



Measuring Sustainability Report
Establishing a baseline for key indicators
of sustainability in Pickering

The Sustainable Pickering Advisory Committee

The City of Pickering acknowledges the invaluable contribution of the [Sustainable Pickering Advisory Committee](#) in this initiative. The Committee was formed in February 2007 to provide direction, advice and guidance regarding Sustainable Pickering initiatives. Its members are:



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The Sustainable Pickering Advisory Committee, together with the Office of Sustainability (the first ever created by an Ontario municipality), is working to make Pickering a more sustainable City – environmentally, socially, and economically – in partnership with like-minded residents, community groups and businesses.

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Pickering: The Sustainability Story

Executive Summary

There's a saying that "What gets measured, gets done." The City of Pickering has set itself the goal of becoming a sustainable city, and that means measuring progress towards this goal.

This report is the result of a consultation process with staff, stakeholders, and residents on what the City should measure and how to measure it. Together, we have identified 32 indicators, each one of which captures a different element of sustainability, and each of which can be monitored over time.

In this report you will find descriptions of those indicators and the results of our measurement to date. The first set of measurements represents a "baseline" against which we can compare future measurements. The report is intended to be a living document that will be updated as new information comes in, so we encourage you to return to it every few months to follow our progress.

The measurements are grouped into five areas:

1. Healthy Environment
2. Healthy Economy
3. Healthy Society
4. Responsible Development
5. Responsible Consumption

The indicators range from those that reflect the quality of the air and water of Pickering, to those that reflect our progress towards being an inclusive and welcoming community with good jobs available for our residents. For many of the indicators, we have included links and information about what you can do in your homes, schools, and workplaces to help move us along on our journey towards sustainability. With your help, we can reach new milestones along the way to a more sustainable city.

We welcome your comments, questions, and suggestions about the document and our measurement project. Contact our Office of Sustainability at sustainability@cityofpickering.com or 905.420.4660 ext. 2170.

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Pickering: **The Sustainability Story**

We invite Pickering residents to join us on this journey.

Sustainable Pickering is a journey, not a destination. We know that moving towards sustainability is the right direction to go and that every step in that direction is worth taking. We invite Pickering residents to join us on this journey.

Although we cannot predict exactly where the journey will take us, we know that it involves three interrelated stages:

1. Build Local Capacity
2. Develop a Solid Foundation
3. Create a Sustainable City

In the early years, we spent more time on the first and second stages of the journey. With much of this work completed (although it's never really done), we are now positioned to make significant progress on the third stage, creating a sustainable City.

This "living document" on the web represents the logical next step in a process that has involved consultation with Council, staff, stakeholders and residents. Thanks to their input, we have identified 32 indicators that we can use to track progress towards a more sustainable Pickering.

We are currently in the stage of establishing baseline data for the indicators. We need to know where we stand now in order to set targets for the future.

Some indicators are already being measured; others require additional work by a technical committee or information from a community-wide survey. As work proceeds on measuring indicators, new information will be posted in this report at sustainablepickering.com.

Pickering: The Sustainability Story

The Journey So Far

- 1998 Pickering launches a Healthy Community Initiative.
- 2002 Pickering joins the Greater Toronto Area (GTA) Clean Air Council.
- 2004 With a grant from the Federation of Canadian Municipalities, Pickering begins work on a [Climate Protection Plan](#) and [Sustainable Neighbourhood Development Guidelines](#).
- 2005 A Benchmarking Committee is formed by Council to develop a process for establishing standards for sustainability for all new development in Pickering. The Benchmarking Committee recommends that this process occur as part of a comprehensive City-wide sustainability program, later known as “Sustainable Pickering.”
- May 2006 First Annual Sustainable Pickering Day event.
- June 2006 Pickering Council adopts the report [Sustainable Pickering: A Framework for Benchmarking Sustainability](#).
- June 2006 Pickering Council adopts a Climate Protection Plan, becoming the fifth municipality in Ontario to complete Milestones 1, 2, and 3 of the Federation of Canadian Municipalities’ Partners for Climate Protection Program.
- March 2007 Pickering establishes the first municipal [Office of Sustainability](#) in Ontario. Working closely with the [Sustainable Pickering Advisory Committee](#), the Office develops the first Sustainable Pickering website, undertakes sustainability orientation and training for all City staff, and launches the Sustainable Pickering Staff Ideas Challenge.
- June 2007 Pickering Council receives the final report on the City’s Sustainable Development Guidelines and directs that the Guidelines be used in future planning.
- Mid 2007 City creates five working groups to develop sustainability indicators in the following five areas: **Healthy Environment; Healthy Economy; Healthy Society; Responsible Development; Responsible Consumption.**
- Late 2007 Working groups help identify more than 200 potential indicators in these five areas, with guidance from experts at the University of Ontario Institute of Technology (UOIT) and the University of Toronto.

Pickering: The Sustainability Story

- Spring 2008** Working group members are brought together to review the long list of indicators at a General Plenary session and narrow it down to a short list of 32 indicators. These indicators are posted on the Sustainable Pickering website for feedback by Pickering residents and other stakeholders.
- June 2008** Pickering wins the [2008 FCM-CH2M Hill Sustainable Community Award in Planning](#).
- June 2009** Launch of the new Sustainable Pickering [website](#) and [Sustainable Pickering Challenge](#); development of new Sustainable Pickering logo; refinement and analysis of 32 indicators to identify available measurement data and new measurements required to track indicators.
- October 2009** Pickering Council approves Resolution 255/09 requiring (with some minor exceptions) that all development meet at least a rating of 'Level 1' in relation to the City's Sustainable Development Guidelines.
- June 2010** Release of the first Measuring Sustainability Report identifying the set of data for [sustainability indicators](#), therefore, establishing a baseline for future measurement and evaluation of Pickering's sustainability journey.

Pickering: **The Sustainability Story**

Lessons Learned (so far)

1. Sustainability is a journey, not a one-time effort.
2. The entire community must be engaged and consultation needs to be broad, multi-faceted and ongoing.
3. The best approach is learning by doing (also known as adaptive management). Instead of the usual “plan-implement” approach, sustainability demands a continuous learning cycle of “think – act – measure,” moving ahead on several fronts at once.
4. The ability to measure results is an essential feature of a workable Sustainable Pickering program. By understanding where we are today, we will be in a better position to set targets for where we aspire to be in the future.
5. We need to track progress in every area of sustainability: environmental, economic and social.

Pickering: Sustainability Indicators



We have identified 32 indicators that we can use to track progress towards a more Sustainable Pickering.

Pickering: Sustainability Indicators

Overview

Here is the list of the 32 indicators, grouped into the five areas of **Healthy Environment; Healthy Economy; Healthy Society; Responsible Development; Responsible Consumption.**

New information will be added throughout the year. We recommend that you bookmark this site and check it periodically to follow our progress in tracking the indicators.

One: Healthy Environment

Indicators	Why measure this?	What is the status of this indicator now?
Air quality health index	Air quality affects human health and quality of life.	We measured it. Read more.
Tree cover in Pickering as a percentage of overall area	Trees contribute to the health of the urban environment by storing carbon and providing habitat and shade.	We measured it. Read more.
Overall health of Frenchman's Bay/Duffins Creek/Altona Forest	These local environmental features are affected by the health of the immediate surrounding area.	We measured it. Read more.
Number of trees added under City's Urban Forest Strategy program	Trees contribute to the health of the urban environment by storing carbon and providing habitat and shade.	The information will be available later in 2010.
Water quality status of primary surface water systems in Pickering	Water quality is an important indicator of environmental health.	In 2010 a technical working group will determine the best approach to measure this indicator.
Aggregate biodiversity index status (including land, water, flora and fauna)	Loss of biodiversity makes ecosystems less stable and more vulnerable to extreme events, and weakens their natural cycles.	In 2010 a technical working group will determine the best approach to measure this indicator.

Pickering: Sustainability Indicators

Two: Healthy Economy

Indicators	Why measure this?	What is the status of this indicator now?
Ratio of population to jobs	A good balance of jobs to population in the community reduces the need for residents to commute and boosts the local economy.	We measured it. Read more.
Percentage of employees in EN3 businesses (energy/environment/engineering)	Pickering wants to become a centre for green industry, which relies on these kinds of jobs.	We measured it. Read more.
Number of EcoBusinesses (Ajax-Pickering Board of Trade EcoBusiness, Durham Sustain Ability EcoBusiness)	Greening businesses benefits not only the businesses themselves, but Pickering as a whole.	We measured it. Read more.
Inventory of local job postings	A balance of jobs and residents in the community reduces the need for residents to commute.	In 2010 a technical working group will determine the best approach to measure this indicator.
Percentage of population employed locally, or in a home-based business	People who do not need to commute long distances to work have a smaller carbon footprint.	We measured some home-based businesses. Read more. We also measured commuting distances. Read more. A community survey will be carried out in 2010 to gather additional information. In addition, in 2010 a technical working group will examine options to further measure this indicator.

