilometres of trail were added to the system.

Green Development

Denser development, if planned appropriately, uses less resources, is transit friendly and supports a vibrant community. Ensuring an appropriate mix of housing is important in protecting our environment.

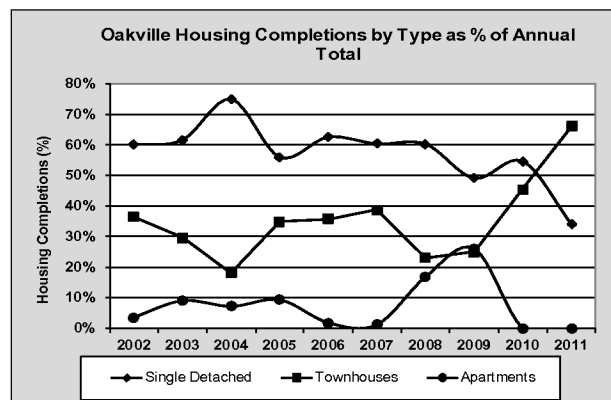


Figure 23: Oakville Housing Completions
Source: Canada Mortgage & Housing Corp.



In 2011, there were 569 housing completions in Oakville, of which 191 (33.6%) were singles and and 378 (66.4%) were row dwellings (townhouses). There were no apartment completions. As shown in Figure 23, since 2002 housing densities have been moving away from single family to more dense forms. Townhouse development increased significantly and is now significantly exceeding single detached construction.

The Halton Regional Official Plan (ROPA 38) introduced a housing density target for new housing, stating that at least 50% of new housing units produced annually in Halton be in the form of townhouses or multi-storey buildings. Depending on the lot size and type, townhouse densities can rival that of high rise densities and can also offer more affordable housing choices.

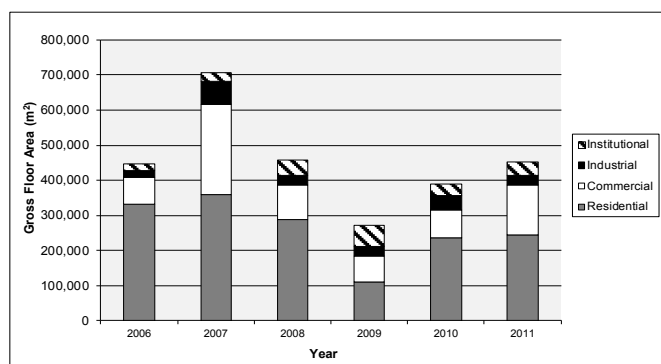


Figure 24: Oakville building permits issued
Source: Town of Oakville

As shown in Figure 24 by the number of building permits issued, building activity resumed in 2010 and continued to climb in 2011. Commercial activity provided the majority of the increase seen. As development increases, it will be even more important to ensure we build efficiently.

What we are doing



With the popularity of the town's community garden plot program, an additional 22 new plots are being opened at Kingsford Gardens in 2013.



In spring 2012, the Oakville Sustainable Food Partnership joined with the town to develop a community orchard at Kingsford Gardens. This site will be used as a demonstration orchard for schools and groups in the area. This is the first community orchard in both the Town of Oakville and Halton Region, and consists of over 25 various fruit trees and over 20 berry bushes.



As of 2012, the town has built three LEED certified green buildings: Sixteen Mile Sports Complex (2010), the new Oakville Transit Facility (2011) and the Queen Elizabeth Park Cultural and Community Centre (2012). These buildings incorporate sustainable features such as energy saving technologies and components made of renewable, local and/or recycled materials.



Oakville maintains 200 km of trails at a cost of \$260,000 which is one of the highest service levels among Ontario municipalities. Oakville's trail system not only provides recreational opportunities, but information about environmental aspects, historical and educational information through the use of trail guides and kiosks.



