



# Town of Oakville

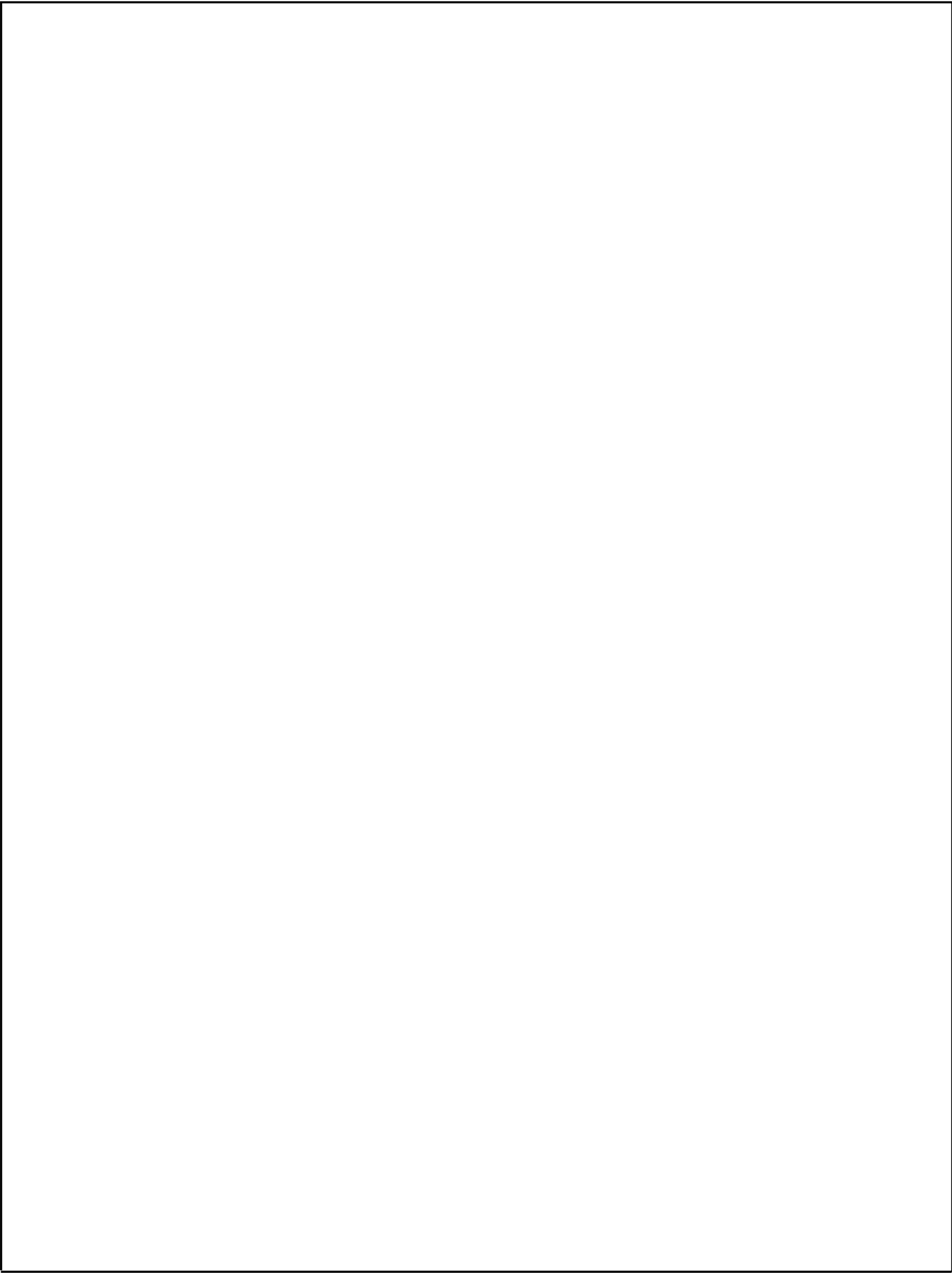
State of the  
Environment Report  
2016



**DRAFT**



OAKVILLE



# Table of Contents

Introduction	2
Ecological Footprint	3
Indicators	
Goal 1: To sustain and enhance our natural environment	4
Greenspace and biodiversity	
Air quality	
Water quality	
Climate change	
Goal 2: To reduce our resource consumption and waste production	10
Energy conservation	
Solid waste	
Water conservation	
Goal 3: To establish and support an environmentally friendly transportation network	14
Transit	
Transportation choices	
Goal 4: To create and support a healthy resilient community	17
Community health & green space access	
Green development	
Goal 5: To foster environmental stewardship through education and community involvement	21
Outreach and education	
EcoSchools	
Goal 6: To lead in applying the best environmental management practices	23
Innovative environmental programs	
Environmental Strategic Plan	
Conclusion	26
What you can do	27
Resources	28
Note for educators	29

# Introduction

## Welcome!

This is the ninth annual edition of the SOER. As you look through the information presented in this report, we encourage you to reflect on the impact “environment” has in our lives - it provides us the air we breathe, the food we eat, the water we drink and so much more. In turn, we also have a significant impact - we have the opportunity to make choices that can make this impact positive. The town is pleased to note that in 2015 we were selected as one of Canada’s Greenest Employers, recognizing the town’s commitment to environmental sustainability. We hope you will join us in finding ways to improve Oakville’s environment and help make it the most livable town in Canada.

## Background

In December 2005, Council approved the town’s first Environmental Strategic Plan (ESP). This document was developed in partnership with the community and updated in 2011. One of the recommendations of the ESP was to develop a state of the environment reporting system and in 2008, the town published its first annual State of the Environment Report (SOER).

This report, like most State of the Environment Reports, uses indicators. Since the environment is very complex, indicators provide a more practical and economical way to track the state of the environment than if we attempted to record every possible variable in the environment. For example, CO<sub>2</sub> emissions can be an indicator of climate change. While there are many causes of climate change, scientific research has shown a direct link exists between increasing CO<sub>2</sub> emissions and increasing global average temperatures.

As we increase our baseline data, we can start to see trends which will help us determine the best programs and actions needed to improve our performance.

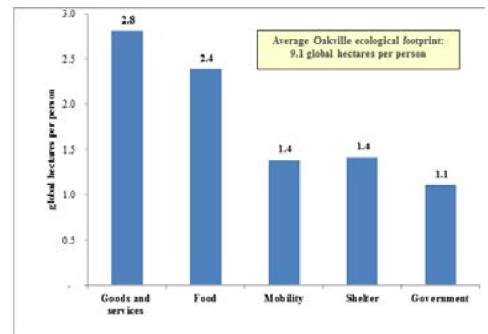
# Ecological Footprint

The ecological footprint provides a way to help us measure how sustainable our communities are. It does this by analyzing a broad range of data to estimate the amount of land and water or “global hectares” (gha) required by a human population to produce the resources it consumes and to absorb its wastes. Figure A shows the categories used to calculate the footprint and the amount that each contributes to Oakville’s profile specifically. More information on the ecological footprint is available online at [www.footprintnetwork.org](http://www.footprintnetwork.org)

Livable Oakville, the town’s official plan, notes the importance of reducing the town’s ecological footprint as a means of measuring progress towards sustainability. Although the footprint is commonly used on larger scales, the Town is at the forefront of municipalities in using it at the local level. In 2010, the Town’s first footprint was calculated to be 9.0 global hectares (gha). In 2015, this increased slightly to 9.1 gha per person. In terms of total area, this equals 1.7 million global hectares or over 120 times the town’s total land area (13,850 hectares) as shown in Figure B. As a comparison, the average Canadian has an ecological footprint of 7.01 gha.

Ecological footprint results by neighbourhood were also calculated and range from 5.7 gha per person to 15.0 gha per person. The range in average neighbourhood ecological footprint per person can be attributed to a number of factors including differences in household income leading to greater purchasing capacity, household energy use, commuting distance, mode of travel (e.g. walking/biking or taking public transit to work), household size and number of people per household. Figure C presents a map of neighbourhood results by quintile.

