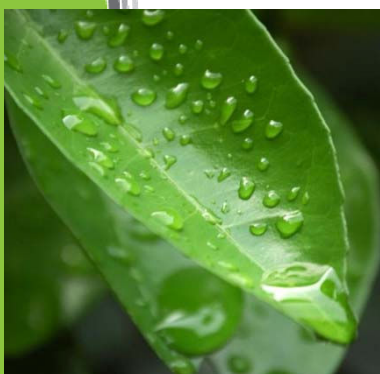


2011 Update



Environmental Strategic Plan

(DRAFT)

Executive Summary

The Town of Oakville is pleased to present an updated **Environmental Strategic Plan** representing the town's commitment to a series of ongoing and planned activities to improve the town's natural environment over the next five years.

Oakville's **vision** is to be the most livable town in Canada. This plan recognizes that our quality of life rests on the quality of our environment and on our respect for our natural and cultural heritage. Individually and collectively, we act with innovation and creativity to protect and enhance our ecological environment, while maintaining a vibrant social, cultural and economic base.



This plan is an update of the 2005 Environmental Strategic Plan (ESP) and follows a similar structure and intent. The plan includes actions organized under the following **goals** that help support continuous improvement in Oakville and respond to the changing environment and growing community:

- Goal 1: To sustain and enhance our natural environment
- Goal 2: To reduce our resource consumption and waste production
- Goal 3: To establish an environmentally friendly transportation network
- Goal 4: To create and support a healthy, resilient community
- Goal 5: To foster environmental stewardship through education
- Goal 6: To lead in applying innovative best environmental management practices



Over the last six years, under the leadership of the Environmental Policy department, and through the support of the community, a range of town departments, and Council, the 2005 ESP has achieved a phenomenal rate of nearly **100% implementation**. Many of the town's ongoing environmental programs, policies and initiatives have been captured in Appendix B.

In the spirit of the 2005 plan, the updated ESP has been developed with the guidance of the community and town staff. Appendix C contains more detail on the process to update the ESP.

One of the **guiding principles** of the ESP is to “ensure that our local actions contribute to the resolution of regional and global environmental issues”. With this in mind, the town has developed targets to reduce greenhouse gases - from the town’s operations and the community - that help address the global challenge of climate change.

The ESP includes a preliminary **Community Energy Plan** (in Appendix D) to move towards achieving a 6 per cent reduction target in community greenhouse gases below 2004 levels by 2014. A completed Community Energy plan is expected in 2012 and the ESP will be updated to reflect any changes at that time.

In addition, the town is one of twelve signatory municipalities working with Local Governments for Sustainability (ICLEI) to develop a corporate **Climate Change Adaption Plan**. Once complete, this plan will be included in the ESP as Appendix E.

The next steps involve implementing the action plans and updating the Community Energy Plan and Climate Change Adaptation Plan.



1. Preamble

The Town of Oakville, a growing lakeside community in southern Ontario, has long recognized that the quality of life for residents rests on the quality of the environment. This Environmental Strategic Plan (ESP) represents the **town's commitment** to a series of ongoing and planned activities to improve the town's natural environment over the next five years.



The plan supports Council's goal to be environmentally sustainable and directly contributes to its mission to "create and preserve Canada's most livable community that enhances the natural, cultural, social and economic environments. We achieve this by continuously improving programs and services that are both accessible and environmentally and fiscally sustainable."

This plan is an update of the 2005 Environmental Strategic Plan and follows a similar structure and intent. Over the last six years, under the leadership of the Environmental Policy department, and through the support of the community, a range of town departments, and Council, the 2005 ESP has achieved a phenomenal rate of nearly **100% implementation**. Many of the town's ongoing environmental programs, policies and initiatives have been captured in Appendix B.

In the spirit of the 2005 plan, the updated ESP has been developed with the guidance of the community and town staff. The **Environmental Strategic Plan Advisory Committee**, comprised of a range of resident volunteer members, was instrumental in guiding the implementation process from 2006 to 2011; members were also active in the review and update of the ESP.



The process to update the ESP has involved the review and synthesis of ongoing programs, plans and policies at the town, a series of staff interviews and the focused strategic engagement of residents and stakeholders to review and comment on the components of the ESP. (Refer to Appendix C for more on the planning process).

The ESP is a **living document**. This means that over time, as new master plans and policies are adopted, the ESP will be updated to reflect the new targets, performance measures and actions.

One of the guiding principles of the ESP is to “ensure that our local actions contribute to the resolution of regional and global environmental issues”. With this in mind, the town has developed targets to reduce greenhouse gases - from the town’s operations and the community - that help address the global challenge of climate change.

This version of the ESP includes a preliminary **Community Energy Plan** (in Appendix D) to move towards achieving a 6 per cent reduction target in community greenhouse gases below 2004 levels by 2014. The Community Energy Plan is distinct from the Corporate Energy Plan in that its actions are focused on reducing emissions resulting from the activities of residents, whereas the Corporate Energy Plan focuses on reducing the emissions created by the operations of the Corporation of the Town of Oakville. A completed Community Energy plan is expected in 2012 and the ESP will be updated to reflect any changes at that time.

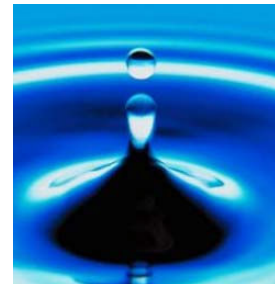
In addition, the town is one of twelve signatory municipalities working with Local Governments for Sustainability (ICLEI) to develop a corporate **Climate Change Adaption Plan**. Once complete, this plan will be included in the ESP as Appendix E.