Pickering: Sustainability Indicators

Three: Healthy Society

Indicators	Why measure this?	What is the status of this indicator now?
Average household income and percentage spent on housing costs	This indicator provides insight into the affordability of housing in Pickering.	We measured it. Read more.
Core crime statistics for Pickering and the Region	People walk and bike more in a safe community.	We measured it. Read more.
Number of kilometres of walking/cycling paths	Opportunities for active recreation support the health of residents.	We measured it. Read more.
Community health status	The health of community residents is a crucial indicator of sustainability.	A community survey will be carried out in 2010.
Community perception of crime and safety	We want to compare actual crime statistics with perceptions of safety.	A community survey will be carried out in 2010.
Community perception of sustainability	We want to know if our messages about sustainability are resonating with Pickering residents.	A community survey will be carried out in 2010.
Community participation index	We want to know if residents are taking part in our community activities or supporting sustainability in other ways.	A community survey will be carried out in 2010.
Healthcare index status	Factors such as participation in recreation activities, childhood obesity, hospital admissions and asthma rates are representative of the overall health of residents.	In 2010 a technical working group will determine the best approach to measure this indicator.

Pickering: Sustainability Indicators

Four: Responsible Development

Indicators	Why measure this?	What is the status of this indicator now?
Non-residential and residential floor area certified under recognized green building program (i.e., LEED, Green Globes, Energy Star)	This indicator tells us if our buildings are healthy and have a small carbon footprint.	We measured it. Read more.
Number of units (in buildings) that provide live-work opportunity	Opportunities to live and work in the same place can reduce the need to commute long distances. Sustainable communities provide both mixed-use buildings and live-work opportunities.	We measured it. Read more.
Number of hectares designated or being used for agricultural/related production	Local agriculture is not only important to the economy, it helps the local environment.	We measured it. Read more.
Percentage of residents commuting by transit, bicycle, walking; average commuting distance per capita	Community health is supported by active transportation and the use of public transit.	A community survey will be carried out in 2010.
Number of existing neighbourhoods that have achieved more than a 50% rating under the City's Sustainable Neighbourhood Scorecard	The scorecard is intended to measure whether Pickering's neighbourhoods are designed and function to support sustainable initiatives and actions, such as providing a mix of uses and housing types, opportunities for active transportation, and innovative stormwater treatment.	A draft scorecard has been prepared and is being refined for use later in 2010.

Pickering: Sustainability Indicators

Four: Responsible Development Continued

Indicators	Why measure this?	What is the status of this indicator now?
Percentage of new buildings that are “solar-ready”	Solar power reduces reliance on fossil fuels and thereby reduces greenhouse gas emissions.	In spring 2010, an initial inventory is being completed of commercial & industrial rooftops for potential solar power installations.

Five: Responsible Consumption

Indicators	Why measure this?	What is the status of this indicator now?
Per capita energy consumption and per capita greenhouse gas emissions by the City’s municipal operations	This is a crucial indicator for tracking the success of the City’s efforts to reduce energy use and greenhouse gas emissions, which contribute to climate change.	We measured it. Read more.
Per capita energy consumption and per capita greenhouse gas emissions for the community as a whole	Tracking community energy consumption and greenhouse gas emissions will help us assess the success of current conservation efforts and identify areas that need improvement.	We measured it. Read more.
Volume of water consumed per household	Water is a precious resource that takes energy to process and deliver.	We measured it. Read more.
Volume of wastewater discharged to sewers per household	Processing wastewater consumes energy.	We measured it. Read more.
Total amount of residential and non-residential solid waste sent to disposal	This indicator tracks progress on the 3Rs of reduce, reuse and recycle.	We measured residential waste. Read more.

Pickering: Sustainability Indicators

Five: Responsible Consumption Continued

Indicators	Why measure this?	What is the status of this indicator now?
Total economic value of local agricultural products and services	This indicator will track the strength of the local agricultural economy.	We measured the total economic value of local agriculture products. Read more . In 2010 a technical working group will determine the best approach to measure agricultural services.
Percentage of household food budget spent on locally grown foods	This indicator will let us know if Pickering residents are supporting local agriculture.	A community survey will be carried out in 2010.

Pickering: Sustainability Indicators

One: Healthy Environment

Air quality

The Air Quality Health Index (AQHI) is an indicator of outdoor air quality in Ontario. Generally, the lower the AQHI, the better the air quality. There are 38 AQHI monitoring stations across Ontario providing real-time air quality data and an AQHI reading for each location. Two stations are close to Pickering: Toronto East (Kennedy and Lawrence) and Oshawa (Durham College). Six key air pollutants are monitored by the Ministry of Environment as part of the AQHI:

- sulphur dioxide
- ozone
- nitrogen dioxide
- total reduced sulphur compounds
- carbon monoxide
- fine particulate matter

These pollutants are monitored because they have an adverse effect on humans and the environment at high levels.

- Moderate air quality is an AQHI from 32-49
- Poor air quality is from 50-99
- Very Poor air quality is an AQHI over 100

Air quality affects human health and quality of life.



Pickering: Sustainability Indicators

Measurement required: Number of days when the Air Quality Health Index (AQHI) was over 49 for at least 1 hour at the Toronto East Monitoring Station

The AQHI results directly reflect summer weather. Hot, dry summers (2005) have higher AQHI results (that is, more smog alert days) and cooler, wet summers (2009) have fewer smog alert days.

Baseline: The Air Quality Health Index (AQHI) was over 49 for at least 1 hour at the Toronto East Monitoring Station for the following number of days between 2005 and 2009.

- 2005 – 22 days
- 2006 – 9 days
- 2007 – 6 days
- 2008 – 2 days
- 2009 – 0 days

Where did the information come from?

- Ministry of Environment Annual Reports
- www.airqualityontario.com

What is the City doing to promote better air quality?

The City of Pickering is a member of the GTA Clean Air Council and has signed the Annual Declaration on Clean Air.

As part of its air quality efforts, Pickering has:

- adopted greenhouse gas reduction targets and action plans through the Partners for Climate Protection program
- developed Sustainable Neighbourhood development guidelines
- participated in Pollution Probe's Clean Air Commute and Energy Conservation Week
- joined the Smart Commute Durham program
- passed a resolution to undertake an Urban Forest Strategy and is gathering baseline data for development of that Strategy
- adopted an Idling of Vehicles By-law (6297/04)

Pickering: Sustainability Indicators

- invested in alternative fuel options for the City's fleet and purchased five hybrid-electric vehicles as well as a street sweeper certified by the Air Quality Management District (AQMD) Rule 1186

In approving new development, the City emphasizes and incorporates designs for enhanced pedestrian connections and accessibility, cycling facilities and transit access, to reduce the reliance on the private automobile, since automobile use reduces air quality.

What can you do to promote better air quality in Pickering?

- turn off your car engine instead of idling it
- avoid using drive-throughs
- keep your vehicle tuned up and tires properly inflated
- join a carpool or use public transportation to get to work
- walk or cycle instead of using your car
- telecommute instead of commuting to work
- when driving, plan your routes for efficiency and combine trips whenever possible
- take advantage of one or more of the Air Quality programs available through [Summerhill Impact](#), such as:
 - Appliance Switches
 - Car Heaven
 - Keep Cool
 - Mow Down Pollution
 - Retire Your Ride
 - Switch Out
 - Switch the 'Stat

Pickering: Sustainability Indicators

Trees contribute to the health of the urban environment.

Tree cover in Pickering

Trees provide a range of environmental benefits. An acre of mature trees can capture 2.6 tonnes of carbon dioxide per year. Trees also provide shade from the sun in summer and serve as habitat for birds and other wildlife.

Measurement required: Number, species, width, height and health of trees as a percentage of the urban area

An Urban Forest Study was carried out by the Toronto and Region Conservation Authority for the City of Pickering. The report is due in summer 2010. The study covers the urban area only. As part of the study, a random sampling of the trees was taken for more than 200 plots during summer 2009 and information was collected on the number, species, caliper (trunk width), height and health of the trees in each plot.

This information was sent to the USDA Forest Services for analysis using the Urban Forest Effects (UFORE) model. The model will provide information on the current health of the City's urban forest and provide recommendations for managing and enhancing our forest cover for a sustainable community.

Baseline: We are awaiting results from the analysis of data collected in 2009.



Where did the information come from?

- Toronto and Region Conservation Authority
- USDA Forest Services

What is the City doing to promote tree cover?

In addition to undertaking an Urban Forest Study program, the City currently has a spring and fall tree planting program. Boulevard trees are planted to replace ones that are dead or dying as well as providing additional trees where suitable. Tree planting is also done in the City parks, especially focusing on adding trees around children's play areas to provide shade. The City is also establishing partnerships with local businesses such as Home Depot and Purdue Pharma to plant additional trees. This planting program will continue, using the direction provided by the Urban Forest Study. The City will also be preparing an Urban Forest Strategy, which will provide further guidance to planting programs.

Pickering: Sustainability Indicators

The City administers a Tree Protection By-law. For example, as a condition of development approval in the Rosebank Neighbourhood, where tree cover was removed, the subdivider was required to make a financial payment to allow replacement of trees elsewhere in the neighbourhood. Also, as a condition of development approval in the Duffin Heights Neighbourhood, where tree cover is being removed, the subdivider will be required to replant and enhance forest cover in other specified areas in the neighbourhood.

What can you do to promote tree cover in Pickering?

- participate in a tree planting event
- plant trees on your own property
- participate in Pickering's [tree dedication program](#)



These local environmental features are affected by the health of the immediate surrounding area.