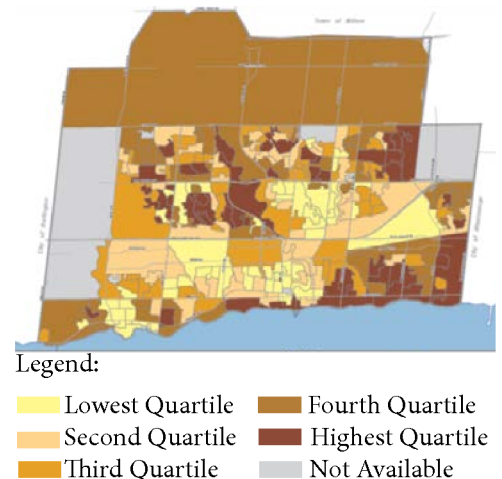
By calculating the ecological footprint at this level of detail, we can better analyze what our biggest environmental impacts are and how we might address them. It offers the opportunity to develop tools and consider data in a way that was previously unknown. For example, we can pilot environmental outreach programs at a small scale to compare results at a neighbourhood level before rolling them out to the larger community or allowing us to better assess the impacts of our environmentally related programs and policies. As data becomes increasingly available and more complex, tools like the ecological footprint provide a way to more effectively understand and communicate information.



**Figure A: Ecological footprint by category**  
Source: Town of Oakville



**Figure B: Oakville ecological footprint**  
Source: Town of Oakville



**Figure C: Ecological footprint by Census Tract (DA)** Source: Town of Oakville

# Goal 1

## To Sustain and Enhance our Natural Environment

### Objectives

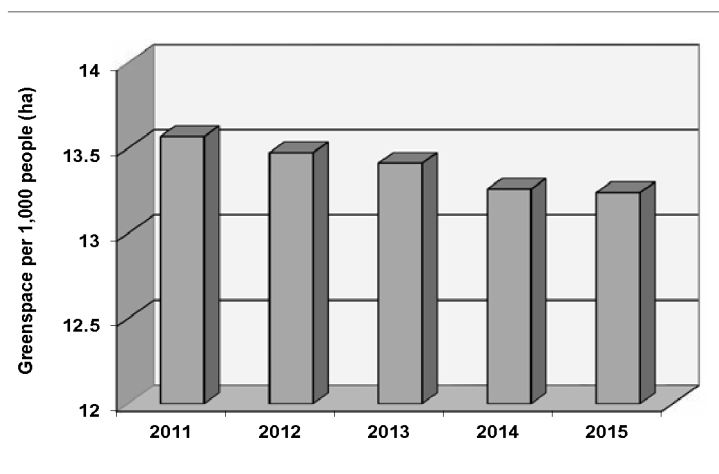
- 1.1 To protect and enhance our biodiversity
- 1.2 To protect and enhance our urban forest
- 1.3 To protect and enhance our waterways
- 1.4 To protect and enhance our air quality
- 1.5 To increase ecological landscaping on private and public property
- 1.6 To reduce and manage the impacts of climate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

### Indicators

- Publicly owned green space
- Trees planted by town staff
- Total suspended solids in creek
- Mean chloride levels in creeks
- Mean phosphorus levels in creeks
- Annual average of ground level ozone
- Fine particulate matter exceedances
- Annual precipitation
- Annual average temperature (winter and summer)

## 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. As shown in Table 1, publicly owned greenspace comprised 2,501 ha in 2015, which equates to about 13.23 hectares of greenspace per 1,000 people as shown in Figure 1. It is expected that over time, the trend of per capita greenspace will generally decline as the population continues to increase and land acquisition opportunities are more limited.



**Figure 1: Publicly owned greenspace per 1,000 people**

Source: Town of Oakville, Conservation Halton, Province of Ontario

In recognition of the benefits that trees provide, the town has set a goal to achieve a canopy cover of 40% by 2057. In 2016, the town undertook an update to its Urban Forestry Effects Model (UFORE) report entitled *i-Tree: Growing Livability* <http://bit.ly/2fhJqsc>. The report noted that Oakville's canopy coverage increased by 1.3% since 2005. This is an accomplishment in light of the 2013 ice storm and the ongoing impacts from Emerald ash borer. Based on updated methodology, Oakville's canopy cover as of 2015 was 27.8%.

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 the Emerald Ash Borer (EAB) and other invasive species. To support existing trees, the town has a number of programs in place.

**Table 1: Green space in the Town of Oakville**

Year	Town (ha)	Province (ha)	Conservation Halton (ha)	Total (ha)
2015	1,522	969	10	2,501
2014	1,505	969	10	2,484
2013	1,504	969	10	2,483
2012	1,501	969	10	2,480
2011	1,498	969	10	2,477

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.

In 2016, a report went to Council with recommendations for an updated Private Tree By-law which would see enhancements to the existing by-law. The town is also working to protect the municipal treatable ash canopy cover. In 2015, thanks to an aggressive program, the town was able to conserve 60% of the ash canopy.



**18%** of  
Oakville's landbase  
is comprised of  
publicly owned  
greenspace

To support new trees, as shown in Table 2, town staff planted a total of 3,755 trees in 2015. Volunteers helped fill in this gap and in 2015, as part of town led events, members of the community planted over 1,350 trees, shrubs and live stakes. This does not include numerous other events led by partners such as Oakvillegreen.

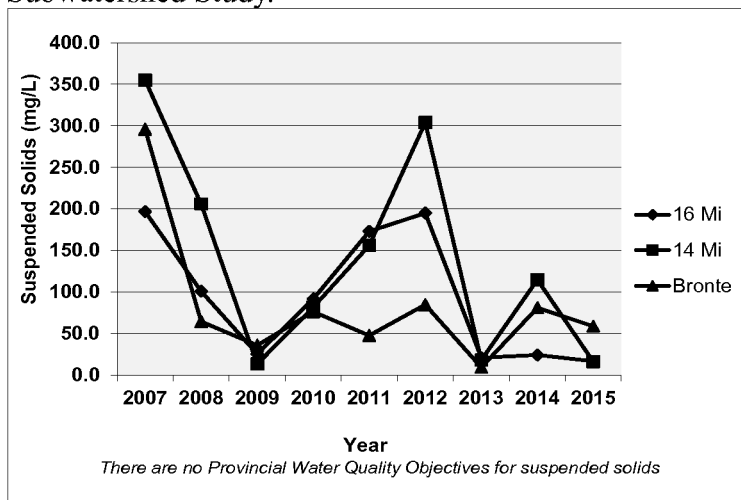
**Table 2: Trees planted by Oakville Forestry Staff**

Year	Trees Planted
2015	3,755
2014	3,966
2013	2,441
2012	1,733
2011	994

**T**otal suspended solids (TSS) consist of fine particles of matter found in waterways. These particles are significant carriers of phosphorus, metals, and other contaminants. Soil erosion and runoff are the most common sources of suspended solids and TSS levels can increase rapidly during storm events.

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.

**A**s shown in Figure 2, TSS was down in all creeks in 2015, with levels remaining relatively low compared to prior years. Extreme rain events are known contributors to runoff and erosion and TSS can be greatly impacted by the timing and location of water sampling. Increased monitoring involving more locations on a more frequent basis can provide greater accuracy. To provide improved analysis in North Oakville, the town has been monitoring TSS, chloride and total phosphorus at four creek stations along Dundas for several years as part of the recommendations from the North Oakville Creek Subwatershed Study.



**Figure 2: Total suspended solids in Oakville creeks**  
(average of maximum levels measured during monthly sampling)  
Source: Conservation Halton

**650** acres of parkland is owned and managed by Conservation Halton and the Government of Ontario as part of the Glenorchy Conservation Area.



## Air Quality

**B**oth ground level ozone and PM<sub>2.5</sub> (fine particulate matter measuring less than 2.5 micrometers) have been linked to serious health concerns. Ground level ozone is also responsible for the majority of the smog advisories experienced in the town. According to Health Canada, the health reference level for PM<sub>2.5</sub> is 15 ug/m<sup>3</sup> and 80 ppb for ozone. These levels have been found to demonstrate quantifiable health impacts in sensitive populations.

Ozone is a secondary air pollutant that is formed when nitrogen oxides (NOx) react with volatile organic compounds (VOCs) in the presence of sunlight. These pollutants are the product of combustion, including that from motor vehicles.