The ESP includes an **updated vision, guiding principles and goals** along with a **series of actions** drawn from Council-endorsed Master Plans and existing policies. In addition, to help the town address emerging priorities and achieve environmental best practices, new actions are included.



2. Vision

Oakville's vision is to be the most livable town in Canada. This plan recognizes that our quality of life rests on the quality of our environment and on our respect for our natural and cultural heritage. Individually and collectively, we act with innovation and creativity to protect and enhance our ecological environment, while maintaining a vibrant social, cultural and economic base.



3. Guiding Principles

The following principles have informed the update of the ESP and will also serve to guide the actions of those who participate in the implementation of the Environmental Strategic Plan, including town staff, Council, community members and partners:

1. Build partnerships to work towards solutions to environmental challenges and opportunities that span geographic and administrative boundaries.
2. Use education, communication and capacity building to engage the community in implementing the ESP.
3. Anticipate the environmental needs of our community and commit to the use of innovative and best practices to facilitate continuous improvement.
4. Work together to meet our environmental goals within a responsible fiscal, cultural and social framework, evaluating life-cycle costs and benefits as well as social implications of proposed actions.
5. Act openly and transparently in planning, decision-making and implementation.
6. Include accountability measures to ensure we meet present and future needs of Oakville for a healthy environment.
7. Act as both advocates and stewards for Oakville's environment.
8. Ensure that our local actions contribute to the resolution of regional and global environmental issues.
9. Ensure that all residents have an equal opportunity to contribute to the implementation of the ESP.
10. Embrace adaptive management as a key component of our planning cycle to ensure Oakville is a resilient community.

4. Context

A PLAN FOR ACTION BASED ON COMMUNITY PRIORITIES

The Environmental Strategic Plan is a plan for action based on important environmental issues within the town's jurisdiction. In the six years since the first ESP was adopted by Council, many of the residents' core values about environmental issues have remained fairly consistent. Comparison of a telephone-based Community Attitudes Survey conducted in 2003 and again in 2009 reveals that residents' top four priorities have remained the same:

Top four reported environmental likes

2003	2009
1. Parks, trees and greenspace	1. Parks, trees and greenspace
2. Waterfront at Lake Ontario	2. Waterfront at Lake Ontario
3. Walkways, paths and trails	3. Town's cleanliness
4. Town's cleanliness	4. Walkways, paths and trails

In addition, the most frequently reported areas for improvement have remained identical:

Top three reported environmental challenges

2003	2009
1. Development and urban sprawl	1. Development and urban sprawl
2. Traffic congestion and road work	2. Traffic congestion and road work
3. Air quality/pollution	3. Air quality/pollution

A PLAN BUILT ON A LEGACY OF ONGOING WORK

Since the first ESP was adopted by Council in December 2005, the town has developed a number of new policies, procedures and plans to address environmental challenges and reinforce the town's existing strengths. These include comprehensive land use policies embedded in Livable Oakville Plan, the new official plan adopted by Council in 2009, and a number of new by-laws related to environmental issues such as tree protection, health protection and air quality. Other recent successes include the Sustainable Purchasing Handbook, Towards Zero Waste procedure for town operations and events, publishing the Sustainable Green Fleet Guide, a Corporate Energy Plan, Wildlife Strategy and annual State of the Environment Reporting.

The actions and priorities that are embedded in the town's existing plans are the basis for many of the actions in Section 5 of the updated ESP (refer to Appendix B). The strong focus of ongoing and planned work was augmented by actions derived from research, consultation and analysis of the successes and challenges of the first six years of implementation.

A PLAN BUILT ON LESSONS LEARNED

The 2005 ESP was a success; after six years of implementation, almost 100% of the actions included have been implemented or initiated. Town staff and residents have reflected upon lessons learned, and these ideas have helped to formulate the updated 2011 ESP.

Some of the **successes** of the original ESP include:

- Having an action-based format provided a clear guide for accomplishing specific tasks. The action plans in the 2005 ESP helped to spur the development of the Towards Zero Waste strategy, fleet greening, sustainable purchasing policies, green building standards for the town, a Community Energy Plan, the Oakville Wildlife Strategy and the State of the Environment reporting program.
- Having the 2005 ESP in place was instrumental in providing a platform to develop a comprehensive environmental outreach and education program. This program has helped residents and businesses become more engaged in environmental stewardship and conservation.
- Achieving almost 100 per cent implementation of the actions despite the ambitious nature of the scope and scale of the 2005 ESP.
- Providing an opportunity to facilitate internal partnerships among departments *and* partnerships between the town and community partners. Examples of successful partnerships include the collaboration between Environmental Policy, Roads and Works Operations and Transit to develop the Sustainable Green Fleet Procedure and Guide; and partnerships between the town's Parks and Open Space, Roads and Works Operations, Development Services, Legal, and Environmental Policy departments alongside the Ministry of Natural Resources, the Oakville and Milton Humane Society and Conservation Halton to develop the Oakville Wildlife Strategy.