Monitoring the health of (a) Frenchman's Bay, (b) Duffins Creek and (c) Altona Forest

Frenchman's Bay

Frenchman's Bay is a shallow coastal lagoon on the Lake Ontario shoreline, protected by a barrier beach. It is well used by residents and visitors for walking, boating and fishing. The Toronto and Region Conservation Authority and the University of Toronto both intend to conduct research on the Bay, commencing in 2010, to better assess the environmental conditions of the Bay and determine possible causes for an observed decline in ecosystem function. The results of these and other studies will be used by the City in monitoring the health of the Bay. For now, the City will be tracking two Frenchman's Bay indicators: number of fish species and presence of wild celery.

Measurement required: Number of fish species in Frenchman's Bay

About 31 fish species are found in Frenchman's Bay. This number has remained steady between 1991 and 2008. A stable number of fish species is an indicator of good health for this provincially significant coastal wetland.

Baseline: 31 fish species.

Measurement required: Presence of wild celery plants on the shoreline of Frenchman's Bay

The health of a wetland is also measured by the type of plants found. In Frenchman's Bay, we will monitor the presence of wild celery (*Vallisneria americana*), an aquatic plant species that is sensitive to muddy or clouded water. Its presence indicates that portions of the Bay are generally clear. An increasing number of wild celery plants would be a strong indicator of good health for the Bay.

Baseline: 4 out of the 5 locations studied had more than 100 wild celery plants present.

Where did the information come from?

- Toronto and Region Conservation Authority

Pickering: Sustainability Indicators

What are the City and Others doing to promote the health of Frenchman's Bay?

The City has completed a Frenchman's Bay Stormwater Management Master Plan. The Master Plan recommends a suite of projects, programs and policies to help control the quantity and quality of stormwater runoff in the watershed, in order to restore and enhance the ecological health of the Bay. Specific projects will be implemented in future years following more detailed investigations.

In 2010 the City will be pursuing the acquisition of lands within the watershed for a new stormwater management facility. The City is also planning to secure the sides of the Vistula Ravine to protect them from further erosion.

To keep its waterways clean and promote a healthy environment along the lakeshore, the City of Pickering:

- coordinates a [Goose Control Program](#), to reduce the problems caused by Canada Geese, which contaminate shoreline areas
- partners with the Toronto and Region Conservation Authority on the [Yellow Fish Road](#) storm drain marking program to raise awareness that what goes into storm drains goes directly into streams, rivers and the lake
- administers a [Fill and Topsoil Disturbance By-law](#) to prevent sediment from entering the watersheds
- works in partnership with other groups to naturalize our shorelines and use native plantings where possible – more than 24,000 native plants have been planted to date near Frenchman's Bay
- encourages wildlife: 500 wildlife habitat structures and 250 songbird boxes have been installed, as well as a snake hibernaculum in Alex Robertson Park
- in partnership with TRCA, distributed 300 rain barrels to homeowners



Pickering: Sustainability Indicators

- supports Environmental Stewardship Pickering (ESP), an outreach and educational resource for all residents of Pickering; ESP holds an annual Environmental Leadership Forum to train community residents undertaking stewardship activities



What can you do?

- help clean up litter and garbage in shoreline areas by participating in the [20 Minute Makeover](#), [TD Great Canadian Shoreline Cleanup](#) or host a [Pitch in Party](#)
- report illegal dumping, litter and graffiti through the [Eyes on the Street program](#)
- be aware of actions you take on your property. Fertilizers, insecticides or other chemical substances you use on your property can be washed off during a storm; these substances travel with surface water into the stormwater drain which empties into lakes and rivers



Duffins Creek

The Duffins Creek watershed covers approximately 300 square kilometres from the southern end of Uxbridge to where it drains into Lake Ontario. The watershed of the creek and its tributaries crosses over into many other municipalities, including the City of Pickering.

In 2002 the Toronto and Region Conservation Authority (TRCA) developed a [Watershed Report Card](#) that provides an overall rating on a number of environmental indicators for Duffins Creek. The report highlighted where further monitoring and study was required. Monitoring efforts are ongoing and the City is working to restore the quality of these watersheds.

Measurement required: Percent of the watershed area occupied by natural cover

Natural cover (trees, bushes, meadows and other forms of vegetation) is needed to support biodiversity and enhance recreational uses. The quantity of natural cover is measured by calculating the percent of the total watershed area that is forest, meadow, wetland or other natural types of land cover. In 2002 the percentage of natural cover was 37%. The target is at least 49% coverage, so the cover was 77% of the target. The Watershed Report Card marks this indicator as "Good." To meet the target, a natural heritage system must be set aside to protect the natural biodiversity of the watershed. The City is working towards this target, by, for example, planning to set aside over 50% of the lands in the [Seaton Community](#) as green space. Seaton is within the Duffins Creek watershed.

Baseline: In 2002 the percentage of natural cover was 37%.

Measurement required: Presence of cold water fish species

The presence of cold water fish species such as brook trout is an indicator of a healthy aquatic ecosystem in the Duffins Creek watershed. The Duffins Creek watershed is rated as "Good," based on the number and diversity of cold water species of fish observed through monitoring work and the presence of brook trout at several monitoring stations. In fact, all the cold-water species expected to reside in the Duffins Creek are present and no cold-water species are missing from the watershed that should be there.

Baseline: 6 coldwater fish species are present.

Where did the information come from?

- Toronto and Region Conservation Authority

What are the City and Conservation Authority doing to promote the health of Duffins Creek?

Developers who want to build in the Duffin Heights Neighbourhood (through which several tributaries of Duffins Creek flow) are required to submit, as a condition of approval, several reports: a Functional Servicing and Stormwater Report; a Monitoring Report; a Natural Heritage Compensation Report. Developers are also required to make contributions to various funds: a Fish Habitat Restoration Fund, a Watershed System Monitoring and Management Fund and an Adaptive Management Fund.

Pickering: Sustainability Indicators



Pickering partners with Toronto and Region Conservation (TRCA) on the [Yellow Fish Road](#) storm drain marking program to raise public awareness that what goes into storm drains goes directly into our streams, rivers and the lake. The City has also partnered with the TRCA since 2006 to do an annual salmon release. The City also administers a [Fill and Topsoil Disturbance By-law](#) to prevent sediment from entering the watersheds.

What can you do?

Be aware of actions you take on your property. Limit or eliminate your use of fertilizers, insecticides and other chemical substances on your property; these substances may be washed off during a storm and can travel with surface water into the stormwater drain which empties into lakes and rivers.

Altona Forest

The Altona Forest is bordered by Altona Road to the west, Rosebank Road to the east, Finch Avenue to the north, and Sheppard Avenue to the south. It is situated within the Petticoat Creek watershed and covers about 53 hectares (102 acres). In 1982, the forest was designated an environmentally significant area due to its ecological and historic importance. The forest is owned by the Toronto and Region Conservation Authority; maintenance and monitoring is carried out in conjunction with the volunteer [Altona Forest Stewardship Committee](#). Monitoring at Altona Forest is relatively new, but the change in the number of amphibian species is a significant indicator of health.



Pickering: Sustainability Indicators

Measurement required: Amphibian population

The number of amphibians (such as frogs, toads, salamanders and newts) is an indicator of whether a certain area is healthy enough to support wildlife.

Twenty years ago, there were 6 amphibian species in Altona Forest. Housing construction around Altona Forest changed the groundwater levels and dried up the ponds. Extensive work has been done to rehabilitate the old Lacey's Pond and to build a new pond to encourage the toads and frogs to return on their own. Monitoring continues for past Altona Forest species including the grey tree frog, wood frog, American toad, green frog, chorus frog, pickerel frog, leopard frog and spring peeper. The Toronto Region Conservation Authority (TRCA) is also monitoring the red back salamander and spotted salamander. Both are very good indicators of the health of Altona Forest.

The change in the number of species indicates an improvement in the health of the forest in recent years:

- 1989 – 6 species
- 1999 – 0 species
- 2006 – 1 species (due to the rehabilitation of Lacey's Pond in Altona Forest)
- 2008 – 4 species (due to the construction of a new pond)

Baseline: 4 species present: wood frog, green frog, grey tree frog and American toad.

Measurement required: Groundwater levels

This is a new indicator of health within Altona Forest. Monitoring is being coordinated with the Toronto and Region Conservation Authority, the Altona Forest Stewardship Committee and Dunbarton High School's environmental science class.

Baseline: Since this is a new method to examine health of Altona Forest, the baseline has not yet been determined.

Where did the information come from?

- Toronto and Region Conservation Authority
- Altona Forest Stewardship Committee
- Dunbarton High School

Pickering: Sustainability Indicators

What are the City, Conservation Authority and Stewardship Committee doing to promote the health of Altona Forest?

One pond has been rehabilitated and another pond created to encourage amphibian and reptile rehabilitation in the forest. Members of the Altona Forest Stewardship Committee have developed information and educational guides that are available on the website www.altonaforest.org. Clean-ups and rehabilitation projects are regularly carried out with the participation of members of the public.

Since Altona Forest was acquired by the TRCA, nearly 5 km of trails have been installed, along with interpretative posts and a parking lot. The trails help people enjoy the forest, which builds awareness and fosters appreciation.

What can you do?