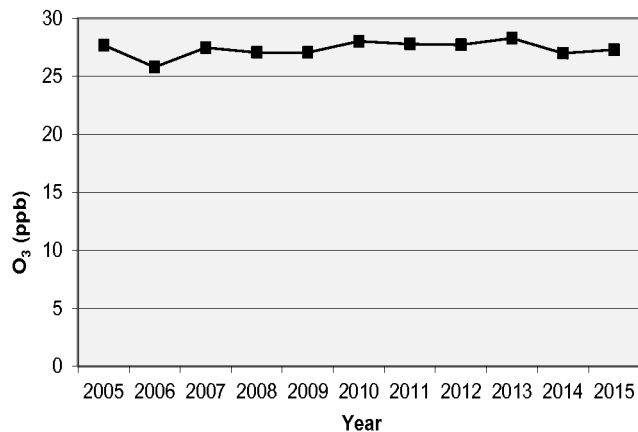
Levels tend to vary considerably in response to varying weather conditions which is why we see the majority of high ozone occurrences in summer months.

**2,000** number of coyote reports filed with the town through the coyote reporting system



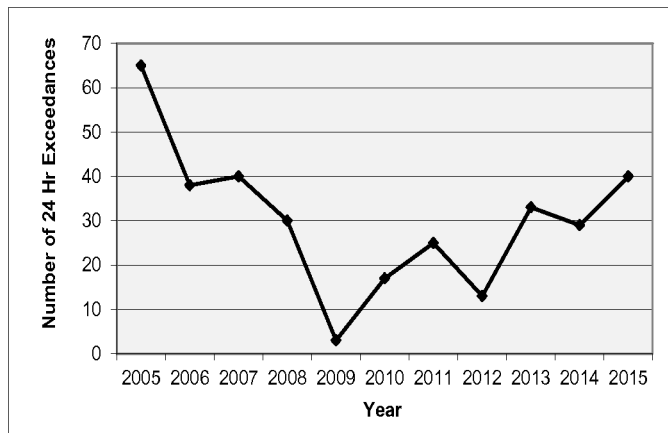


Annual averages have generally been stable as shown in Figure 3, however, if average temperatures increase over time, it is expected ozone will follow if measures, such as a reduction in single occupancy vehicle use, are not taken. PM<sub>2.5</sub> is produced when fuels and coal are burned or when other air pollutants react with compounds in the atmosphere.



**Figure 3: Annual average ground level ozone in Oakville**  
Source: Ministry of the Environment & Climate Change

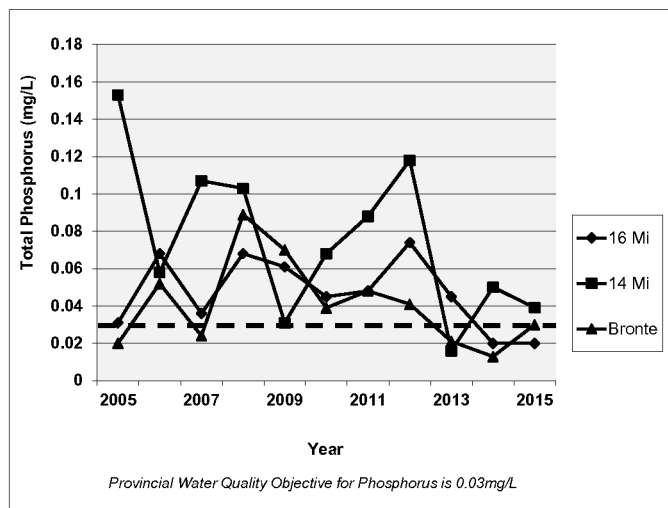
As shown in Figure 4, in 2015 levels are steadily increasing from a low point in 2009. Two factors are likely involved as part of what we are seeing. Improved air quality analyzers were introduced across the province in 2013. This new technology is capable of measuring higher values, particularly in the colder months. The decreased economic activity in 2009 also correlates to decreased levels of PM<sub>2.5</sub> that year indicating economic activity has a correlation to PM<sub>2.5</sub>. More detailed information can be found in Halton Region's annual air quality report which can be accessed at <http://bit.ly/2fUM7DU>



**Figure 4: Annual 24 hour exceedance above 15ug/m<sup>3</sup> of PM<sub>2.5</sub>** Source: Ministry of the Environment & Climate Change

## Water Quality

Chloride and phosphorus concentrations are important to monitor since these reflect impacts from runoff containing 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 has been a significant water quality issue in Oakville. Sources include lawn fertilizers, atmospheric deposition, automobile exhaust, soil erosion, animal waste, detergents and wastewater treatment plant discharges.



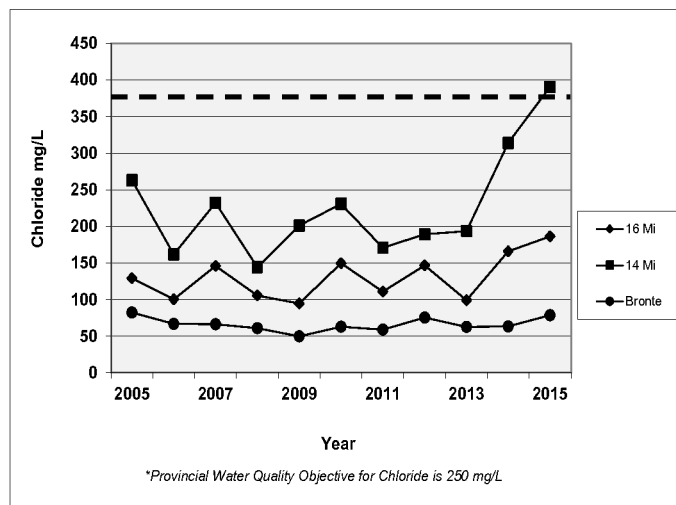
**Figure 5: Mean phosphorus levels in Oakville creeks**  
Source: Conservation Halton

As shown in Figure 5, in 2015, phosphorus levels in Bronte and Sixteen Mile creek remained below PWQO standards, however, Fourteen Mile

**81** hectares along 14 Mile Creek that Town Council approved for designating as Natural Heritage System under the Greenbelt Plan

Creek was slightly exceeding. The general trend of decreasing phosphorus levels is likely in part attributable to

a reduction in the use of phosphate in soaps and fertilizers. However, it is also important to keep in mind that phosphorus is carried in runoff following precipitation events and sampling may not coincide with peak phosphorus levels.



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

Elevated chloride levels in Oakville creeks are primarily a result of road salting during winter months. As shown in Figure 6, chloride levels increased in all Creeks, however, only Fourteen Mile's exceeded the PWQO of 250 mg/L. Although improvements to salt use in winter months have taken place, chloride is known to persist in aquatic systems.

## Climate Change

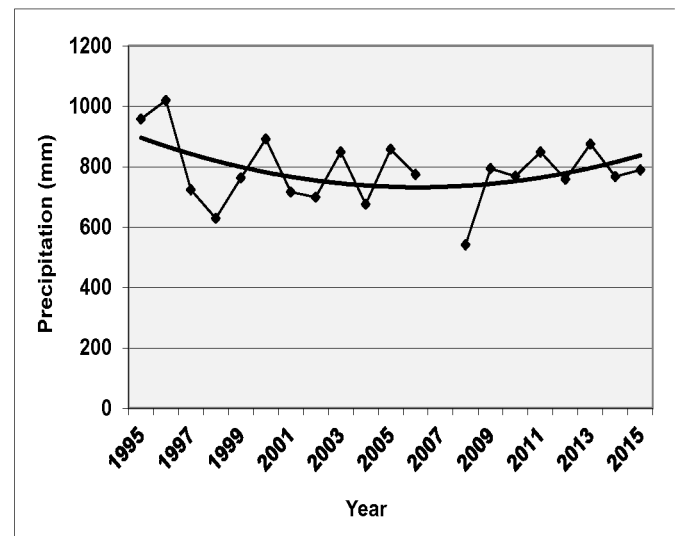
Climate change is expected to lead to greater variations in our weather patterns and an increase in extreme weather events.

By measuring rainfall and temperature, we can evaluate some of the changes that are taking place over time. Simply calculating an annual average may mask the information that would show more extreme temperatures.