Coyotes play an important role in Oakville's ecology. They are sometimes seen along trails and the town has developed a comprehensive program to reduce conflict situations. For more information visit www.oakville.ca/environment/featured-wildlife.html

GOAL 5: To Foster Environmental Stewardship Through Education and Community Involvement



Objectives

- 5.1 To support and enhance a public education strategy to increase environmental awareness and stewardship
- 5.2 To support and enhance programs to increase environmental awareness and stewardship
- 5.3 To support and enhance the town's environmental indicators and monitoring programs

Indicators

- Environmental Policy department outreach and education activities
- Oakville certified EcoSchools

Key Data

Outreach and Education

Education and outreach programs are key components towards increasing our community's awareness of environmental issues. Monitoring the number of environmentally related public outreach events that are put on by the Town of Oakville each year will help assess the town's efforts in raising the profile of the environment and the need for stewardship with residents and businesses.

As shown in Figure 25, the town holds a significant number of outreach events. In 2008, a significant spike was seen due to outreach around the implementation of the town's pesticide by-law. While the number of

events attended has shown a decline, the scale of the events hosted has been increasing, creating better efficiencies with staff resources and numbers of people reached per event.

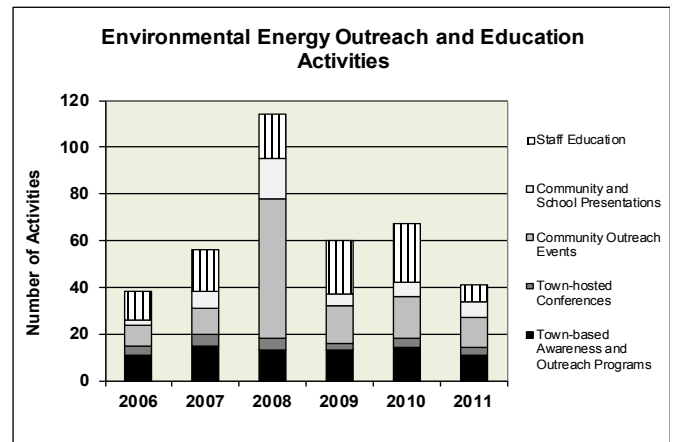


Figure 25: Environmental Policy department outreach Source: Town of Oakville

EcoSchools

The EcoSchools program is a program that looks at the environmental management and education in schools. School boards designed this program to incorporate environmentally friendly actions within the school setting. A full outline of this program is available at www.ontarioecoschools.org.

As shown in Figure 26 significant progress has been made to move Oakville schools towards environmental sustainability. For the 2011-2012 school year, a total of 35 Oakville schools were certified. A total of 16 schools achieved Gold status, 17 achieved Silver and 2 obtained Bronze. There was a decrease in certification from last year, however, almost all of these were in the Bronze category.

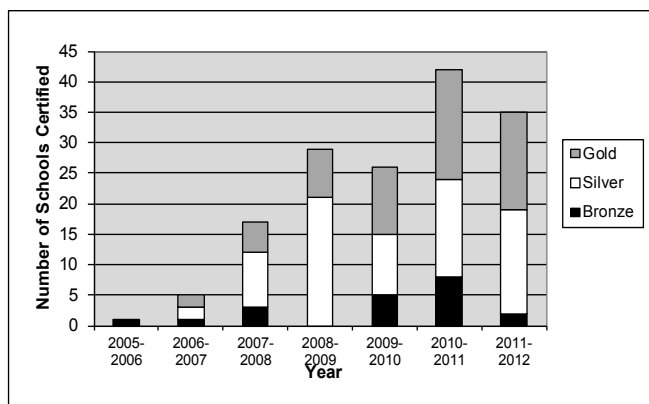


Figure 26: Oakville EcoSchools

Source: Halton District School Board and Halton Catholic District School Board

Halton Region hosts EcoSchool celebrations in October each year to recognize the achievements of Halton's schools. Many positive changes have been realized through the EcoSchool program.

What we're doing



As part of the development of the town's community sustainability initiative, a residents panel was hosted over two weekend sessions. A group of 25 randomly selected participants attended workshops on sustainability and provided feedback that will be used as a key input into the town's community plan.



Five students from Joshua's Creek public school won a competition through the Ontario Society for Environmental Education and will see their environmentally themed artwork featured on the cover of upcoming issues of the organization's monthly journal.