- help clean up litter and garbage by participating in the [20 Minute Makeover](#) or host a [Pitch in Party](#)



- report illegal dumping, litter and graffiti through the [Eyes on the Street](#) program
- participate in tree planting events
- stay on the designated trails and keep dogs on a leash
- get involved in the many events that take place in the forest, such as identification workshops, tree plantings, invasive species removal, clean ups, interpretive hikes
- participate in the [trail steward program](#)
- if you live near the forest, be a good steward of your own property since actions such as the use of chemicals, invasive plantings, or water diversion on your property affect the health of the forest

Pickering: Sustainability Indicators

Two: Healthy Economy

Ratio of population to jobs

The more people who live and work in the same community, the healthier the economy of the community. Not only is commuting reduced, but money circulates within the community and supports prosperity.

A balance of jobs to population boosts the economy.

Measurement required: Number of residents/Number of jobs in Pickering

The City's current population is approximately 94,000 and there are 33,000 jobs, therefore our residents to jobs ratio is currently 3:1.

The City has a target population-to-jobs ratio for specific areas within Pickering, and is considering intensification options that could improve our overall ratio. The targeted ratio for the [Seaton Community](#) is 2:1 (based on a population of 70,000 and 35,000 jobs). The targeted population to jobs ratio for Downtown Pickering is 1:1.

When calculating the population to jobs ratio, the standard practice is to use overall, or total population; because children and seniors are not part of the labour force (but are included in overall population) another way to measure the health of our economy is to consider our labour force. The labour force includes persons 15 years of age or over who are available for work and were either employed or unemployed during the week prior to Census day (i.e. May 16, 2006). Based on 2006 Census data, the population in Pickering was 87,838 and the labour force was 51,015 people. This translates into a labour force to jobs ratio of under 2:1.

Another way to look at the health of our economy is to count the number of people who both live and work in Pickering. According to 2006 Census data, 8,340 people both lived and worked in Pickering.

Baseline: 3 residents for every job in Pickering.

Where did the information come from?

- Office of Sustainability, City of Pickering
- Planning & Development Department, City of Pickering

What is the City doing to boost the number of jobs relative to the population?

The City of Pickering delivers a comprehensive economic development program targeted at business attraction, retention and expansion, as well as small business support services.

Pickering: Sustainability Indicators

The City of Pickering is also a founding member of the Durham Strategic Energy Alliance (DSEA), which promotes the growth of the energy cluster in Durham. The City wants to build on its emerging cluster of Energy, Environment and Engineering (EN3) companies.

The City of Pickering fast-tracks development applications that will lead to the establishment of major employers in the City.

Existing zoning in established employment areas also discourages employment land conversion to residential and non-compatible uses.

What can you do to improve the jobs to population ratio?

- look for employment within the area where you live, or create your own business in Pickering
- purchase local products and services to enhance local business prosperity
- be a City Ambassador and promote the benefits of locating a business in Pickering



Pickering: Sustainability Indicators

Percentage of employees in EN3 businesses (energy/environment/engineering)

Pickering has long been home to many businesses in the energy sector which have clustered around Ontario Power Generation's nuclear generating station. Because of our on-going need to produce nuclear energy, as well as our growing interest in alternative energy and eco-friendly processes, the City has seen a marked increase in companies opening offices in Pickering (including Areva, SNC-Lavalin, Kinectrics Inc. and Candu).

Pickering has also seen growth in the number of engineers based in the community, working for engineering firms (such as Wardrop, SNC-Lavalin, Burnside Engineering), and manufacturing firms connected to the energy and environmental sectors (such as Aker Solutions, Howard Marten, Crosby Dewar, Intellimeter, Eco-Tec).

New environmental based businesses are arriving as well, including Indaco Manufacturing (compostable bags), WC Environmental (eco-friendly cleaning solutions) and the expansion of Miller Waste to include a regional composting facility. In 2009, four solar panel manufacturers inquired about locating in Durham Region.

Pickering wants to become a centre for green industry, which relies on these kinds of jobs.

Measurement required: Percentage of Pickering jobs in energy, environment and engineering sectors

At present, there are about 33,000 jobs in Pickering, of which about 7,500 are in the EN3 sector.

Baseline: 23% of Pickering's current employment base is in the energy, environment and engineering sectors.

Where did the information come from?

- Office of Sustainability, City of Pickering

What is the City doing to promote growth in these sectors?

Pickering has an ongoing marketing and economic development program to retain and expand the local EN3 cluster. [Seaton](#) will also have a focus on "green-collar" jobs and EN3 company attraction.

Pickering: Sustainability Indicators

The City of Pickering is a founding member and creator of the Durham Strategic Energy Alliance (DSEA), which promotes the growth of the energy cluster in Durham.

What can you do to promote growth in this sector?

Spread the word about Pickering's strength in this area among your business contacts and friends – you never know where the next great business idea may come from.



Pickering: Sustainability Indicators

Number of EcoBusinesses in Pickering

The [Ajax-Pickering Board of Trade](#) (APBOT) EcoBusiness “Checklist” program is for members of the Board of Trade. Members receive a checklist of low-cost actions to evaluate whether they are doing all they can to sustain a cleaner environment in the following categories:

- transportation and equipment
- water conservation
- pollution and waste reduction
- energy conservation

Businesses receive a certificate of achievement for performing a certain number of actions.

[Durham Sustain Ability](#)'s (DSA) EcoBusiness program is open for any business to join, regardless of where they are located, although most members are from Durham Region. DSA helps its members find practical solutions to make their businesses greener and more successful. A business needs to commit to four key actions: (1) senior management commitment; (2) appointment of a staff coordinator; (3) adoption of Action Plans; and (4) submission of an annual status report.

Greening businesses benefits not only the businesses themselves, but Pickering as a whole.

Measurement required: Number of Pickering businesses certified by the Ajax-Pickering Board of Trade or Durham Sustain Ability

These certification programs were created in 2008 and the number of EcoBusinesses is expected to rise over the coming years. There is no fee attached to either the APBOT or DSA EcoBusiness certification. The two organizations work in cooperation with each other.

Baseline: APBOT has 7 Pickering EcoBusinesses out of a total of 23 and Durham Sustain Ability has 23 registered Pickering EcoBusinesses out of a total of 70.

Where did the information come from?

- Ajax-Pickering Board of Trade
- Durham Sustain Ability

Pickering: Sustainability Indicators

What is the City doing to promote EcoBusinesses?

The City offers annual Civic Awards for sustainability, environment, volunteerism, economic development and other categories. It assisted in the development and delivery of the APBOT EcoBusiness program and is represented on the APBOT Environment Task Force.

In future, the City plans to explore other forms of recognition for green buildings and sustainable business practices, as well as promote other similar industry awards to highlight sustainable activities of Pickering businesses.

For example, the City's website recognizes that the Pickering Town Centre (PTC), has won numerous awards, including the 2009 Recycling Council of Ontario Waste Minimization Gold Award in the Facilities category. In 2009 the Building and Owners Managers Association of Canada (BOMA) certified PTC with a BOMA BEST Level 3. This certification stipulates that PTC met all of the BOMA Go Green Best Practices in environmental management, and received a score of 88% on the Go Green Plus assessment.

What can you do to promote EcoBusinesses?

You can encourage your employer to become an Eco Business. Also, when you shop locally or deal with local service providers, ask them about their environmental practices and encourage them to become an EcoBusiness.



Pickering: Sustainability Indicators

Three: Healthy Society

Average household income and percentage spent on housing

This indicator is related not only to local economic indicators, but also to the social health of the community. Ensuring a good balance of jobs and population means that people working in all sectors of the economy should be able to afford to live in Pickering. A supply of affordable housing also means that Pickering is an inclusive and welcoming community to a diverse range of household types.

This indicator provides insight into the affordability of housing in Pickering.

Measurement required: Average household income for Pickering residents

Average household income is a way of measuring the economic health of a community. It can be compared to regional, provincial and national averages.

Baseline: Projected from the Financial Post Markets 2009 annual report, the average household income in Pickering is \$110,427. This is 29% higher than the national average.

Measurement required: Percentage of household income spent on housing (shelter, taxes and securities)

The percentage of income spent on housing (shelter, taxes and securities) tells us about the affordability of housing in the community. The more households spend on housing, the less they have for other things, from basics like food, to discretionary items such as entertainment. According to Pickering's Official Plan, housing is affordable if it costs less than 30% of a household's annual income.

Baseline: Projected from the Financial Post Markets 2009 annual report, the average expenditure on housing is \$49,240 (shelter: \$18,643, taxes/securities: \$30,597). Therefore, 45% of the average Pickering household income is spent on housing. This is 2% higher than the national average.

Where did the information come from?

- Statistics Canada 2006 Census
- Financial Post Markets Canadian Demographics 2009 annual report
- Planning & Development Department, City of Pickering

Pickering: Sustainability Indicators

What is the City doing to promote affordable housing?
Pickering is undertaking an Affordable Housing Strategy as part of the [Seaton Neighbourhood Planning Review](#).

Meanwhile, development applications for other parts of the City are reviewed for their mix of housing, with the objective of providing housing that is affordable to a range of income levels. The Regional and Pickering Official Plans require 25% of all units produced in each area municipality to be affordable to low and moderate-income households.

Planning policies encourage higher density intensification and a balance of housing types.

What can you do to support affordable housing in Pickering?

Support the City's efforts to promote affordable housing in all parts of the municipality for a variety of income levels.



Pickering: Sustainability Indicators

Crime statistics for Pickering and the Region

Safety is important to ensure Pickering's prosperity and social health. Pickering residents should feel safe wherever they go in the community and should feel that their homes and businesses are protected from crime.

People walk and bike more in a safe community.