**ICLEI awarded the town milestone 5 of its 5-Milestone Building Adaptive and Resilient Communities program for implimentation of the Climate Change Strategy.**

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's annual precipitation**  
Source: Environment Canada



**1.02** billion dollars: replacement value of Oakville's urban forest

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 so looking at the trendline is more important in this case than looking at the variations from year to year.

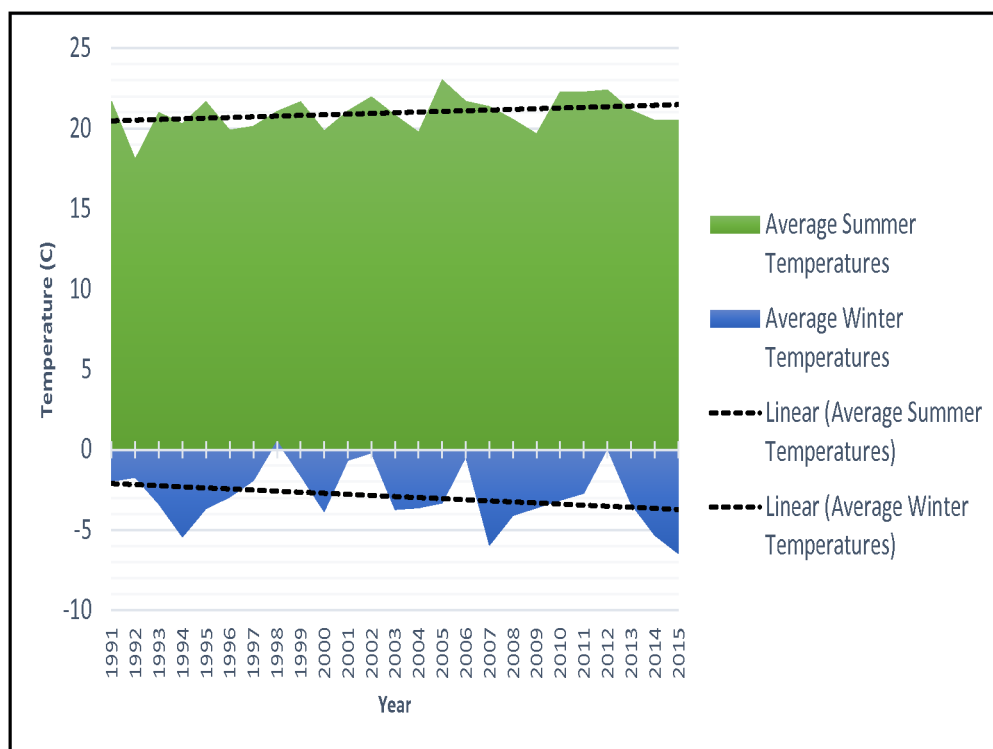


**An intergenerational planting day by highschool students and seniors, planting native shrubs and plants was held at Bronte Bluffs**

Figure 7 shows a very slight trend towards increasing precipitation levels, however, climate models have predicted that precipitation events are likely to become less frequent but more intense which can have significant impacts for flooding, agriculture, trees and many other processes that require more consistent water levels. Precipitation may also not arrive at the time of year when it is most needed - for example, summers may tend more towards drought while winter precipitation events may become more frequent. To gain a more complete understanding, future indicators may need to include data that looks at the frequency and intensity of precipitation events.

For temperatures, a general trend is being seen towards warmer summers and cooler winters overall (Figure 8). These trends are keeping in line with what is expected based on climate models for southern Ontario. In 2014, the town developed a Climate Change Strategy that provides additional analysis on changing climate trends and how residents can prepare for the resulting impacts <http://bit.ly/2fhPdOv>

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



**The Town hosts an annual "Keep Calm and Adapt" event in Spring to educate residents on extreme weather and emergency preparedness**

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

# 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

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

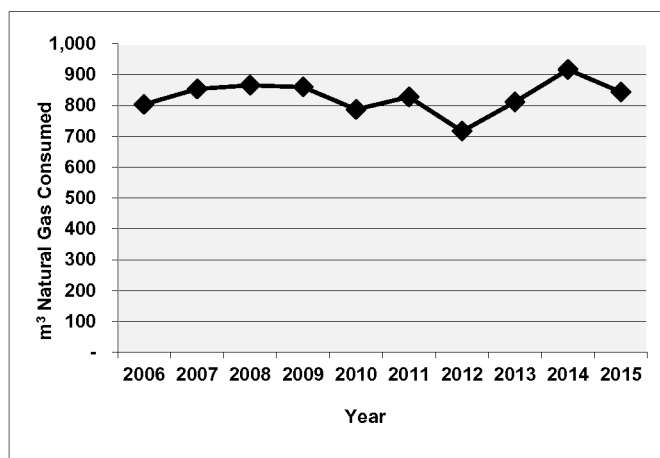
## Energy Conservation

Tracking the amount of energy used by the community can provide insight into our energy efficiency over time, and where improvements can be made. We also need to look at reducing the impact of our energy production.

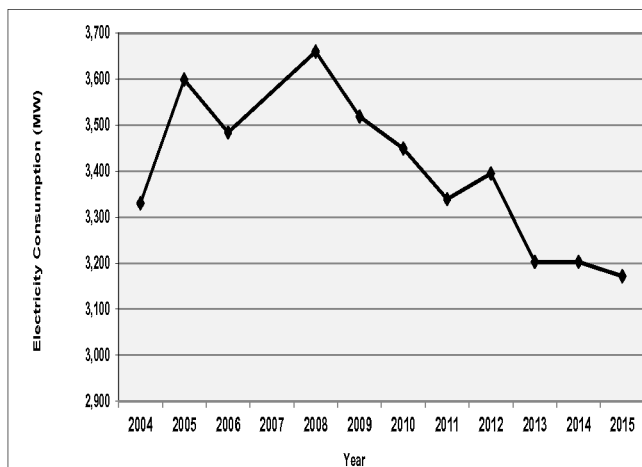
Figure 9 shows that per capita energy use has generally been declining since 2008. This may be due in part to extensive campaigns aimed at conservation, lower summer temperatures in 2015 which reduced air conditioner use and energy efficiency improvements in appliances.

Natural gas consumption is another component of our energy use. Natural gas is the main source of energy for residential heating in Oakville.

Figure 11 shows consumption decreased most in the residential sector with a slight decrease in the commercial and stable in the industrial sectors. Weather is a significant factor influencing natural gas use in the residential and commercial sectors with colder weather leading to increased heating needs. Although the average winter temperature shows a cooling trend, there were a number of individual days that were warmer than usual in the Winter of 2015 which may have been a factor in the decrease seen in gas consumption.

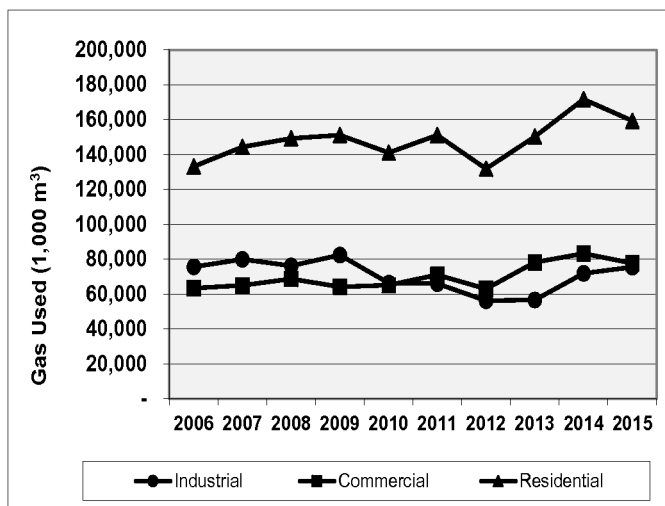
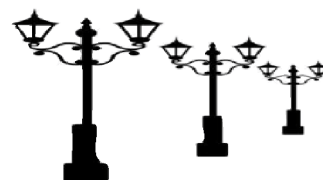


**Figure 10: Residential per capita natural gas consumption**  
Source: Union Gas



**Figure 9: Residential per capita electricity consumption**  
Source: Oakville Hydro

**LED Street lights  
are now standard  
in new community  
developments**



**Figure 11: Natural gas consumption by sector**  
Source: Union Gas

## 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 success in reducing their waste. Reducing the amount of waste we generate is becoming increasingly important as the remaining capacity of our landfills is being used up.