Through the Oakville Environment Fund, administered through the Oakville Community Foundation, \$5,000 was granted to the Oakville Sustainable Food Partnership for their Growing and Sharing Community Garden project.



The Recycling Council of Ontario has awarded grants to two Oakville elementary schools for their eco-initiatives. Our Lady of Peace and St. Andrew Catholic schools each received \$1,000 from the organization to use on school-based environmental projects. The schools participated in the annual Waste-Free Lunch Challenge during Waste Reduction Week last year. Across Ontario, the challenge involved 800 schools that diverted 25 tonnes of lunch material from entering the landfill.



In 2012, the town partnered with Conservation Halton for the first Halton Forest Festival that was held at the Mountsberg Conservation Area. Based on the highly successful Halton Children's Water Festival model, this event provided hands-on forestry and biodiversity themed educational activities for Halton students in grades six and seven.



Public day at the Halton Forest Festival

GOAL 6: To Lead in Applying Best Environmental Management Practices



Objectives

- 6.1 To be leaders in research, development and implementation of innovative environmental programs**
- 6.2 Promote partnerships with local businesses, schools and organizations**

Indicators

- Towards Zero Waste
- Sustainable Green Fleet
- Sustainable Purchasing
- Environmental Strategic Plan implementation status

Key data

The town has incorporated a number of innovative environmental programs. Tracking the progress of these programs provides insight into their value and the importance of making changes to town operations to assist in making them more sustainable.

Towards zero waste

The Towards Zero Waste procedure was implemented in 2009 and is a comprehensive waste reduction strategy for the town's operations. In 2012, the Recycling Council of Ontario presented the town with a gold level Ontario Waste Minimization Award. As a result of the Towards Zero Waste program, a number of achievements have been realized as shown in Table 6.

Table 6: Towards Zero Waste achievements

Recycled 413 cell phones and collected 11 kilograms of batteries through the Call2Recycle program.
Collected over 200 pounds of wine corks for the Jelinek Cork Group to recycle.
Sent 31,056 litres of motor oil for re-refining, saving 51 tonnes of greenhouse gas emissions in one year.
Collected 45 gallons of used anti-freeze from boat owners at the town's harbours hazardous waste collection site as part of the Clean Marine program.
In spring 2011, the town collected two 15-yard bins of shrink wrap that was later given to a printing processor who was able to use it in colour printing processing.

Sustainable green fleet

The Sustainable Green Fleet Procedure was introduced in 2009. It involves a number of initiatives that save fuel and increase the efficiency of the town's fleet. Examples include restricting staff in town vehicles from using drive throughs, a driver training program (DriveSmart) and enforcing anti-idling rules.

Green Fleet procedures also include supporting the most fuel efficient vehicles, including electric, hybrids and right sizing. Right sizing means selecting the smallest most fuel efficient vehicle, based on the task. Since 2006, 12 hybrid vehicles, and two right sized vehicles have been added to the Town of Oakville's fleet.

In 2011, the town joined the EV 300 program to assist with integrating electric vehicles into their fleet. An EV feasibility study for the town fleet was completed and the first fleet electric vehicle and charging station will be coming online in 2013.



Sustainable purchasing

The Sustainable Purchasing Procedure (SPP) was also introduced in 2009. This involves an educational and resource program for staff on selecting “green” products and incorporating sustainable language in contracts with vendors. A number of positive changes have been seen as a direct result of this program as outlined in Table 7.

Table 7: Green purchasing improvements

Existing product	Green replacement
Forest Stewardship Council (FSC) certified paper 100% virgin paper	FSC with minimum 30% recycled content. On a smaller scale, Environmental Policy is piloting the use of paper with 100% postconsumer (PC) content, chlorine free, produced with green energy for specific environmental publications.
Bottled water	Water bars (3) for use at town events to support delivery of municipal tap water to the public and at special events.
Paper towels	Energy efficient hand dryers installed at harbour washrooms to replace paper towels. Reduces the need for paper towels which end up in regular garbage stream since composting is not available at the harbours.
Paint	Incorporate the use of recycled paints; use latex paints and water based solvents; use of paints with low or no amounts of volatile organic compounds; use of paints with natural solvents, pigments, resins and additives.