Some of the **challenges** with the 2005 ESP were:

- The 2005 ESP included some actions that were beyond the town's jurisdiction and ability to implement. The revised ESP focuses on taking action on those things that are within the mandate and influence of the Town of Oakville and recommends an advocacy role for those that fall outside this.
- At times, legislation and regulations from other levels of government may restrict what the town asks for or is able to do; for example, the Ontario Building Code limits the town's ability to impose stricter green building requirements for private development.
- Finding the right balance of monitoring and measuring outcomes to help establish cause and effect relationships that is cost-effective and not too labour- and resource-intensive is a continuing challenge for the town and other municipalities.
- Other challenges included the availability of funding, staff resources and lag time with technology.



Did you know... the town has published a progress report on the status of the implementation of the Environmental Strategic Plan, including Let's Go Green Together, since 2008?

A CONNECTED PLAN

The 2011 Environmental Strategic Plan reflects the town's plan over the next five years for environmental action, advocacy and implementation. The ESP builds on the successes and challenges of the 2005 plan while weaving together important planning work that has already been endorsed by Council to address environmental considerations in areas such as the built environment, transportation, air quality and biodiversity (among others). Appendix B includes an overview of the town's ongoing environmental programs.

In 2009, Council approved General Environmental Policy (EN-GEN-001) to further strengthen and support the town's environmental policies and initiatives, including the ESP. EN-GEN-001 draws from the high level goals and guiding principles stated in the ESP and provides a framework to extend these throughout the corporation's activities. Many of the town's innovative "green" policies and procedures such as sustainable green fleet, sustainable purchasing and Towards Zero Waste were developed under the General Environmental Policy.

Looking ahead, the updated ESP will be a foundational piece for the town's visionary thinking related to the environment. The ESP will support the *Preserve It!* pillar of the Vision 2057 initiative: Vision 2057 is a planning process to integrate town projects and initiatives to create one, cohesive road map for the future.



The ESP also includes actions to help Oakville address the global challenge of climate change. Appendix D includes the context for the town's first **Community Energy Plan**. This is a plan that compiles all ongoing and planned actions across the community to reduce energy use and greenhouse gas emissions by 6 per cent below the 2004 levels by 2014. This community-based plan builds on the work the town is already doing for its own operations through implementation of the Corporate Energy Management Plan (2009-10).

In addition, the town is one of twelve signatory municipalities working with Local Governments for Sustainability (ICLEI) to develop a corporate **Climate Change Adaption Plan**. This plan builds on many existing initiatives that are climate change mitigation actions such as the town's Clean Air Strategies and Sustainable Green Fleet Procedure. Once complete, this plan will be included in the ESP as Appendix E and the specific actions will be embedded in the action plans.

A FORWARD-LOOKING PLAN

The updated ESP considers environmental trends in the Town of Oakville, the province of Ontario and nationally. Over the next five years, a changing climate may impact town departments, infrastructure and operations. Potential climatic change in Oakville may include an increase in average temperatures, increase in severity and number of storms (wind, rain, snow) and a decrease in average freshwater lake levels. Over the coming years Oakville's population is expected to grow, and will place increasing pressure on town services, land use and the town's transportation routes. Other changes that are anticipated over the next five years are the continued implementation of Ontario's *Green Energy Act*, the phase-out of the province's coal-fired power plants by 2014 and the introduction of a new Ontario Building Code. The actions included in Section 4 build upon the town's understanding of the potential trends in environmental conditions in the town and seek continual improvement and adaptive management. In addition, results from the town's State of the Environment Reporting program will be used to adjust the ESP and ensure that the town is focusing its efforts on actions that are meaningful and responsive to an ever-changing environment.

The following pages in Section 5 contain the action plans that form the core of the ESP. These have been built on:

- an understanding of the community's priorities through surveys;
- consultation with focus groups and key stakeholders;
- interviews with key Directors and staff;
- analysis of the implementation of the 2005 ESP;
- practices in other communities; and
- an integration of ongoing and planned environmental activities embedded in other Council-approved master plans, policies and initiatives.



5. Goals and Action Plans

The goals of the Environmental Strategic Plan remain consistent with those in the 2005 ESP, namely:

**Goal 1: To sustain and enhance
our natural environment**

**Goal 2: To reduce our resource
consumption and waste production**

**Goal 3: To establish an environmentally
friendly transportation network**

**Goal 4: To create and support
a healthy, resilient community**

**Goal 5: To foster environmental
stewardship through education**

**Goal 6: To lead in applying innovative
best environmental management practices**






ELEMENTS OF THE ACTION PLANS

Each of the action plans supports one of the six goals containing the following elements:




Elements of the Action Plans


Goal	Highlights a key theme for the ESP process; a condition or state desired to be brought about through a course of action. Helps to implement the vision.
Objective	A more specific description of how to help achieve the goal.
Action	A step to be taken to support the fulfillment of the objective, goal and ultimately the vision.
Source	<p>When actions have been drawn from or are supported by existing town plans, they are indicated:</p> <ul style="list-style-type: none"> • ATMP: Active Transportation Master Plan • CEMP: Corporate Energy Management Plan • ED: Economic Development Strategy • ESP: 2005 Environmental Strategic Plan • GF: Sustainable Green Fleet • LO: Livable Oakville • NOSP: North Oakville Secondary Plans • NOUFSMP: North Oakville Urban Forest Strategic Management Plan • OWLS: Oakville Wildlife Strategy • PRCL: Parks, Recreation, Culture and Libraries Master Plan • SDG: Sustainable Development Guidelines • SCA: Shoreline Condition Assessment • SPP: Sustainable Purchasing Policy • TMP: Transportation Master Plan • TP: Five Year Transit Plan • TZ: Towards Zero Waste • UFSMP: Urban Forest Strategic Management Plan
Timeframe	<p>Indication of the time period in which the step will be initiated and/or results achieved (completed):</p> <ul style="list-style-type: none"> • ST: Short-term – 2012 to 2013 • MT: Medium-term – 2013 to 2015 • LT: Long-term – 2015 to 2017 • OG: Ongoing - Action is to be carried on indefinitely
Lead	<p>Identification of who would be involved in action implementation.</p> <ul style="list-style-type: none"> • BS: Building Services • CL: Clerks • DE: Development Engineering • EC: Engineering and Construction • ED: Economic Development • EP: Environmental Policy • FCM: Facilities and Construction Management