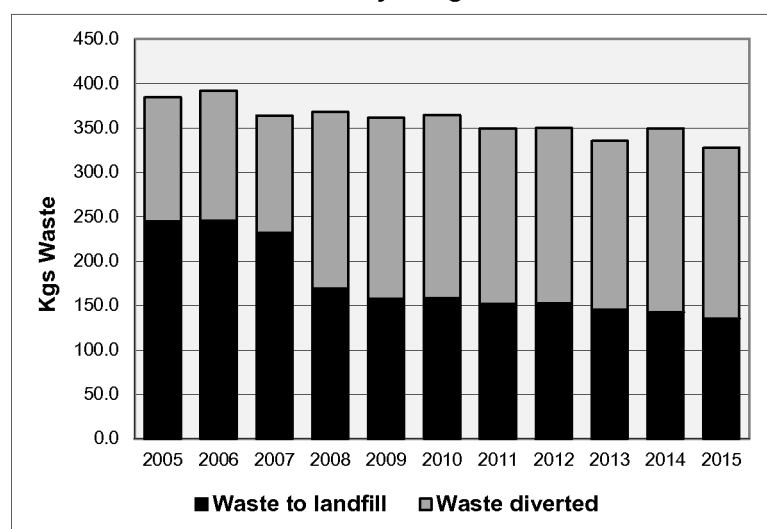
As shown in Figure 12, the total amount of waste generated per person has remained relatively steady from 2005 to the present at around 350 kg per person. In 2015, the per capita value was 327.1 kg per person. It is of interest to note that waste going to landfill has decreased while diversion (recycling) has increased which is also an encouraging trend.

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

Year	Landfill (T)	Diverted (T)	Total (T)
2015	25,519	36,347	61,866
2014	26,630	38,372	65,002
2013	27,033	35,943	62,976
2012	27,882	36,281	64,163
2011	27,717	36,062	63,779
2010	28,402	36,843	65,245



**131** kgs of used batteries and phones were returned to Call2Recycle for proper recycling in 2015



**Figure 12: Residential per capita waste and recycling**

Source: Halton Region

**713** lbs of K-cups were collected from town departments and facilities for recycling



## 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 for our use. It is also good for cost avoidance, because it is cheaper to conserve water than it is to increase treatment capacity. Studies show that water efficiency measures can cost less than new infrastructure.

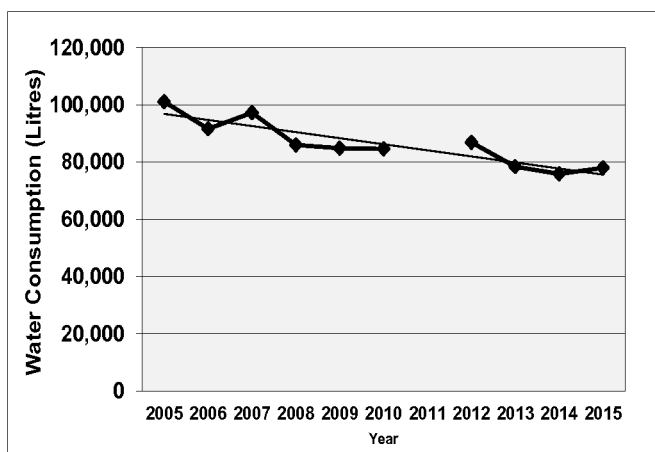
**Table 4: Oakville residential water consumption (Millions of Litres)**

Year	Millions of Litres	Year	Millions of Litres
2015	147.3	2011	Data not available
2014	142.2	2010	151.5
2013	145.2	2009	150.3
2012	160.0	2008	149.3



The Sustainable Purchasing Procedure was updated in 2015 to include climate change considerations as one of four goals.

Despite a population increase of almost 17% since 2005, total residential water use has remained fairly steady because per capita use has gone down over time (Figure 13) although due to population increases, overall consumption has increased (Table 4). Several factors may be contributing to the per capita decreasing trend including the continued water reduction strategies put in place by Halton Region and supported by the town such as the Outdoor Water Use Education Program and the annual rain barrel sale held each spring.



**Figure 13: Residential water consumption per capita**

Source: Figure 14 uses water data from Halton Region and is converted to per capita data using population estimates from the Town of Oakville. The calculation uses estimates therefore, this data may not be accurate and is only meant to support a trend analysis.

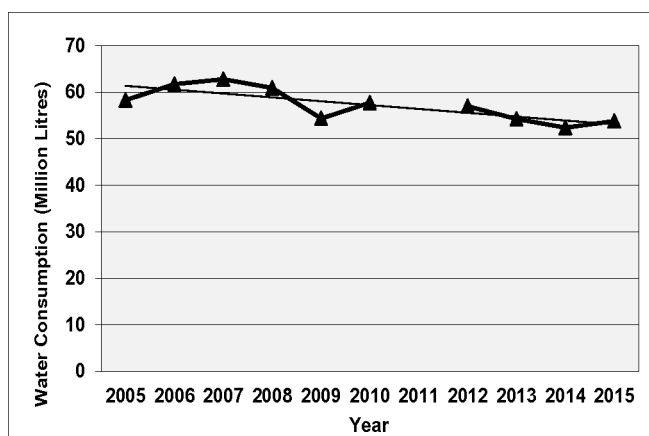


**The Town recycles, properly disassembles and reuses expired office supplies through TerraCycle and Staples.**

**The town reduced their power and air conditioning costs by consolidating, virtualizing, and purchasing more efficient servers which reduced power consumption by 40% and the air conditioning load by 50%.**



Water use in the industrial, commercial and institutional sectors has also shown a sustained decrease over time as shown in Figure 14. The trend towards hotter and drier summers can contribute to increased water use and it will be particularly important in coming years to monitor this potential scenario.



**Figure 14: Industrial/Commercial/Institutional water consumption** Source: Halton Region

# 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
- Population growth vs vehicle ownership
- Personal vehicle registrations



## Transit

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

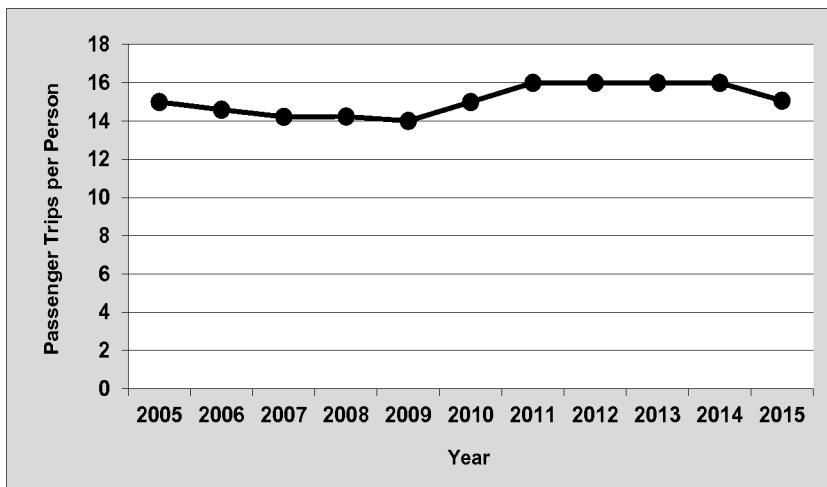
Generally, buses are more fuel efficient than automobiles. Burning one litre of gasoline generates two kgs of carbon dioxide (CO<sub>2</sub>). Using a conservative estimate, the average car commuter generates at least 3,300 kg of CO<sub>2</sub>/year.