Environmental Strategic Plan

The town’s Environmental Strategic Plan was endorsed by Council in December 2005 with a subsequent update approved in December 2011. The ESP provides a road map for the town in working towards environmental goals. Each year, staff report on the progress of the implementation of this plan.

Many of the recommended actions outlined in the 2005 ESP were carried over in the update as they are ongoing successful programs. The implementation of the updated ESP builds on the original and reflects the work of both the town and its community partners. To learn more about the ESP, visit the town’s website at www.oakville.ca/townhall/environmental-strategic-plan.html

As of 2011, the implementation of the updated ESP saw the following actions either complete or underway:

Table 8: Environmental Strategic Plan Implementation

Action	Implementation rate
Ongoing (OG) actions are existing programs and/or policies that will be continuing (total of 63)	100%
Short Term (ST) actions are recommended for completion by 2014 (total of 28 actions)	50%
Medium Term (MT) actions are recommended for completion by 2013-2016 (total of 22 actions)	41%
Long Term (LT) actions are recommended for completion beyond 2016 (total of 9 actions)	33%

In conjunction with residents and stakeholders, the town is now developing a community sustainability plan. The plan will be an adaptive platform that defines the way for the community to achieve sustainability for present and future generations, integrating economic, environmental, cultural and social aspects. The long-term goal of the community-led plan is to achieve strong community partnerships and leadership, strengthen community resiliency, implement solutions for change and enhance the quality of life in Oakville.



Summary

Oakville is fortunate to have a wealth of natural features such as Lake Ontario, the Niagara Escarpment and numerous creeks and greenspaces within easy reach. Our environment is a key component that goes into making our town vibrant and attractive to businesses and residents. In the town's 2011 Citizen's Survey, 83% of respondents indicated they were pleased with the town's efforts to protect the environment and it was noted in discussions with residents at an open house that even further efforts would be welcome. While there wasn't a category strictly for the environment, a full 91% of respondents also indicated that they were very satisfied with the state of the town's green space and parks.

The SOER can assist us in continuing to improve our environment by highlighting where we are seeing positive changes and where we need to do more. In 2011, water quality in the Fourteen and Sixteen Mile creeks showed declines, however, Bronte creek showed improvements. Air quality was also generally decreasing slightly with ozone levels remaining steady and fine particulate matter ($PM_{2.5}$) showing increases. As we saw from the 2010 data this provides ongoing evidence that the decline in the economy in 2009 was likely the driving force behind improvements to air and water quality that year. This correlation is not unexpected and demonstrates the impact that our actions can have on our environment. Our behaviours are also showing mixed results. While our transit use continues to climb, we also continue to outpace population growth with our vehicle registrations. Similarly, we have had continuous declines in per capita electricity use, while our use of natural gas showed a spike in 2011 despite a warmer winter.

While the data we are tracking is local, our choices have an impact not just on ourselves but also beyond our community. The town recognizes that while its own efforts are critical, the supportive actions of residents, community partners and other levels of government are crucial in order to see any appreciable improvements which is one of the driving factors for the development of a community sustainability plan. Over time, changes will not likely be the result of one action or program but rather through a combination of effects. In addition to town based programs and initiatives, changing social norms, changes in consumption patterns due to increasing fuel and energy prices, global climate change and changes in federal or provincial policies will play significant roles.

The actions of individuals, families and businesses are critically important. For that reason the SOER includes a *What you can do* section at the end of the book with a full list of resources that residents can utilize. We hope that you find this useful and do what you can to reduce your environmental impact.

4 What you can do



Reduce your impact on natural environments

- Remove invasive species widely found in Oakville such as Dog Strangling Vine and Garlic Mustard. Contact Conservation Halton for more information or see www.conservationhalton.on.ca/ShowCategory.cfm?subCatID=1114
- Think twice before cutting a tree down. Trees offer shade in the summer and protection from winter winds. Check out the town's Private Tree By-law at www.oakville.ca/residents/trees-protection-removal.html if you're thinking of cutting down a tree greater than 15cm diameter.
- When draining pool water, ensure chemicals have not been added for at least 10 days prior.
- Don't wash cars on driveways.
- Choose household products with little or no phosphate.
- In the winter, use either low or no chloride ice melt.
- Don't dump hazardous waste into sewers or drains. See www.halton.ca/waste to find out proper disposal locations.
- Visit <http://epa.gov/climatechange/wycd/> for tips and tools to reducing your GHGs.