	<ul style="list-style-type: none"> • HR: Human Resources • ISS: Information Systems and Solutions • LEG: Legal • LIB: Library • OH: Oakville Hydro • OT: Oakville Transit • PS: Planning Services • PU: Purchasing • RC: Recreation and Culture • RW: Roads and Works Operations • POS: Parks and Open Space
Community Partners	<p>Where the action will be supported through community and agency partnerships, this is indicated with a symbol:</p> 
Climate Change or Energy Plan Action	<p>Where the action supports the implementation of the Community Energy Plan, it is indicated with a symbol:</p>  <p>Where the action supports the implementation of the Climate Change Adaptation Plan, it is indicated with a symbol:</p> 
Performance Measures and Indicators	<p>A measure to help the town track progress in achieving/completing each of the actions. Most of the performance measures in Section 5 are activity-based and are used primarily to determine whether an action has been addressed or completed.</p> <p>Indicators are different from performance measures in that they look at results or outcomes. Note that outcome-based environmental indicators are included in Section 6.3 and are cross-referenced below each of the Goals in the action tables in Section 5.</p> <p>Where applicable, performance measures and indicators have been drawn from the source master and strategic plans.</p>



Streamlined action plans supporting the implementation of each of the goals over a five period (2012 to 2017) are included on the following pages.




GOALS AND ACTION PLANS








			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Goal	1	To sustain and enhance our natural environment						
Environmental Indicators for Goal 1		<ul style="list-style-type: none"> • Greenspace and biodiversity: Total hectares of publicly owned greenspace; public greenspace per capita • Urban forest canopy: Number of trees planted by the town; Air quality: Annual average ground level ozone (O3) levels and how many times in a year that fine particulate matter (PM2.5) exceeded an average of 15ug/m³ over a 24-hour period • Water quality: Total phosphorus and chloride levels at Sixteen Mile, Fourteen Mile and Bronte Creeks • Climate change: local average annual precipitation and average temperature for summer months and winter months 						
Objective 1.1		To protect and enhance our biodiversity						
Action	1.1.1	Develop a wildlife education and outreach program as outlined in the Oakville Wildlife Strategy	OWLS	ST	EP/POS			Number of wildlife speaker series conducted; number of wildlife fact sheets created; completed biodiversity section of town website
	1.1.2	Review animal related by-laws for options to reduce wildlife conflict situations	OWLS	ST	EP/CL/POS			Number of by-laws amended; by-law enforcement statistics
	1.1.3	Research options for comprehensive long term management program for nuisance wildlife species (e.g. Beaver, Canada goose)	OWLS	LT	POS/EP			Presence of a long term nuisance wildlife species management plan
	1.1.4	Research and implement options for enhancing wildlife habitat	OWLS/LO	MT/LT	PS/EP/POS			Area of land subject to enhancement strategies and implemented
	1.1.5	Research and consider options for the development of a comprehensive	OWLS/LO	LT	POS/EP			Presence of an invasive species program










		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
	invasive species program in conjunction with Conservation Halton						
1.1.6	Consider the development of an Ecology and Wildlife Specialist position as outlined in the Oakville Wildlife Strategy.	OWLS	LT	Not Determined			Specialist position developed
1.1.7	Increase public green space and waterfront land holdings where appropriate	LO/OWLS /ESP	OG	PS/POS/LEG			Hectares of public greenspace
1.1.8	Implement the North Oakville Natural Heritage System (NHS)	NOSP	OG	ED/PS/LEG/ Others			Hectares of land added to the NHS





			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Objective	1.2	To protect and enhance our urban forest						
	1.2.1	Implement the recommendations of the Urban Forest Strategic Management Plan (UFSMP) for the lands south of Dundas and the North Oakville Urban Forest Strategic Management Plan (NOUFSMP) for the lands north of Dundas	UFSMP/ NUFSMP/ LO	OG	POS		 	Number of recommendations implemented
	1.2.2	Expand and implement policies and programs to combat invasive species threats to the urban forest such as emerald ash borer, garlic mustard and the gypsy moth	UFSMP	OG/ST	POS			Number of invasive species programs and policies; number of invasive species action groups; number of invasive species eradicated
Objective	1.3	To protect and enhance our waterways						
	1.3.1	Increase awareness of natural hazards from flooding and erosion	ESP	OG	EC/DE			Presence of brochure and/or other educational material
	1.3.2	Develop and implement a stormwater management plan		OG/ST	EC/DE/PS			Presence of plan
	1.3.3	Increase public awareness and education on stormwater management	ESP	OG	EC/DE/EP			Presence of brochure and/or other educational material (e.g. information placards at stormwater ponds)