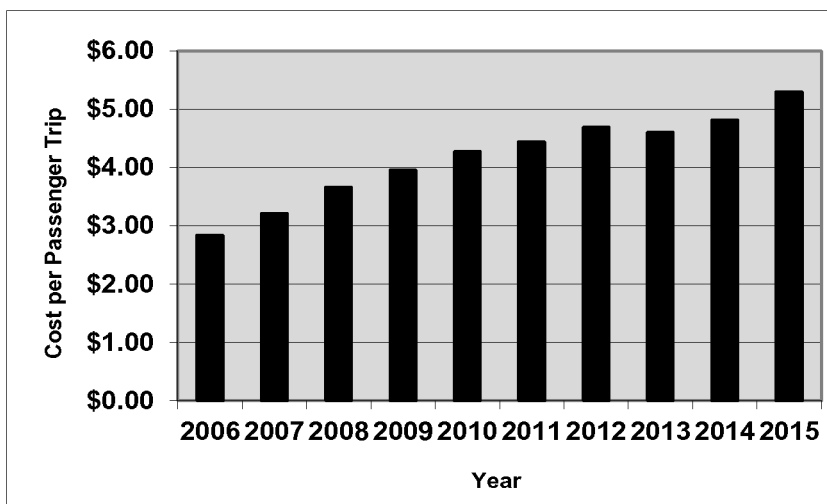
**Not sure of the rules of the road for bikes or what the requirements are for having a safe bike? Grab a copy of Oakville's Cycling Handbook <http://bit.ly/2flwh0c>**

In 2015 Council approved a new five year plan for Oakville Transit. A number of recommendations were made including: increasing frequency of service, improved GO Train connectivity, enabling "Transit First" in North Oakville and introducing an Intelligent Transportation System (ITS). As shown in Figure 15, improvements made in 2009 through the last transit plan resulted in increased ridership. Similar results are expected with the implementation of some of the proposed enhancements in 2016.

**220** kms of trails are in the Town of Oakville



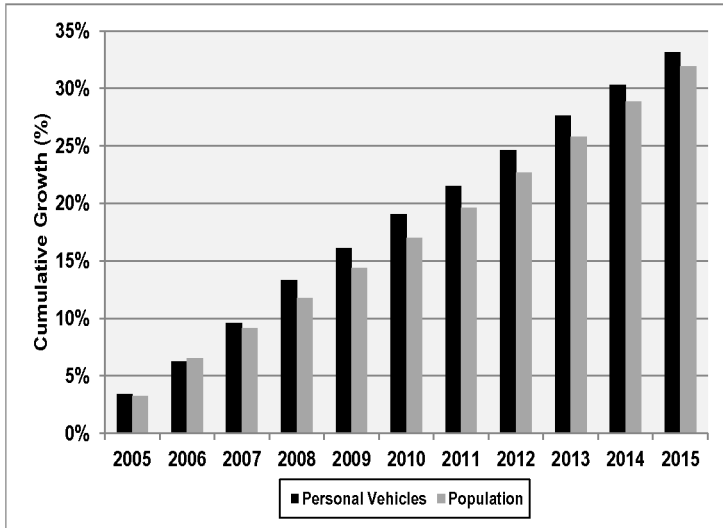
**Figure 15: Oakville Transit passenger trips per capita**  
Source: Town of Oakville



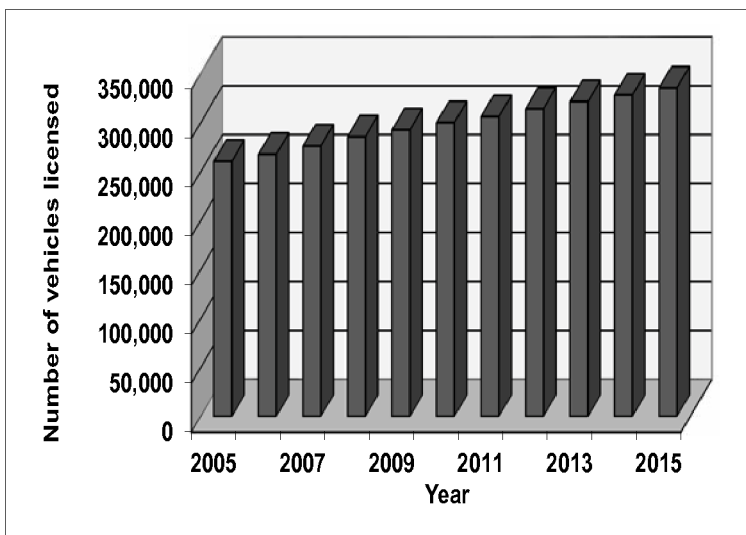
**Figure 16: Oakville Transit net cost per passenger trip**  
Source: Town of Oakville

## Transportation Choices

Transportation choices depend on commuting distance, accessibility of alternative transportation modes such as bicycle lanes and the success of Transportation Demand Management (TDM) programs. Cars can provide an easy means of travel, however their cost economically and environmentally is high. According to Statistics Canada, 80% of residents use a personal vehicle for their commute. Figure 17 shows the relationship between population and vehicle ownership.



**Figure 17: Population growth vs vehicle ownership in Halton**  
Source: Ontario Ministry of Transportation



**Figure 18: Personal vehicle registrations in Halton**  
Source: Ontario Ministry of Transportation

**3** bike corrals added to the Downtown, Bronte and Kerr districts



The data shows that per capita car growth has generally outpaced population growth. As seen in Figure 18, this means the overall number of personal vehicles in Halton 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. An update to this plan is underway and is expected to be completed in 2017.

To continue to support a desired level of active transportation (cycling and walking), through the 2015 Active Transportation Capital Program approximately 28 km of active transportation facilities were implemented. In total, 266 kilometres of cycling, sidewalk and multi-use trails projects have been proposed through the ATMP to be completed by 2019.

**28** kms of new active transportation facilities to be added in 2016



# 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

- Adopt-a-Park
- Adopt-a-Trail
- Community garden plot rentals
- Kms of trail per 1000 people
- Housing completions
- Building permits issued

# Community Health & Greenspace Access

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

These indicators reflect 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 220 kilometres of trails and 1,470 hectares of parkland available for adoption. As can be seen in Table 5, the amount of adopted land has remained relatively stable, and participation has been steadily increasing. 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 19, these plots have become increasingly popular and in 2015, all plots at both Bronte Creek and the town were fully rented.

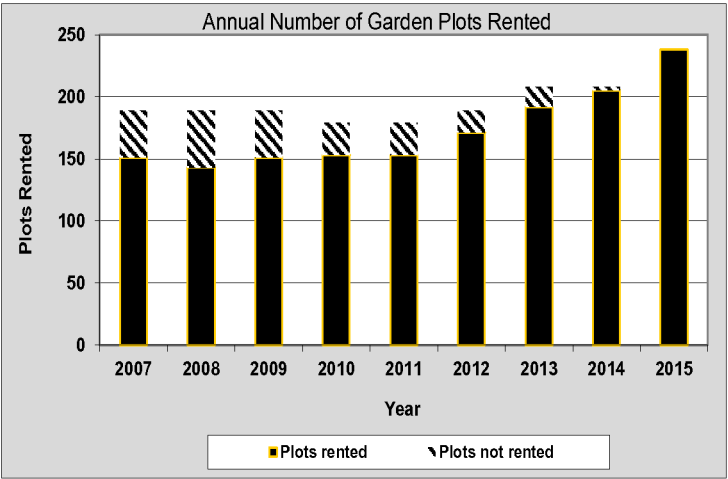


Figure 19: Community garden plot rentals in Oakville  
Source: Town of Oakville and Ministry of Natural Resources

As population increases and there is a greater focus on “local food”, future demand is expected to increase.

Community clean up during Earth Week with 4,600 kgs of waste collected over 47 sites



Table 5: Oakville's Park Ambassador Programs		
Adopt-a Park		
Year	Area (ha)	Participants
2015	Need data	59
2014	200	59
2013	225	54
2012	185	56
2011	208	49
2010	212	46

Adopt-a-Trail		
Year	Length (kms)	Participants
2015	Need data	158
2014	103	132
2013	90	123
2012	80	103
2011	82	89
2010	72	83

Trails are another important amenity that connect people with the outdoors. Oakville has one of the most extensive trail systems per capita in Ontario. Despite Oakville’s growing population, frequent additions of trail infrastructure have allowed for an increase in trail availability and Oakville is fortunate to have an exceptional trail system throughout the town.