Measurement required: Number of crimes against persons and against property, and other Criminal Code violations

According to the 2008 Annual Report of the Durham Regional Police Service, "The crime rate in Durham Region is among the lowest compared to eight comparable communities." Even though the population of the Region has increased, between 2007 and 2008 the number of crimes against the person decreased, along with various other Criminal Code violations. A slight increase in the number of crimes against property was caused by an increase in fraud (including debit and credit card theft and identity theft) in 2008. In Pickering, Criminal Code violations decreased by 5.8% in 2008, relative to 2007.

Baseline: Total Criminal Code violations in 2008 for Ajax-Pickering (Division 19), excluding traffic violations, was 8,764.

Where did the information come from?

- Durham Regional Police Service Annual Report

What is the City doing to discourage crime?

In partnership with the Durham Regional Police Service, the City of Pickering coordinates the [Eyes on the Street](#) program to encourage residents, local businesses and City staff to report problems that affect the quality of life in Pickering. The program's other partners are the Ajax-Pickering Board of Trade, Region of Durham, Durham District School Board and the Durham Catholic District School Board.

What can you do to discourage crime?

Look around when you are driving in the City, walking the dog, or out for a stroll or a jog. If you see an area or an item within the City that has been targeted with graffiti, illegal dumping, litter or vandalism, contact the City and report the incident and its location. You can report by telephone or [online](#) through the Eyes on the Street program.

[Neighbourhood Watch](#) is another organization that encourages neighbours to work together to keep an eye

Pickering: Sustainability Indicators

out for problems. Talk to your neighbours and [Durham Regional Police](#) if you would like to participate.



Pickering: Sustainability Indicators

Number of kilometres of walking/cycling paths

A healthy community is one in which all residents have plenty of opportunities to get fresh air and exercise. Walking trails are increasingly popular, since they can be used by people of all ages and all income and fitness levels. Cycling is also gaining in popularity as a form of active transportation.

Opportunities for active recreation support the health of residents.

Measurement required: Kilometres of paths

At present, Pickering has 43.7 km of trails for walking and cycling and 4.5 km of off-road biking trails for a total of 48.2 km.

Walking and cycling trails: Total 43.76 km

- Waterfront Trail from Ajax/Pickering border to Scarborough: 12 km
- Seaton Trail: 10 km
- Trans-Canada Trail: 14 km
- West Duffins Trail: 3.5 km
- Pine Creek Trail and bridge: 0.93 km
- Alex Robertson Park walk: 1.44 km
- Diana, Princess of Wales Park walk: 1.89 km

Bikeways (off-road): Total 4.49 km

- Pickering Parkway: 1.34 km
- Bayly Street (Liverpool Road to West Shore Boulevard): 1.69 km
- Brock Road (Kingston Road to Centennial Park): 1.46 km

Bikeways (on-road): Total 6.28 km

- Granite Court (Rosebank Road to Whites Road): 0.91 km
- Pickering Parkway (Liverpool Road to Glenanna): 0.72 km
- West Shore Boulevard (Vistula Drive to Oklahoma Drive): 0.74 km
- Strouds Lane (Altona Road to Rosebank Road): 0.90 km
- Rosebank Road (Sheppard Avenue to Finch Avenue): 2.0 km
- Woodview Avenue (Pinegrove Avenue to Finch Avenue): 1.01 km

Baseline: Pickering has a total of 48.2 km of trails.

Where did the information come from?

- Operations & Emergency Services Department, City of Pickering
- Planning & Development Department, City of Pickering

Pickering: Sustainability Indicators



What is the City doing to increase the number of trails in Pickering?

The City is currently undertaking the Seaton Neighbourhood Planning Review. A key design of the neighbourhoods will be to connect to a series of trails that have been identified for the Natural Heritage System.

The trail system will also be expanded when an enclosed pedestrian bridge is constructed over Highway 401 between the GO Station and the Pickering Town Centre.

Several new trails have been proposed and should be complete by 2013, totalling 12.9 km:

- Duffin Heights, west of Brock Road: 2.3 km
- Duffin Heights, east of Brock Road: 1.7 km
- Brock Road from Dellbrook Avenue to the 3rd Concession: 1.011 km
- Brock Road from 3rd Concession to Taunton Road: 2.229 km
- Brockridge Park (including pedestrian bridge): 0.195 km
- Altona Road from Kingston Road to Strouds Lane: 2.0 km
- Lakeridge Road from 5th Concession to Hwy 7: 2.068 km
- Bayly Street from Waterfront Trail to GO Station: 1.4 km



The following trails will be built after 2013:

- Wharf Street to Sandy Beach Road: 0.70 km
- Bayly Street from GO Station to Church Street (Ajax border): 3.1 km

What can you do to support the City's trails program?

Make good use of Pickering's trails. Find out where they are and enjoy them on foot or on your bicycle. Encourage your family members and friends to use them too.

Pickering: Sustainability Indicators

Four: Responsible Development

Non-residential and residential floor area certified under recognized green building programs (i.e., LEED, Green Globes, Energy Star)

Green buildings are those that are designed to use resources such as energy, water and building materials efficiently. As a result, they produce lower emissions of greenhouse gases in their construction and use.

Our buildings are healthy and have a small carbon footprint.

Measurement required: Square feet or square metres of green buildings in Pickering

There are currently five Pickering projects listed with Canadian Green Building Council (CaGBC) for certification under the LEED program (Steeple Hill–General Paints, the Duffins Creek WPCP Biosolids Facility, Home Depot–Pickering #7238, Pickering GO Station rehabilitation, and the 20 Vic Pickering Town Centre Office Building and parking structure). These retail/commercial, industrial and transportation projects total 60,996 m² (656,561 ft²) of recognized LEED standard construction.

Coughlin Homes is also completing construction of 80 townhomes at the corner of Brock Road and Kingston Road that are registered with the Energy Star program. This represents approximately 5,600 m² (18,375 ft²).

Baseline: 60,996 m² (656,561 ft²) of LEED-certified buildings and 5,600 m² (18,375 ft²) Energy Star buildings.

Where did the information come from?

- Office of Sustainability, City of Pickering
- Planning & Development Department, City of Pickering

Information on LEED registered developments is available on the [CaGBC](#) website. At present, however, the City has no formal procedure for tracking other developments that may have some “green” characteristics but that are not following LEED.

What is the City doing to promote green development?

The City has draft [Sustainable Development Guidelines](#) that can be used to rate the level of sustainability in a development. Developers must submit a Sustainable Development Report comparing their proposal to the City’s guidelines. In 2009, City Council passed a resolution requiring all development to attain a minimum number of points under

Pickering: Sustainability Indicators

the guidelines. The guidelines currently have three levels and Council is requiring new development to meet Level 1. City staff promote sustainable development and design during initial consultations with potential developers and investors and the City expedites development applications seeking to achieve a “green” rating under a recognized program.

What can you do to promote green development?

Before buying a house, find out about the developer’s commitment to sustainability and the environment. Does your new home have environmentally friendly and energy-conserving components?

You can also carry out retrofits and enhancements to improve the energy efficiency of your home or business premises.



Pickering: Sustainability Indicators

Number of units (in buildings) that provide live-work opportunities

Sustainable communities provide both mixed use buildings and live-work opportunities. Home-based businesses support the local economy, create jobs and reduce commuting.

To live and work in the same place can reduce the need to commute.

Measurement required: Number of Home-Based Businesses (HBBs)

HBBs are businesses run from residential homes in residential neighbourhoods, as permitted by a Municipal By-law.

A home-based business is defined as one that uses less than 25% of the house area to a maximum of 50 m² (500 ft²). Registration costs \$50 and is valid for one year only.

At present, licensing of HBBs is considered voluntary, and many people do not realize that they need to renew their licence every year; therefore the City does not have complete statistics on home-based businesses. In addition to forming part of the community-wide survey, a technical working group will examine options to further measure this indicator.

As a result, the number of registered HBBs shown below is not an accurate representation of the total number of home-based businesses in Pickering. The City's business directory identifies approximately 800 home-based businesses in the City. Planning standards generally assume that 2% - 3% of the total population will work from a home-based business.

Baseline: In 2009, 71 home-based business licenses were issued.

Measurement required: Number of Live-work Units

Live-work units are separate and distinct from home-based businesses. In live-work units, business uses are permitted by a site-specific Zoning By-law issued under the Planning Act.

There are currently:

- 15 units on 1250 St. Martins Drive are zoned SA-LW (Single Attached Live Work)
- 21 units on 1295 Wharf Street are zoned MU-16 (Mixed Use)
- 17 units on Liverpool Road, north of Lake Ontario and east of Frenchman's Bay are zoned MU-14 (Mixed Use)

Baseline: As of January 2010, there were 53 units in the City of Pickering zoned as "live-work" properties.

Pickering: Sustainability Indicators

Where did the information come from?

- Corporate Services Department, City of Pickering
- Office of Sustainability, City of Pickering
- Planning & Development Department, City of Pickering

What is the City doing to encourage live-work units and home-based businesses?

The City approves building designs that offer live-work opportunities, where appropriate, such as those within the Nautical Village (Liverpool Road South) or San Francisco by the Bay (St. Martins Drive). In these cases, site-specific zoning was approved with residential condominiums above ground-floor commercial uses.

Pickering has also passed a zoning By-law permitting home-based businesses. New small business owners are directed to the Clerk's office and informed of the By-law 5195/98 requiring annual licensing. A technical working group will investigate additional ways to gather data about home-based businesses.