		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
1.3.4	Investigate partnership opportunity to review capacity of harbours and future needs (e.g. additional break walls, moorings, etc.)	LO	MT	POS/LEG/ED			Number of partnerships created; number of meetings of partners per year; creation of harbour future needs review document
1.3.5	Develop standards for harbours regarding bottom washing of vessels to ensure proper disposal of runoff and reduce invasive species threats and fuel contamination	LO	MT	POS			Creation and distribution of vessel washing procedures to harbours managers and users
1.3.6	Research feasibility of implementing a mandatory long term maintenance requirement for both private and public stormwater management devices		MT	DE/EC			Feasibility research conducted; Number of maintenance contracts implemented
1.3.7	Investigate options for either reducing fertilizer use on public property or reducing phosphorus content in fertilizer used. Investigate public outreach campaign regarding phosphorus use near waterways		ST	POS			Reduction in phosphorus use; presence of education material; Phosphorus levels in Oakville creeks; reduction in fertilizer use; public outreach campaign developed










		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
1.3.8	Continue to support and enhance the Clean Marine program for Oakville harbours		OG	POS/EP			Results of performance audits; number of “anchors” awarded
1.3.9	Complete and implement Source Water Protection plans in partnership with other stakeholders		MT/OG	DE/EC/EP			Completion of Source Water Protection Plans; number of Source Water Protection Plan initiatives/ recommendations implemented
1.3.10	Review and implement best management practices for municipal projects and private development to reduce quantity and improve quality of runoff into waterways	LO	ST	DE/EC/RW/POS			Quantity and quality of runoff entering waterways: suspended solids (TSS), Turbidity Units phosphorous and chloride content in waterways Use of Erosion Sediment Control guidelines by Conservation Authorities
1.3.11	Conduct bi-annual shoreline monitoring program and restore and remediate shoreline sites as identified and prioritized in the town's Shoreline Condition Assessment reporting	SCA	OG	EC			Metres of shoreline restored
1.3.12	All stormwater management ponds built on lands north of Dundas should be built to MOE's Enhanced (Level 1) Guidelines	NOSP	OG	DE/EC			Percentage of new stormwater management ponds built to MOE's Enhanced (Level 1) Guidelines







		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
1.3.13	Continue to report annually on the town's Water Resources Program and Monitoring	ESP	OG	EC/POS/PS/EP			Report presented to Council annually. Creation of study. Amount of bank area lost per year. Number of erosion reduction measures implemented.
1.3.14	Conduct a study and create an action plan to correct bank erosion and vegetation loss on Sixteen Mile Creek south of the QEW		MT/LT	POS			Report and plan developed
Objective	1.4 To protect and enhance our air quality						
1.4.1	Research, develop and form partnerships to reduce vehicular air emissions	ESP/LO	OG	EP/RWO/OT			Number of partnerships formed; number of meetings of partners per year; annual average ground level ozone (O ₃) levels and how many times in a year that fine particulate matter (PM ^{2.5}) exceeded an average of 15ug/m ³ over a 24-hour period
1.4.2	Continue to enforce the anti-idling by-law and review regularly to improve when needed		OG	EP/CL			Number of anti-idling infractions; number of public education materials available for anti-idling by-law
1.4.3	Continue to implement the town's Health Protection Air Quality By-law		OG	EP/ED/LEG			Percentage of applicable sites that are compliant with by-law











		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
1.4.4	Partner with the province and other municipalities to research and implement projects and policies that support improved air regulation and airshed air quality improvements, including the Oakville Clarkson Airshed Action Plan		OG	EP/EC/PS			Number of projects and policies implemented
1.4.5	Continue to implement and update the Clean Air Plan						Number of actions implemented; presence of an updated plan
Objective	1.5	To increase ecological landscaping (naturalization) on private and public property					
1.5.1	Encourage households and businesses to implement ecological landscaping through partnerships, educational materials and demonstration gardens	ESP/LO	OG	EP/POS			Hectares of ecological landscaping created; number of projects implemented
1.5.2	Research and implement a plant salvage program on town lands and/or establish partnerships to initiate this	ESP	MT	POS/EP			Salvage program in place; Number of plants salvaged
1.5.3	Develop a comprehensive naturalization strategy and implementation process, including public education on naturalization strategies.	OWLS/LO	LT	POS/EP		 	Hectares of land naturalized; number of naturalization information signs posted
1.5.4	Research and implement options to naturalize parking lots and include landscaping for shade and to mitigate stormwater runoff	LO	ST	POS/DE/EC/PS			Hectares of parking lot space mitigated







			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Objective	1.6	To reduce and manage the impacts of climate change						
	1.6.1	Develop and implement a climate change adaptation strategy		OG	EP			Strategy developed and accepted by town; number of strategy recommendations implemented
	1.6.2	Continue to measure and monitor weather at a local level and review potential for expanding existing monitoring stations or parameters		OG/MT	EC/DE			Number of weather parameters measured; number of monitoring stations in operation
	1.6.3	Continue to implement the Partners for Climate Protection		ESP	EP			Number of Partners for Climate Protection milestones achieved; overall reduction in community and corporate GHGe