In 2016, the town undertook a major project to allow for the better evaluation of trails data. As a result of this, how the town enters data for trails within its GIS systems has been changed and data from previous years is no longer able to be effectively compared. 2015 is now considered a “base year” and represents the total length of trails within the town’s jurisdiction. Going forward, we will be able to do a comparative analysis. In 2015, the total trails system was calculated to be 219 kilometers, broken down as follows (Table 6):

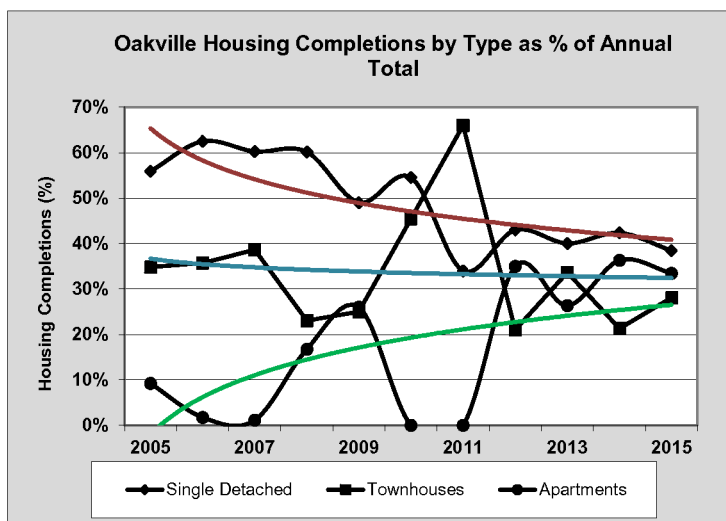
<b>Table 6: Oakville's Trail System</b>	
<b>Trail Type</b>	<b>Length (Km)</b>
<b>Accessway</b>	6.2
<b>Crosstown or Corridor</b>	30.5
<b>Park Walkway</b>	58.2
<b>Service Access</b>	1.3
<b>Sidewalk</b>	0.3
<b>Woodland Trail</b>	123

**217** residents  
became park  
ambassadors to keep  
our green spaces  
clean!



## Green Development

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



**Figure 20: Oakville housing completions**  
Source: Canada Mortgage & Housing Corp.

In 2015, housing completions in Oakville were down from previous years at a total of 986 units.

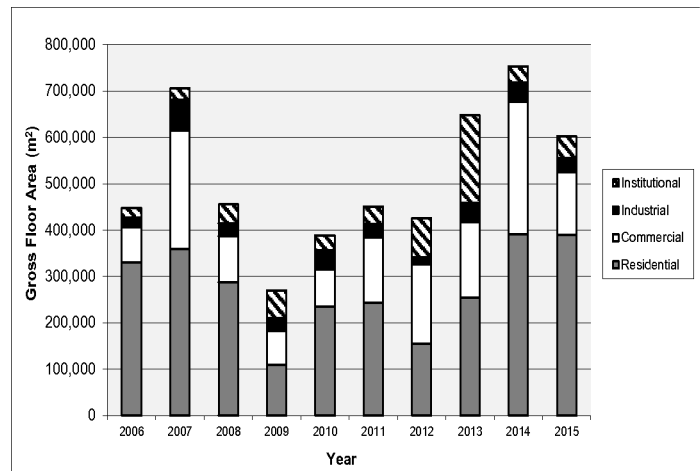
Overall, 379 (38%) were singles, 277 (28%) were row dwellings (townhouses), and 433 (33%) were apartment completions. As shown in Figure 20, since 2006 housing densities have been moving away from single family to more dense forms, with apartments in particular increasing.

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. The town is meeting these objectives with 61% of Oakville’s development occurring as either townhouse or apartment dwellings.

**A new farmer’s  
market featuring  
fresh produce  
opened on Navy  
Street**



As shown in Figure 21, during the economic downturn in 2009, construction starts declined considerably, however, since then numbers have generally been increasing. In 2015 although there was a decrease the overall trend is still positive with a total of 434 permits issued. A number of projects commenced in 2015 including the new Oakwoods Business Park located at Ford Drive and Upper Middle Road and phase three of the Great Lakes Business Park. For a more detailed analysis of Oakville's economic activity, see the Town's annual Economic Development Report <http://bit.ly/2ePtg93>



**Figure 21: Oakville building permits issued**  
*Source: Town of Oakville*

# Goal 5

## To Foster Environmental Stewardship through Education and Community Involvement

### Objectives

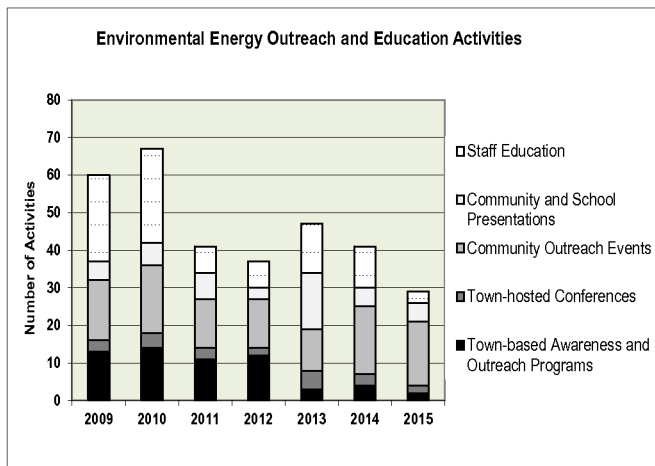
- 5.1 To support and enhance a public education strategy to increase environmental awareness and stewardship
- 5.2 To support and enhance programs to increase environmental awareness and stewardship
- 5.3 To support and enhance the town's environmental indicators and monitoring programs

### Indicators

- Environmental Policy department outreach and education activities
- Number of certified EcoSchools in Oakville



**2,700+**  
elementary students  
registered for the Halton  
Children's Water Festival



**Figure 22: Environmental Policy department outreach** Source: Town of Oakville

## EcoSchools

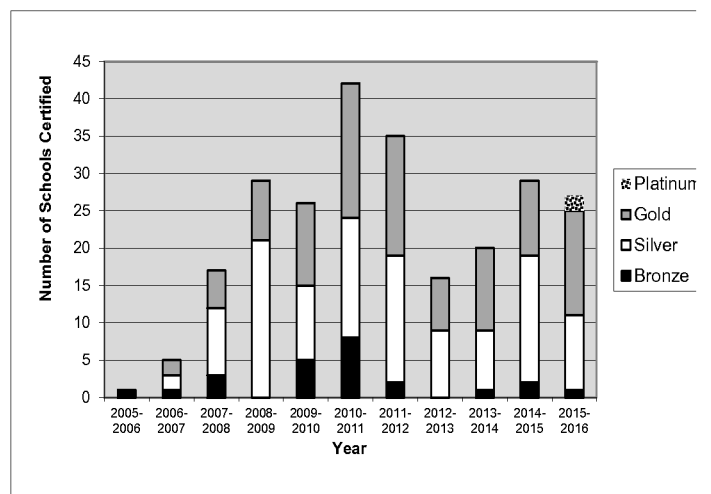
The EcoSchools program annually reviews environmental management and education in schools. School boards designed this program to incorporate environmentally friendly actions within the school setting. A full outline of this program is available at [www.ontarioecoschools.org](http://www.ontarioecoschools.org)

For the 2015-2016 school year, a total of 27 Oakville schools were certified. For the first time, two Oakville schools achieved Platinum which is the highest possible standing in the EcoSchools program. A total of 14 schools achieved Gold status, 10 achieved Silver and 1 achieved Bronze. Individual schools continue to make efforts and these are acknowledged each year at the EcoSchool celebrations which are held in October hosted by Halton Region. This event recognizes the sustainability related achievements of Halton's schools.

## Outreach and Education

Education and outreach programs are key components supporting increased community awareness of environmental issues. Monitoring the number of environmentally related public outreach events that are put on by the town each year helps assess the town's efforts in raising the profile of the environment and to identify the need for stewardship with residents and businesses.

As shown in Figure 22, the town holds a significant number of outreach events. While the number of events attended has declined over time, the scale of the events hosted has been increasing, creating better efficiencies with staff resources and numbers of people reached per event. In addition, the town has developed working partnerships with groups such as OakvilleGreen and Evergreen to deliver programs to the community.