What can you do to support home-based businesses?

- purchase products and services from local home-based businesses
- support and encourage mixed commercial/retail services within residential neighbourhoods



Pickering: Sustainability Indicators

Number of hectares designated or being used for agricultural or agriculture-related production

A large proportion of the City of Pickering is rural land. Where this land is actively used for agriculture, it represents economic productivity and jobs, a potential source of locally grown food, and the opportunity to practice environmental stewardship

Local agriculture is not only important to the economy, it helps the local environment.

Measurement required: Number of hectares designated for agricultural use

8,850 hectares of land are designated for agricultural purposes in Pickering's Official Plan. According to the 2006 Census of Canada, however, 4,327 hectares (10,692 acres) of farmland in Pickering are currently owned, rented, leased, or crop-shared.

Baseline: 8,850 hectares designated; 4,327 hectares currently used as farmland.

Where did the information come from?

- Planning & Development Department, City of Pickering
- Statistics Canada, 2006 Census

What is the City doing to protect and promote agriculture in Pickering?

Planning for intensification within the existing built-up area will reduce the need to expand the urban area onto agricultural land. The City of Pickering also promotes through its official plan and other means, vibrant rural settlements and a healthy rural economy.

What can you do to protect and promote agriculture in Pickering?

- support urban intensification in order to protect agricultural land
- purchase local agricultural products and support local farmers' markets



Pickering: Sustainability Indicators

The success of corporate efforts to track energy use and emissions, helps address climate change.

Per capita energy consumption and per capita greenhouse gas emissions for the City of Pickering's municipal operations

It is important to track energy consumption and greenhouse gas emissions together. Tracking energy consumption shows how well the City is conserving energy. Tracking greenhouse gas (GHG) emissions provides information on whether that energy is coming from fossil fuels or alternative, cleaner forms of energy, such as solar or wind power.

Measurement required: Gigajoules (GJ) of energy consumed by the City's operations as a total and relative to the population

A gigajoule is equal to one billion joules, which are units of energy used to measure energy content. One gigajoule equals 948,200 BTU or 248 kilowatt-hours.

From 1995 to 2008, the City of Pickering's municipal operations energy use per capita increased by only 1%. That means that Pickering's municipal operations use is increasing at about the same rate as the increase in population.

Baseline: 2008 Municipal Operations Per Capita Energy Consumption was 1.35 gigajoules per Pickering resident, a 1.1% increase from 1995.

Measurement required: Tonnes of carbon dioxide (CO₂) emitted by the City's operations as a total and relative to the population

Carbon dioxide is the main form of greenhouse gas that contributes to global climate change.

The significant increase in per capita municipal operations GHG emissions between 1995 and 2008 is mainly due to the change in what is known as the annual provincial electricity eCO₂ (environmental carbon dioxide) **coefficient**. The coefficient is a measure of the annual mix of electricity production from fossil fuels relative to other, cleaner energy sources. The mix affects the amount of greenhouse gas emissions per kilowatt-hours of electricity produced. The coefficient has increased during this period because of the higher use of fossil fuels such as coal to produce electricity.

Baseline: 2008 Municipal Operations Per Capita GHG Emissions were 0.074 tonnes eCO₂ (environmental carbon dioxide) per person, a 15.6% increase from 1995 but a decrease of 12% from 1999 levels.

Where did the information come from?

- Durham Sustain Ability

What is the City doing to reduce corporate energy use and greenhouse gas emissions?

Several recently completed energy-efficiency initiatives will reduce energy consumption and greenhouse gas emissions.

These projects include:

- upgrading of HVAC systems at the Civic Complex, the Recreation Complex and the West Shore Community Centre
- installation of automated control systems and a green roof at the Recreation Complex
- relamping projects at the Civic Complex and East Shore Community Centre
- upgrades to the boiler and fuel switch at Greenwood Library
- upgrades to the building envelope and HVAC system at Dunbarton Pool
- retrofitting of all arena ice resurfacers with catalytic converters
- relamping of all traffic lights to high-efficiency LEDs (light-emitting diodes)
- replacement of inefficient City vehicles with hybrid vehicles



These projects will reduce energy consumption by 8,289 GJ per year and GHG emissions by 426 tonnes eCO₂ a year, a reduction of more than 8% in both energy and GHG emissions compared with 2007. The City is also saving approximately \$200,000 a year in energy and operating costs.

The City of Pickering participates in Earth Hour and Pollution Probe's annual Clean Air Commute program. City employees are also encouraged to choose clean-air commuting options. The City also offers staff Lunch 'n' Learn sessions on eco-driving, energy conservation and bicycle maintenance.

Pickering: Sustainability Indicators

A new pedestrian bridge across the 401 will also help make it easier for Pickering residents to walk to transit.

The City has established the following per capita energy consumption target and corresponding per capita GHG emissions target for municipal operations by 2016:

- 2016 Municipal Per Capita **Energy Consumption Target:** 0.67 GJ (gigajoules) per resident, a 50% reduction relative to 1995 figures
- 2016 Municipal Per Capita **GHG Emissions:** 0.050 t eCO₂ (environmental carbon dioxide) per resident, a 22% reduction relative to 1995 figures

The 50% reduction target is the key corporate performance target, because GHG emissions can change significantly depending on the mix of fossil fuels and clean energy sources used to produce electricity across the province as a whole.

To meet the 2016 target, the City must further reduce energy consumption and GHG emissions by 2,832 GJ each year and 566 t eCO₂ each year, in addition to the reductions to date and those planned for 2010. This corresponds to a 3.9% per capita reduction in energy and GHG emissions each year until 2016.

All future and new city projects will be designed to energy-efficient standards, with improved insulation and green roofs where appropriate, and access to alternative energy sources, such as solar panels. For example, the expansions to Don Beer Arena will be carried out with energy conservation as a focus.

The City has at least 11 energy conservation initiatives planned for 2010 including:

- installing a green roof at the Don Beer arena
- carrying out 7 HVAC upgrade projects at the Don Beer arena, the Recreation Complex and the Civic Complex
- upgrading the building envelope at East Shore and West Shore Community Centres
- retrofitting riding lawn mowers and snow removal vehicles with catalytic converters



Pickering: Sustainability Indicators

Five: Responsible Consumption

Per capita energy consumption and per capita greenhouse gas emissions for the community as a whole

It is important to track energy consumption and greenhouse gas emissions together. Tracking energy consumption shows how well the City is conserving energy. Tracking greenhouse gas (GHG) emissions provides information on whether that energy is coming from fossil fuels or alternative, cleaner forms of energy, such as solar or wind power.

Track the success of community efforts to reduce energy use and greenhouse gas emissions.

Measurement required: Gigajoules (GJ) of energy consumed by the City as a whole

A gigajoule is equal to one billion joules, which are units of energy used to measure energy content. One gigajoule equals 948,200 BTU or 248 kilowatt-hours.

The per capita energy consumption figures show that between 1995 and 2008, community energy consumption per person has fallen by 3%.

Baseline: 2008 Community Per Capita Energy Consumption: 115 GJ (gigajoules) per person, a 3% reduction relative to 1995.

Measurement required: Tonnes of carbon dioxide (CO₂) emitted by the City as a whole

Carbon dioxide is the main form of greenhouse gas that contributes to global climate change.

The relationship between energy consumption and greenhouse gas (GHG) emissions depends on the annual mix of electricity production from fossil fuels relative to alternative, cleaner sources. At present, the increase in the use of fossil fuels across the province is increasing GHG emissions for each unit of electricity used.

Baseline: 2008 Community Per Capita GHG Emissions were 6.51 tonnes eCO₂ (environmental carbon dioxide) per person, a 0.4% reduction relative to 1995.

Where did the information come from?

- Durham Sustain Ability

What is the City doing to reduce the energy used by the community and the resulting greenhouse gas emissions?

The City established the following community per capita energy consumption target and corresponding per capita greenhouse gas emissions for 2016:

- 2016 Community Per Capita **Energy Consumption Target:**
 - 78 GJ (gigajoules) per person, a 35% reduction relative to 1995
- 2016 Community Per Capita **GHG Emissions:**
 - 5.3 t eCO₂ (environmental carbon dioxide) per person, a 19% reduction relative to 1995

The 35% reduction in energy consumption is the key community performance measurement. In order to meet this target, Pickering residents and businesses must reduce per-capita energy consumption by 5.3 GJ per year, that is, by 4.5% per year until 2016.

In 2010, the City will focus on the community sectors that require the most attention. This will include developing detailed performance measures and coordinating high-impact initiatives to reduce energy consumption and GHG emissions in the high-priority industrial, commercial, institutional and transportation sectors.

The following provides a summary of each key sector in order of performance as compared to its 1995 baseline:

- 2008 Per Capita **Energy Consumption** by Sector:
 - Residential: 39.1 GJ per person, a **28.1% reduction** relative to 1995
 - Transportation: 25.6 GJ per person, an **8.3% reduction** relative to 1995
 - Institutional, Commercial and Industrial (IC&I): 50.1 GJ per person, a **38.9% increase** relative to 1995
- 2008 Per Capita **GHG Emissions** By Sector:
 - Waste: 0.2 tonnes eCO₂ per person, a **48% reduction** relative to 1995 baseline
 - Residential: 2.0 tonnes eCO₂ per person, a **24.1% reduction** relative to 1995
 - Transportation: 1.8 tonnes eCO₂ per person, an **8.2% reduction** relative to 1995

Pickering: Sustainability Indicators

- Institutional, Commercial and Industrial (IC&I): 2.6 tonnes eCO₂ per person, a **58.5% increase** relative to 1995

The City sets up educational displays at special events and facilities throughout the community to distribute information on energy conservation.