			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Goal	2	To reduce our resource consumption and waste production						
Environmental Indicators for Goal 2		<ul style="list-style-type: none"> Energy conservation: Natural gas use by sector; per capita residential use of electricity and natural gas Solid waste: The quantity of solid waste diverted from landfills (through the use of recycling and GreenCarts) and the amount of solid waste that was delivered to landfill; and the amount of waste generated per capita; Water quality: Total phosphorus and chloride levels at Sixteen Mile, Fourteen Mile and Bronte Creeks 						
Objective	2.1	To reduce dependence on fossil fuels						
	2.1.1	Work with Oakville Hydro and other community partners to expand, access and promote alternative green energy resources (geothermal, solar, combined heat and power, etc.)	LO	OG	EP/FCM		 	MW of energy produced or purchased in Oakville by alternative green sources
	2.1.2	Review and implement alternative fuel/hybrid bus strategy for Oakville Transit, subject to budget approval	GF/TP	ST/MT	OT		 	Number of hybrid buses; fuel or GHG saved
Objective	2.2	To reduce energy use and greenhouse gas emissions						
	2.2.1	Continue to implement and expand the town's Drive Smart program	GF/TMP	OG	RW/OT/EP			Overall reduction in fuel use; number of Drive Smart recommendations implemented; number of driver training sessions
	2.2.2	Investigate feasibility of infrastructure and incentives for electric/hybrid/alternative fuel/microcar vehicle users	GF	MT	EP/RW			Number of alternative fuel vehicle incentives created; number of alternative fuel vehicles operated by municipality; number of charging stations installed









		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
2.2.3	Continue to implement and expand Green Fleet Strategy for the town	GF	OG	RW/OT/EP			Number of Green Fleet actions implemented; total reduction in litres of fuel used; total GHGe reduction
2.2.4	Develop and implement a lighting strategy for both public and private development to reduce energy use		ST	PS/RW/EC/PO/EP			Presence of a lighting strategy; reduction in energy use for lighting
2.2.5	Develop a strategy for upgrading town facilities and budget for retrofits and upgrades for energy conservation		ST	FCM/RC/Other Departments			Upgrade strategy developed; total energy conserved
2.2.6	Work with Oakville Hydro to implement the Business/Commercial Conservation Demand Management (CDM) program (OPA Contracted Province-wide CDM Program)		ST/OG	EP			Total reduction in energy use; number of CDM programs and initiatives undertaken
2.2.7	Work with Oakville Hydro to implement the Consumer CDM program (OPA Contracted Province-wide CDM Program)		ST/OG	EP			Total reduction in energy use; number of CDM programs and initiatives undertaken
2.2.8	Work with Oakville Hydro to implement the Low Income CDM program (OPA Contracted Province-wide CDM Program)		ST/OG	EP			Energy use reductions (MWh) through support of program















		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
2.2.9	Work with Oakville Hydro to implement the board-approved programs (proposed and to be confirmed): <ul style="list-style-type: none"> - Municipal Energy Efficiency Leadership Program - Regional Energy Efficiency Leadership Program - Computer Management Program - Greening Downtown Oakville - SME Commissioning Program - Top 10 Users Pilot Extension - Residential Hot Water Program - Residential New Construction Program - Energy Efficiency in Schools Program - Consumer Education Program 		ST/OG	EP/Other Departments			Energy use reductions (MWh) through support of programs; number of board approved programs implemented
2.2.10	Investigate feasibility of town support for shifting time of day energy use		MT	FCM/EP			Creation of feasibility study; MWh of energy saved through implementation of study
2.2.11	Investigate feasibility of municipally-supported financial incentives for green development, including residential retrofits and implement recommendations		LT	LEG/EP/PS/ED			Completion of feasibility study; Recommendations implemented; Number of retrofits financed; Creation of a pilot program
2.2.12	Continue to implement the Corporate Energy Management Plan	CEMP/LO	OG	EP			Total GHGe from town operations













		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
	2.2.13	Continue to implement the Council-approved Partners for Climate Protection Program	CEMP	OG	EP	 	Total GHGe from community; number of PCP milestones completed
Objective	2.3	To reduce waste and increase recycling and reuse					
	2.3.1	Increase recycling, composting and waste separation opportunities in parks and public spaces	ESP/TZW	OG	POS/RW/EP	 	Volume of recycled and/or composted materials
	2.3.2	Increase recycling, composting and waste separation opportunities along key transit points	TZW		OT/EP	 	Volume of recycled and/or composted materials
	2.3.3	Support programs to divert waste from landfill, including but not limited to the zero waste strategy and building design policies and guidelines that support waste reduction and diversion	OP/TZW/LO	OG	ALL		Volume of recycling; comparison of reduction initiatives
	2.3.4	Implement a construction waste management program for municipal undertakings to ensure contractors have documentation in place to reduce and divert waste from the landfill	SDG/LO	ST	FCM		Development of a construction waste management program; Volume of waste diverted
	2.3.5	Work with the Region of Halton to support the implementation of the Solid Waste Management Strategy in Oakville	TZW	OG	EP/PS/FCM	 	Total reduction in solid waste; number of initiatives implemented






		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
2.3.6	Continue to implement and expand e-library services to reduce paper use		OG	LIB			Number of e-services available; number of e-books loaned out
2.3.7	Research and implement a paper reduction strategy for the town		ST	ISS/EP/ALL			Amount of paper saved (10 per cent reduction required by Council)
2.3.8	Continue to support and enhance the Sustainable Purchasing program for town operations	SPP	OG	EP/PU			Percentage of procurement decisions influenced by the sustainable purchasing policy; Number of recommendations implemented
2.3.9	Develop a Green Purchasing handbook and program for use by local commercial and industrial companies	SPP	MT	EP		 	Presence of a Green Purchasing handbook for external users; number of participating commercial and industrial companies
2.3.10	Develop municipal road building strategy for incorporating recycled aggregates		MT	EC/DE			Presence of strategy; number of roads incorporating aggregates