**Figure 23: Oakville EcoSchools**  
Source: Halton District School Board and Halton Catholic District School Board



**\$3,000** received  
from Union Gas in 2015 to  
fund future tree planting for  
woodland regeneration



# Goal 6

## To Lead in Applying the Best Environmental Management Practices

### Objectives

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

### Indicators

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

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.

## 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 of recent initiatives include:

**Table 6: Sustainable Green Fleet**

The Town is piloting the implementation of Automatic Vehicle Locating (AVL) software to have real time reporting on vehicle operations that will be used to improve the efficiency of activities.

In 2016, the town's Fleet Driver Trainer updated the Drivers Operator Handbook to include content on the Sustainable Green Fleet Procedure as well as fuel efficient and environmental driving recommendations.

The town has six electric vehicles in the Fire Prevention fleet, and is continually assessing the feasibility and business case to replace other departmental light-duty gasoline vehicles with EVs. In partnership with Oakville Hydro two community EV charging stations are being installed in the near future.

Transit staff continue to test and investigate the implementation of electric buses for incorporation in the Oakville Transit Fleet.

Oakville's Town Hall was the first municipal building in Ontario to receive this certification. Table 7 outlines some of the initiatives that were undertaken as part of the TZW program.

**Table 7: Towards Zero Waste**

To satisfy Ontario Regulation 102/94, the town audits the waste of all facilities with greater than 10,000 square feet of office space including Oakville Transit, Town Hall and Central Operations.

A pilot K-Cup recycling program was implemented at a number of town facilities. Since late January 2015 a total of 713 pounds of K-cup recyclables and compostables have been diverted from the landfill.

Office supply recycling was introduced and expired products such as writing instruments, binders, calculators, correction tape are collected and returned for proper disassembly, reuse and/or recycling. Town staff have filled two boxes weighing 40 pounds for this program.

The town provides battery recycling boxes at nine public facilities including Town Hall and recreation centres. Residents deposited a total of 2,943 kgs (almost 3 metric tonnes) of household batteries in 2015 and 1,990 kgs (almost 2 metric tonnes) to date in 2016.

The town has participated in the Take Back the Light CFL recycling and mercury removal program since 2009. Since then, the town has recycled approximately 4,231 lamps, ensuring the proper end of life management of 0.13 kg of mercury, 19 kg of phosphor, 1,238 kg of glass and 15 kg of metals.

## Towards Zero Waste

This procedure supports continuous improvements to town operations and events to move towards zero waste (TZW). This procedure was reviewed and received by Council in April 2011 and was updated in September 2015 to reflect progress and require higher standards for waste reduction and diversion. In October, 2014 the Recycling Council of Ontario awarded the Town a Silver 3R Certification™ for its TZW efforts. This designation recognizes organizations taking a leadership position in waste reduction and diversion based on a rigorous evaluation process.

**50** plus databases  
available to access  
information through  
the town's open data  
program



## Environmental Strategic Plan

The town's Environmental Strategic Plan (ESP) 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 <http://bit.ly/2fz16io>

The implementation of the updated ESP continues to move forward, and as of the end of 2015 the following actions were either complete or underway:



*In 2015, Oakville was named one of Canada's Greenest Employers, recognizing the town's commitment to environmental sustainability*

**4** LEED certified buildings developed by the Town of Oakville (three Silver & one Gold)



**Table 8: Environmental Strategic Plan Implementation**

Action	Implementation Rate
Ongoing (OG) actions are existing programs and/or policies that will be continuing (total of 67)	100%
Short Term (ST) actions are recommended for completion by 2014 (total of 23 actions)	74%
Medium Term (MT) actions are recommended for completion by 2013-2016 (total of 19 actions)	68%
Long Term (LT) actions are recommended for completion beyond 2016 (total of 12 actions)	92%



*As one of the recognized municipal leaders in addressing climate change, town staff were invited presenters at a number of conferences across Canada where they discussed how to engage staff and implement climate change adaptation in the municipal context*

# CONCLUSION

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 residents and businesses alike. In the town's 2015 Citizen's Survey, 81% 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 94% 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 improve. In 2015, positive trends were once again seen in residents' efforts to act sustainably. Per capita reductions were seen in the amount of waste produced, water use, and both gas and electricity use. This indicates the commitment by the public to helping make a difference and the effectiveness of ongoing environmental and outreach activities.

Water quality in Oakville's creeks is still meeting Provincial Water Quality Objectives for Phosphorous and Chloride with the exception of Fourteen Mile Creek, although phosphorous levels did decline in this creek in 2015. Air quality is showing mixed results with ozone levels holding steady and the number of days where daily average PM<sub>2.5</sub> exceeded 15 µm going up. Despite this, air quality in Oakville remains good, with no readings on the Air Quality Health Index reaching "high risk". Personal vehicles ownership continues to increase above the rate of population growth in Halton. By taking transit, using active transportation or switching to an electric vehicle, we can reduce the impact that vehicles have on air quality.

As population increases, we need to remain vigilant in continually reducing our impact on the environment to ensure our collective impact does not create additional strain on our resources.

**The actions of individuals, families and businesses are critically important. For this reason, the SOER includes a "What you can do" section 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.**

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 appreciable improvements. Over time, changes will not likely be the result of one action or program but rather through a combination of efforts. 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 in supporting more environmental sustainability.

# What you can do

## Reduce your impact on natural environments

- 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 if you're thinking of cutting down a tree greater than 15 cm diameter at <http://bit.ly/2eQpUF5>
- 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](http://www.halton.ca/waste) to find out proper disposal locations

## 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.
- 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/culturerec/index.html](http://www.oakville.ca/culturerec/index.html).

## 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.
- Take the time to separate your garbage into recyclables, compost and garbage.
- 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.

## Get Involved in the Community

- Get involved in the implementation of Oakville's community sustainability plan. Learn more at <http://bit.ly/2ePFFcM>
- Support and attend environmental events. Sign up for the Halton Environmental Network's weekly newsletter at <http://haltonenvironment.net/>
- Discuss environmental issues with your family and work together to come up with ways to reduce your ecological footprint.

## Improve your Transportation Habits

- Start a car sharing group in your neighbourhood
- Take public transit, purchasing a monthly transit pass will encourage you to use the bus more and not worry about money for the bus.
- Turn the car off when picking people up from school, work, or extracurriculars.

# Resources

## Air quality and climate

Halton Region is one of the pilot communities rolling 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](http://www.halton.ca/airquality). For a list of anti-idling resources and information visit <http://idling.gc.ca>

## Energy

Interested in learning more about solar or wondering if solar is right for your home? To learn more about renewable energy in Oakville visit [www.oakville.ca/environment/green-power.html](http://www.oakville.ca/environment/green-power.html)

## Healthy neighbourhoods

For detailed information on Oakville's trails, including maps, photographs and a historical perspective, visit [www.oakville.ca/culturerec/trails.html](http://www.oakville.ca/culturerec/trails.html)

For information on Halton Conservation's Halton Hikes visit [www.haltonhikes.ca](http://www.haltonhikes.ca)

Check out Halton's many farmers markets and support Halton farmers

## Natural areas

For information on Halton's conservation areas and waterways, visit Conservation Halton [www.conservationhalton.ca](http://www.conservationhalton.ca) or call 905-336-1158

Want to know more about the town's wildlife and biodiversity? Visit [www.oakville.ca/environment/wildlifebiodiversity.html](http://www.oakville.ca/environment/wildlifebiodiversity.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.ontarionature.org](http://www.ontarionature.org)

## 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](http://www.halton.ca/waste)

## Water

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

## General

Oakvillegreen is an Oakville 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](http://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: <http://haltonenvironment.com>

# Notes for Educators

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” sections you will find a wealth of programs catering to different audiences and many topics.

For general information from the Environmental Policy department regarding this guide you can email [environment@oakville.ca](mailto: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](http://www.oakvillegreen.com) (go to the “for teachers” tab)

Get to know [www.get-to-know.org](http://www.get-to-know.org)

EarthDay Canada [www.earthday.ca](http://www.earthday.ca) or [www.ecokids.ca](http://www.ecokids.ca)

52 tips for biodiversity <http://bit.ly/2egy4I5>

BioKits program (Government of Canada) <http://bit.ly/2ftCrwS>

We are always interested to hear 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](mailto:environment@oakville.ca) and share your ideas!





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