Support healthy neighbourhoods

- Consider implementing a compost program not only at your home, but at your school or work.
- Grow your own garden for a personal supply of fresh fruits, herbs, and vegetables.
- Participate in one of the town's beautification programs or clean up events.
- Enjoy Oakville's trails. Get out for a hike with family and friends. For great walking resources

in the town, visit <http://www.halton.ca/cms/One.aspx?portalId=8310&pageId=12410> or contact the town for a copy of the Cycle and Trails guide.

- Sign up for an outdoor recreation course or activity. The town's Recreation and Culture department offers a catalogue of programs and events twice a year. You can also check it out online at www.oakville.ca.
- Consider adopting a trail or park. Help keep our parks and trails looking great and get outside for some fresh air and exercise. Visit www.oakville.ca/culturerec/adopt-a-programs.html
- Add "green" features to your home renovating.

Reduce your resource consumption

- Choose washable and refillable containers with little packaging for meals away from home.
- Purchase a stainless steel water bottle in place of disposable plastic bottles.
- Contact Halton Region for recycling and composting bins.
- It is estimated that 17% of a typical garbage bag in Halton is material that could go in the Blue Box. Take the time to separate your garbage into recyclables, compost and garbage.
- Bring your own re-usable bags when shopping.
- Consider belongings you no longer use - can you refurbish, donate or repair them?
- Set your thermostat to 25°C or higher during the summer, and 20°C or lower in the winter.
- Take advantage of the Watt Not Waste Not program to reduce energy, offered through Oakville's libraries. Visit www.oakville.ca/environment/energy-conservation.html to learn more.



What you can do, cont.



- Purchase a portion of your energy through green sources. Visit www.oakvillehydro.com or www.bullfrogpower.com
- Consider adding solar energy or geothermal technologies to your home. Both technologies include government incentives and a financial return. Contact Halton Enablers of Renewable Energy (HERE) for information http://haltonenvironment.com/?page_id=55
- Replace incandescent light bulbs with LED or fluorescent light bulbs to increase energy efficiency and save electricity costs.
- Only use dishwashers and laundry machines when they are full and at night to reduce water waste and save on energy costs.
- Incorporate xeriscaping in your garden (plants and landscaping that don't require much water).
- Install low flow shower heads and toilets.
- When making purchases, choose "green" whenever possible.
- If you commute, look at the options offered with the new PRESTO fare card. Take advantage of seamless inter-regional travel. Visit www.prestocard.ca
- Avoid using drive thrus and don't start your car until you're ready to go.
- Turn the car off when picking people up from school or work.
- Keep your car running efficiently to save gas and prevent pollution, keep your tires properly inflated, do regular tune-ups.
- If you're looking into purchasing a vehicle consider an electric, hybrid or fuel efficient vehicle.

Improve your transportation habits

- Consider biking or walking to work, school or for short errands.
- Choose to live in a walkable neighbourhood with transit access.
- Start a car sharing group in your neighbourhood.
- Ensure the sidewalk in front of your house is cleared of snow in all seasons for pedestrians.
- Take public transportation when possible.
- Purchase a monthly transit pass. You never have to worry about change for the bus and it'll encourage you to use the bus more often.

Get involved in the community

- Get involved in the development of the town's community sustainability plan. Learn more at www.oakville.ca/environment/integrated-community-sustainability-plan.html
- Support and attend environmental events. Sign up for the Halton Environmental Network's weekly newsletter at <http://haltonenvironment.com/?cat=273>
- Volunteer at a local school.
- Discuss environmental issues with your family and work together to come up with ways to reduce your ecological footprint.
- Encourage your children to join your school's environmental group or help start one.