Pickering's Sustainable Development Guidelines promote neighbourhood and building design and construction aimed at reducing overall energy consumption and reduction of CO₂ emissions. In approving new developments, the City looks for enhanced pedestrian connections and accessibility, cycling facilities and transit access, to reduce the reliance on the private automobile and thus reduce CO₂ emissions.

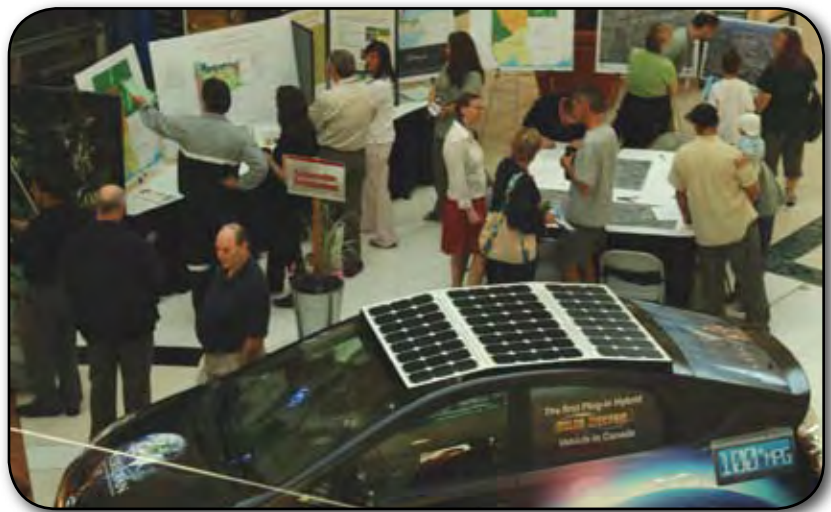
The City is currently working on updating the current Idling By-law. When this is completed, an extensive educational campaign will be designed to support the updated By-law.

What can you do to reduce your energy consumption and resulting greenhouse gas emissions?

- turn off lights and appliances at home and work when they are not in use
- use cold water wash for laundry
- tune up and turn down your water heater
- dispose of your old inefficient refrigerator via the [Great Refrigerator Roundup](#) and replace it with a high-efficiency model
- place computer and entertainment systems on power bars and then shut them off when not in use to reduce the loss of "phantom power"
- change light bulbs to compact fluorescent bulbs or LED (light-emitting diode) bulbs
- install a timer for outdoor lights, block heaters, pools and hot tubs
- install a programmable thermostat and dispose of the old one properly through the [Switch the 'Stat program](#)

Pickering: Sustainability Indicators

- install weather-stripping and caulking on windows and doors to prevent heat loss
- install solar-assisted water heating
- book an [EcoEnergy](#) audit
- participate in the [Every Kilowatt Counts](#) power savings event
- participate in [Earth Hour](#) annually
- install alternative energy sources in your home, such as solar, wind or geothermal energy
- participate in the [peakSaver program](#)



Pickering: Sustainability Indicators

Volume of water consumed per household

Not only is water a precious resource that should not be wasted, every litre of water consumed by City residents represents energy used in purification, pumping and distribution, and therefore contributes to greenhouse gas emissions.

Water is a precious resource that takes energy to process and deliver.

Measurement required: Litres of water used per person per day

Water is managed by the Region of Durham. In 1996 the Region launched Water Efficient Durham to encourage the efficient use of water among all users. Through the distribution of rain gauges and a comprehensive Household Guide to Water Efficiency (3rd edition) booklet, the Region educates residents on the role they play in conserving water both indoors and outdoors.

At present, Durham's average for all residents is 250 litres per capita per day (LPCD), and for Pickering it is 290 litres. The variance of 40 LPCD (between Pickering residents and the Durham Region average) cannot be explained with the available information, since a number of variables in water use data might have caused the difference.

The average for new homes in Durham is 190 LPCD and homes fitted with WaterSense/Energy Star toilets, dishwashers and clothes washers achieved 150 LPCD.

Baseline: In 2008, Pickering residents used on average 290 litres of water per person per day.

Where did the information come from?

- Works Department, Durham Region

What is the City doing to reduce water use in Pickering?

The City presents displays at events and facilities providing information on water conservation at home and in the garden and promoting Durham Region's water efficiency programs. The City also assists Durham Region with the distribution of rain gauges for lawn watering.

Pickering hosts three "Lush Lawns & Gorgeous Gardens" workshops per year. In part, these workshops teach residents about appropriate lawn watering and gardening with native and drought-tolerant plants and grasses.



Pickering: Sustainability Indicators

The City also demonstrates the use of drought-tolerant plants in its own landscaping efforts, wherever feasible.

What can you do to reduce your use of water?

- purchase a front-loading washing machine, which uses 40% less water than top loaders
- wash your car with a bucket and sponge, since this method on average uses only 100 litres of water, while washing with a hose uses 400 litres
- install low-flow showerheads and toilets, which use 70% less water than the conventional versions
- install low-flow aerators in kitchen and bathrooms taps
- turn off the tap when brushing your teeth
- install a [rain barrel](#) to catch water for use in the garden
- use an Energy Star dishwasher instead of hand washing and save up to 19,000 litres of water a year
- attend a “Lush Lawns & Gorgeous Gardens” workshop
- use low-angle pulsating sprinklers with a timer to water lawns and gardens; better still, water less and use drought-tolerant plants that do not require as much water



Pickering: Sustainability Indicators

Volume of wastewater discharged to sewers per household

The more wastewater that is discharged to the sewer system, the more energy is required to pump and process it, leading to increased greenhouse gas emissions.

Processing wastewater consumes energy.

Measurement required: Litres of water per household per day discharged to the Pickering sewage system

Wastewater is managed by the Region of Durham, which tracks the volume of wastewater for each municipality.

Baseline: In 2008, the average Pickering household discharged 275 litres of wastewater every day.

Where did the information come from?

- Works Department, Region of Durham

What is the City doing to reduce the volume of wastewater discharged to the sewer system?

The City presents displays at events and facilities on water conservation at home and on Durham Region's water efficiency programs. For example, the City encourages residents to recycle rainwater for use on lawns and gardens.

What can you do to reduce the amount of wastewater discharged to the sewer system?

When you reduce the water you consume, you reduce the amount of wastewater. For example:

- install low-flow showerheads and toilets, which use 70% less water than the conventional versions
- install low-flow aerators in kitchen and bathrooms taps
- see "[What can you do to reduce your use of water?](#)" in the previous section for other suggestions

Pickering: Sustainability Indicators

Track progress on the 3Rs of reduce, reuse and recycle.

Total amount of residential and non-residential solid waste sent to disposal

Sustainability means practicing the 3Rs – reduce, reuse and recycle. Waste that is not biodegradable or cannot be recycled is a burden on the environment.

Measurement required: Tonnes of waste for the municipality as a whole per year

The Durham Region Waste Management 2008 Annual Report indicates a 57% waste diversion rate for residential waste from Pickering. Diversion of waste by municipality includes blue box recyclables, green bin and leaf and yard waste compostables, and backyard composter credits. The total waste for Pickering residents was 31,181 tonnes. If 57% was diverted from landfill that means 13,407 tonnes of solid waste was sent to disposal. According to the report there is a slight improvement in waste diversion from 2007 to 2008.

The Durham Region average for waste diversion for these sources is 53%. Pickering is tied with Ajax for the second highest waste diversion rate in 2008 at 57%. Only Whitby had a higher diversion rate of 60%.

Materials recycled at special collection depots such as hazardous waste and electronics recycling events and at Regional waste disposal sites are not broken out by municipality. They are factored into the Region's overall waste diversion rate, lowering it from 53% to 51%.

Non-residential waste disposal is not tracked by the Region, since most of this waste is picked up by private companies.

Baseline: 13,407 tonnes of residential waste in 2008.

Where did the information come from?

- Works Department, Region of Durham

Note: In 2010 a technical working group will determine the best approach to measure non-residential waste.

What is the City doing to promote the diversion of waste from landfill?

The City is working to improve waste diversion inside and outside our corporate facilities, including recycling at all facilities; green bin collection from ten Pickering facilities; reusing items such as file folders and labels; recycling printer toner cartridges, batteries, and used cell phones; using

Pickering: Sustainability Indicators

double-sided printing; and discouraging the delivery of unsolicited sales catalogues and brochures to eliminate extra paper. The City is eliminating the use of plastic water bottles, practices waste minimization at meetings and events, and provides documents online to avoid the need to print paper copies.

Pickering partners with the Regional Municipality of Durham in hosting free yearly special waste collection events. In 2008, unwanted electronic waste was collected and in 2009, household hazardous waste was collected. In 2010, Pickering will again partner with the Regional Municipality of Durham on an electronic waste collection event. The City also offers residents a free online [Materials Exchange](#) program to give away items they no longer need.

[National Waste Reduction Week](#) in October raises awareness about resource consumption, waste reduction and diversion. The City of Pickering promotes Waste Reduction Week every year by carrying out internal and external education campaigns and waste reduction challenges with City employees, residents, schools and businesses.