			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Objective	2.4	To reduce our water consumption						
	2.4.1	Partner with Region of Halton to introduce and support water conservation programs and services to the community.	ESP	OG	EP			Number of initiatives worked on together; quantity of water used per capita
	2.4.2	Introduce and continue to support existing water conservation programs on public properties	ESP/LO	OG	EP			Quantity of water used by town
	2.4.3	Investigate opportunities for grey water use on public properties and town, such as watering and splash pads		MT	DE/POS			Completion of feasibility study for grey water alternatives; volume of grey water reused (L)









			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Goal	3	To establish and support an environmentally friendly transportation network						
Environmental Indicators		<ul style="list-style-type: none"> Transportation choices: Number of personal vehicles registered in Halton Region and comparison of population growth vs. growth of number of vehicles in Halton Transit: Transit trips per capita and net cost per passenger trip 						
Objective	3.1	To enhance public transportation within and connecting to Oakville						
	3.1.1	Continue to implement the PRESTO Farecard program in conjunction with MetroLinx and other communities	ESP/LO	OG	OT		 	Number of Oakville Transit riders using PRESTO
	3.1.2	Work with businesses to identify opportunities for expanded ridership, service and routes		OG	OT		 	Number of service changes implemented; changes in modal share; number of “rush hour” transit users
	3.1.3	Investigate and implement technological applications to enhance customer service amenities and passenger experience. These may include online trip applications, social media and scanning codes	TP/LO	MT/LT	OT		 	Number of technology based initiatives implemented; number of social media users signed up/or following
	3.1.4	Establish a U-Pass Program in partnership with Sheridan College	TP	ST	OT			Presence of U-Pass program; number of U-Pass holders; number of U-Pass users













			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Objective	3.2	To support bike and walking path infrastructure and connectivity						
	3.2.1	Develop and maintain a contiguous network of safe cycle and walking paths (both on and off-road) throughout Oakville with connections to neighbourhoods and major activity centers as well as to the surrounding municipalities, including Halton Region	ATMP/TM P/ESP/LO	OG	EC/POS		 	Kilometres of new bike lanes and paved shoulder bikeways implemented; kilometres of linear sidewalks on town and regional roads; kilometres of missing links on town and regional roads
	3.2.2	Increase bike infrastructure such as bicycle racks and shower/change facilities at key hubs	ATMP/TM P/ESP/LO	OG	EC/RC		 	Number of new bicycle parking spots Implemented; change in the number of bicycle racks at various public and private locations; change in the number of shower facilities
	3.2.3	Town to provide improved access/information on trails and cycling routes through an online system	ATMP/TM P	ST	POS/ISS		 	Creation of online trail map and information system; Number of online users accessing site.
	3.2.4	Work with potential partners to develop a bike share system pilot project based at one or more key locations in town, such as the Oakville GO Station	ATMP/TM P	MT	EC		 	Number of partnerships created; number of locations piloted; number of bike share users/rides per month.
	3.2.5	Town staff will consider the ATMP recommendations prior to proceeding with all applicable capital works projects	ATMP/TM P/LO	OG	EC		 	Creation of formal procedure for considering/recording considerations made for ATMP; number of recorded considerations of ATMP in capital works projects per year



			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Objective	3.3	To encourage the use of alternative modes of transportation						
	3.3.1	Expand education programs to encourage children to use sustainable modes of transportation, such as walking, cycling, and public transit, and reduce their auto-dependency in coordination with potential partners	ATMP/TMP	OG	EC/EP/OT		 	Percentage of children that walk or bike to school in Oakville; number of schools and students participating in pedestrian or bicycle safety education programs or events
	3.3.2	Consider establishing a Road and Trail Safety Ambassador program	ATMP	ST	EC			Percentage of reported pedestrian and bicycle collisions per 1000 population in Oakville
	3.3.3	Investigate fleet vehicle options for staff use for offsite meetings so individuals can carpool, walk, bike or take public transit for work on days with meetings	ATMP/TMP/GF/LO	ST	EC/RW/EP		 	Number of employees enrolled in program
Objective	3.4	To promote and use transportation demand management (TDM)						
	3.4.1	Continue to implement the Smart Commute Program at the town	ATMP/ESP/GF/TMP	OG	EC		 	Number of employees participating in Smart Commute program; number of recommendations implemented
	3.4.2	Work with community partners to expand the Smart Commute program to external groups	ESP/TMP	OG	EC		 	Number of community partnerships with Smart Commute; number of participants










		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
3.4.3	Research and implement transportation demand management strategies for town staff (e.g. alternative hours)	ESP/TMP/ATMP/LO	MT	HR		 	Presence of a TDM strategy; number of participants
3.4.4	For the lands north of Dundas, encourage any development more than 3,000 m ² of office use or 9,290 m ² of industrial use to establish with the town a travel demand management plan and implementation strategy for the specific development	NOSP/TMP	LT	DE/PS		 	Number of TDM's in place