5 Resources

Air quality and climate

- Halton Region is one of the pilot communities to roll out the Air Quality Health Index (AQHI). To learn more about this program and other information on air quality in Oakville, visit www.halton.ca/airquality
- For a list of anti-idling resources and information visit <http://idling.gc.ca>
- For information on the town's Health Protection Air Quality By-law, visit www.oakville.ca

Energy

- Interested in learning more about solar or wondering if solar is right for your home? Contact the Halton Enablers of Renewable Energy (HERE!) or visit their website at http://haltonenvironment.com/?page_id=55

Healthy neighbourhoods

- For detailed information on Oakville's trails, including maps, photographs and a historical perspective, visit www.oakville.ca/culturerec/trails.html or pick up a copy of Oakville's trail and cycle guide at town facilities.
- For information on Halton Conservation's *Halton Hikes: 50 Great Trails* visit www.haltonhikes.ca
- Visit one of Halton's many farmers markets and support Halton farmers. Visit www.halton.ca for listings.

Natural areas

- For information on Halton's conservation areas and waterways, visit Conservation Halton www.conservationhalton.ca or call 905-336-1158.
- Want to know more about the town's wildlife and biodiversity? Visit www.oakville.ca/environment/wildlife-biodiversity.html
- The Halton Natural Areas Inventory (2006) was completed in partnership with Halton Conservation Authority and local field naturalist clubs. A copy of the report is available through Conservation Halton for a fee.
- For a listing of local naturalist clubs, visit www.ontariobnature.org

Transportation

- Need a bus schedule or know where to buy tickets? Visit Oakville Transit at www.oakvilletransit.ca

Waste

- Do you want to drop off a used item or recycle something but don't know where to go? Visit www.halton.ca/waste for an easy to use directory.

Water

- Halton Region provides resources to help you conserve water. Visit www.halton.ca/toiletrebate to learn about low flush toilet rebates or www.halton.ca/WaterConservation to access their information on water efficiency.

General

- Oakvillegreen is our largest community association that has been working to protect our environment, promote sustainable planning and make sure that new development pays for itself. Visit www.oakvillegreen.com for more.
- For a listing of local environmental organizations, businesses and activities, the Halton Environmental Network (HEN) produces the Halton Enviro Guide: www.the-hen.net
- For fact sheets on environmental topics, visit the town's website at www.oakville.ca/townhall/environmental-strategic-plan.html
- For general environmental information regarding the town, pick up a copy of the Environmental Stewardship Guide in the Environmental Policy department at Town Hall or at one of our many public outreach events or online at www.oakville.ca/environment/environmental-stewardship.html

Beyond the information provided in the SOER, there are many helpful links to programs and events throughout the Region. By accessing the *What you can do* or the *Resources* section you will find a wealth of programs catering to different audiences and many topics.

For links to curriculum information you can contact Trisha Lesczynski (tleszczynski@oakville.ca) or Donna Doyle (ddoyle@oakville.ca) for more information.

For general information from the Environmental Policy department regarding this guide you can email environment@oakville.ca

There are a number of great environmental education resources you can bring into your classroom. Some of our favourites are:

- OakvilleGreen educational programs www.oakvillegreen.com (go to the “for teachers” tab)
- Get to know www.get-to-know.org
- EarthDay Canada www.earthday.ca or www.ecokids.ca
- 52 tips for biodiversity http://ec.europa.eu/environment/nature/info/pubs/docs/brochures/biodiversity_tips/en.pdf
- BioKits program (Government of Canada) www.ec.gc.ca/biotrousses-biokits/default.asp?lang=En&n=B8362F13-1

We are always interested and excited when educators use the SOER as an education tool for their classrooms. If you have any additional comments and input for future guides please email the Environmental Policy department at environment@oakville.ca and share your ideas!





100% post consumer waste

This document has been printed in-house to ensure we only print as many copies as are needed. It is printed on Lenza paper, an FSC certified paper made of 100% post consumer waste using no chlorine in its processing.



Town of Oakville
1225 Trafalgar Road
Oakville ON L6H 0H3
T: 905-845-6601 TTY: 905-338-4200
www.oakville.ca