Pickering's [dog waste diversion program](#) allows residents to use biodegradable bags provided by the City when stooping and scooping after their dogs in parks. This program is available in nine City parks and will be extended to more parks in the future. Instead of going to a landfill, the dog waste is processed at the Region of Durham's Duffins Creek Sewer Treatment Plant.

The City presents displays at events and facilities providing information on waste reduction at home, work and school and on Durham Region's waste programs.

Durham Region has developed a target of 70% diversion for all waste streams. This initiative is part of several activities by the Durham-York Joint Waste Management Group related to the proposed Clarington incinerator. New opportunities for Pickering to increase waste diversion activities may arise from the development of the Region's waste programs.

What can you do to divert waste from landfill?

- buy products that are made from recycled material and use recyclable packaging or no packaging

Pickering: Sustainability Indicators

- avoid purchasing individually wrapped items
- recycle electronics and hazardous materials responsibly
 - participate in the City's [Materials Exchange Program](#) or visit dowhatyoucan.ca
- repair or repurpose broken items
- donate older or unused items to one of any number of [organizations](#) that accept goods
- pack a litterless lunch by using reusable mugs, water bottles and containers
- use reusable bags or grocery bins when shopping
- prepare a list of items before you go shopping to reduce impulse buys
- use the blue box and green bin for proper waste diversion
- use reusable plates, glasses and mugs, metal cutlery and cloth napkins when having a party or meeting



Pickering: Sustainability Indicators

Total economic value of local agricultural products and services

Pickering has 56 working farms that grow, raise or produce cattle, hogs, poultry and other livestock; dairy products and eggs; fruits and vegetables; greenhouse and nursery products; or field crops such as corn, soy, grains and oilseeds.

Track the strength of the local agricultural economy.

Measurement required: Sales of agricultural products from Pickering farms in dollars

There are 56 working farms in Pickering, with a total capital value of \$75,838,142.

Baseline: In 2005, sales from Pickering farms totaled \$19,931,169.

Where did the information come from?

- Economic Development and Tourism Department, Region of Durham
- Planning & Development Department, City of Pickering
- Agricultural Census 2005

Note: In 2010 a technical working group will determine the best approach to measuring agricultural services.

What is the City doing to promote local agriculture?

City staff have participated in meetings about the Durham Region Food Charter, www.durhamlives.com. The Charter has solidified Durham Region citizens' commitment to locally grown food and support for the local agricultural sector.

Since 2008, Pickering has partnered with the Durham West Arts Council to host a farmers' market once a week in the downtown during summer. The City is also working with community partners to enhance the successful community gardens program. In fall 2009, a second weekly farmers' market was set up at Dunbarton High School.

What can you do to support local agriculture?

- buy local and encourage family and friends to buy local
- ask your grocery store to provide local products

Pickering: Sustainability Indicators

- support community gardens and local farmers' markets
- grow your own vegetables and herbs in your garden or in containers
- support the diversification of farm activities through zoning regulations to ensure that farms can continue to operate



Appendix: URL listing for hyperlinks

The following is a URL listing for hyperlinks contained in the Measuring Sustainability Report Online Version:

Page 3:

[Climate Protection Plan](#)

<http://sustainablepickering.com/partnersforclimatprotectionc36.php>

[Sustainable Neighbourhood Development Guidelines.](#)

<http://sustainablepickering.com/sustainableneighborhoodguidelinesc21.php>

[Sustainable Pickering: A Framework for Benchmarking Sustainability.](#)

<http://sustainablepickering.com/photos/custom/Report%20Benchmarking%20Process.pdf>

[Office of Sustainability](#)

<http://sustainablepickering.com/officeofsustainabilityc2.php>

[Sustainable Pickering Advisory Committee](#)

<http://sustainablepickering.com/advisorycommiteec1.php>

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[2008 FCM-CH2M Hill Sustainable Community Award in Planning](#)

<http://sustainablepickering.com/awardsforsustainabilityc156.php>

[website](#)

<http://sustainablepickering.com/index.php>

[Sustainable Pickering Challenge](#)

<http://sustainablepickering.com/mychallengec346.php>

[sustainability indicators](#)

<http://sustainablepickering.com/measuringsustainabilityc18.php>

Page 14:

www.airqualityontario.com

<http://www.airqualityontario.com/>

Page 15:

[Summerhill Impact](#)

<http://www.summerhillgroup.ca/eng/impact/impact-programs.php>

Page 17:

[tree dedication program](#)

<http://www.cityofpickering.com/standard/services/operations/public.html#Memorial%20Tree%20Planting%20and%20Park%20Bench%20Plaques>

Page 19:

[Goose Control Program](#)

<http://sustainablepickering.com/gooseprogramp55.php>

[Yellow Fish Road](#)

<http://www.yellowfishroad.org/>

[Fill and Topsoil Disturbance By-law](#)

<http://www.cityofpickering.com/standard/cityhall/bylaws/PDF/fillandtopsoil.pdf>

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[20 Minute Makeover](#)

<http://sustainablepickering.com/communitycleanupinitiativesp51.php>

[TD Great Canadian Shoreline Cleanup](#)

<http://sustainablepickering.com/communitycleanupinitiativesp51.php>

[Pitch in Party](#)

<http://sustainablepickering.com/communitycleanupinitiativesp51.php>

[Eyes on the Street program](#)

<http://sustainablepickering.com/eyesonthestreetp66.php>

[Watershed Report Card](#)

<http://trca.on.ca/protect/watersheds/duffins-carruthers-creeks/resources.dot>

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[Seaton Community](#)

<http://www.cityofpickering.com/seaton/>

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[Yellow Fish Road](#)

<http://www.yellowfishroad.org/>

[Fill and Topsoil Disturbance By-law](#)

<http://www.cityofpickering.com/standard/cityhall/bylaws/PDF/fillandtopsoil.pdf>

[Altona Forest Stewardship Committee](#)

<http://www.altonaforest.org/>

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www.altonaforest.org

<http://www.altonaforest.org/>

[20 Minute Makeover](#)

<http://sustainablepickering.com/communitycleanupinitiativesp51.php>

[Pitch in Party](#)

<http://sustainablepickering.com/communitycleanupinitiativesp51.php>

[Eyes on the Street](#)

<http://sustainablepickering.com/eyesonthestreetp66.php>

[trail steward program](#)

<http://www.altonaforest.org/volunteering.html>

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[Seaton Community](#)

<http://www.cityofpickering.com/seaton/>

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[Seaton Community](#)

<http://www.cityofpickering.com/seaton/>

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[Ajax-Pickering Board of Trade](#)

<http://www.apboardoftrade.com/>

[Durham Sustain Ability](#)

<http://www.sustain-ability.ca/>

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[Seaton Neighbourhood Planning Review](#)

http://www.cityofpickering.com/Seaton/studies_SNPR.html

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[Eyes on the Street](#)

<http://sustainablepickering.com/eyesonthestreetp66.php>

[online](#)

<http://sustainablepickering.com/eyesonthestreetp66.php>

[Neighbourhood Watch](#)

http://www.drps.ca/internet_explorer/community_support/DRPS_Services.asp

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[Durham Regional Police](#)

<http://www.drps.ca>

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[CaGBC](#)

<http://www.cagbc.org/>

[Sustainable Development Guidelines](#)

<http://www.sustainablepickering.com/photos/custom/MainReportFinalMay07.pdf>

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[Great Refrigerator Roundup](#)

<http://everykilowattcounts.ca/residential/fridge/>

[Switch the 'Stat program](#)

<http://www.switchthestat.ca/eng/index.php>

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[EcoEnergy](#)

<http://www.mei.gov.on.ca/en/energy/conservation/homeenergyon/?page=homeenergy-get-started>

[Every Kilowatt Counts](#)

<http://everykilowattcounts.ca/>

[Earth Hour](#)

<http://wwf.ca/earthhour/>

[peakSaver program](#)

http://www.veridian.on.ca/connections_residential_powerwise_peaksaver_new.asp

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[rain barrel](#)

<http://www.envirosensible.com/store.html>

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[Materials Exchange](#)

<http://sustainablepickering.com/pickeringsmaterialsexchange18.php>

[National Waste Reduction Week](#)

<http://www.wrwcanada.com/>

[dog waste diversion program](#)

<http://sustainablepickering.com/dogwastediversionprogramp17.php>

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[Materials Exchange Program](#)

<http://sustainablepickering.com/pickeringsmaterialsexchange18.php>

[dowhatyoucan.ca](#)

<http://www.dowhatyoucan.ca/>

[organizations](#)

<http://www.charityvillage.com/cv/charityvillage/donate.asp>

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[www.durhamlives.com](#)

<http://www.durhamlives.com>

Sustainable **PICKERING**



sustainable**pickering**.com

The Measuring Sustainability Report is a “living document.” It will be updated and revised as new information becomes available. Please check back regularly to see the progress the City is making on its sustainability journey.

And remember, we need you to be part of the solution. For ideas on what you can do, please visit our Sustainable Pickering website and go to the “My Challenge” section of the site. There you will see a listing of many sustainability actions that you, your family, friends and colleagues can take to help make Pickering one of the most sustainable places in Canada. Please review the listing, and make a commitment to one or more actions.

To help you along, here is a link to our website: www.sustainablepickering.com. When you visit the site, click on the **My Challenge** button and make your commitment to sustainability.