			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Goal	4	To create and support a healthy, resilient community						
Environmental Indicators for Goal 4		<ul style="list-style-type: none"> Sustainable Building and Development: Housing completions by type; overview of “green” buildings in Oakville; and gross floor area of building permits issued. Access to parkland and recreation: Outdoor recreational facility space per 1,000 people and total kms of trails per 1,000 people. Greening our spaces: Community garden plots; the Adopt-a-Trail program and the Adopt-a-Park program use. 						
Objective	4.1	To improve the health and safety of Oakville's neighbourhoods						
	4.1.1	Decrease the amount of loose litter in Oakville	ESP	OG	EP/POS/RW			Number of “clean-ups” organized; amount of litter cleaned up; number of garbage/recycling / composting cans in public areas in Oakville
	4.1.2	Reduce sources of light pollution	LO	OG	PS/POS/EC/RW			Number of light pollution strategies implemented (e.g. lighting standards; lighting by-law)
	4.1.3	Promote and support partnerships for local and organic food production and sourcing		ST	EP/POS		 	Number of local partnerships; ha of public land supporting urban agriculture
Objective	4.2	To foster and sustain an environmentally sustainable urban form						
	4.2.1	Research and prepare wildlife friendly construction guidelines or practices for town infrastructure and development projects	OWLS	MT	DE/EC/EP			Construction guidelines created



		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
4.2.2	Research and consider options for development of a "road ecology" strategy for the town	OWLS	ST	EC/RW/EP/DE/POS			Development of a "road ecology" strategy; Number of staff participating in Ontario Road Ecology Group; number of dead animals collected from roads
4.2.3	Promote environmentally friendly planning, development and construction processes for the development industry	LO	OG	DE/PS/EC		 	
4.2.4	Review site alteration by-law periodically and incorporate environmental best management practices		MT	DE/LEG			By-law amended
4.2.5	Develop a sustainable development checklist that incorporates Livable Oakville Plan policies and principles (similar to the North Oakville checklist)	LO	ST	PS		 	Sustainable development checklist created
4.2.6	Complete an analysis and inventory of underutilized (greyfield/brownfield) properties in Oakville and research opportunities to make these properties more marketable	LO	LT	ED/PS			Inventory of greyfield/brownfield areas created; research report created summarizing greyfield/brownfield development and marketing opportunities
4.2.7	Adopt a complete streets strategy for development in Oakville	TMP/LO/ATMP/NOSP	OG	DE/EC/PS			Creation of a complete streets strategy



	4.2.8	Investigate feasibility and potential effectiveness of the installation of more roundabouts in Oakville	TMP	MT	DE/EC/PS		 	Creation of a feasibility study of effectiveness of increased roundabouts
	4.2.9	Integrate environmentally supportive features in an update of the town's Urban Design Guidelines	LO	ST	PS			Number of environmentally supportive features integrated into Urban Design Guideline update
Objective	4.3	To support green building practices						
	4.3.1	Showcase green building projects by the town and the public			EP/BS/FCM		 	Green building project case studies developed; green building showcase presented to public.
	4.3.2	Implement the Sustainable Design Guidelines as they apply to municipal undertakings	SDG	OG	FCM		 	Total area (or number) of green buildings/renovations undertaken
	4.3.3	Encourage private development to follow the town's Sustainable Design Guidelines	SDG	OG	PS/DE/FCM/EP		 	Total area (or number) of green buildings/renovations undertaken
Objective	4.4	To support outdoor recreational opportunities in Oakville						
	4.4.1	Increase and protect outdoor recreational and leisure areas	ESP	OG	POS			Number of outdoor recreational and leisure areas
	4.4.2	Improve the quality of outdoor recreational and leisure areas	ESP	OG	POS			Number of improvements to the quality of outdoor recreational and leisure areas
	4.4.3	Improve access to green space and recreational areas	ESP	OG	POS			Number of improvements made (e.g. additional trailheads, accessibility features)
	4.4.4	Continue to promote recreational tourism including the harbours and local festivals to support community vitality and ecotourism	ESP	OG	ED/POS/RC			Number of festivals; number of campaigns

			Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Goal	5	To foster environmental stewardship through education and community involvement						
Environmental Indicators		<ul style="list-style-type: none"> Outreach events: The number of environmentally related public outreach events that are put on by the town each year EcoSchools: Number of Oakville schools that have obtained a gold, silver or bronze certification level under the Ontario EcoSchools program. 						
Objective	5.1	To support and enhance a public education strategy to increase environmental awareness and stewardship						
	5.1.1	Review public environmental education strategy and update		ST	EP			Public environmental education strategy reviewed and updated
	5.1.2	Continue to incorporate public input, including youth feedback, into the town's environmental decisions	ESP	OG	All			Number of public meetings held; outcome of meetings and quality of feedback
	5.1.3	Review and implement enhanced signage on public properties for environmental education opportunities (e.g. stormwater management, naturalization, access to municipal tap water, bike storage, etc.)		OG	EP/POS/RC			Number of environmental education signs installed on public properties
Objective	5.2	To support and enhance programs to increase environmental awareness and stewardship						
	5.2.1	Continue to support the Oakville Environmental Fund and report annually on its activities	ESP	OG	EP			Change in the amount of money in the fund; number and type of environmental initiatives carried out

		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
5.2.2	Develop stronger partnerships with community partners to implement effective volunteer coordination for urban forest and naturalization initiatives	UFSMP	OG	POS			Number of community partnerships; number of volunteers participating in initiatives; number of plantings carried out
5.2.3	Encourage environmentally-focused community volunteerism		OG	EP/POS/RC			Number of volunteers participating in initiatives
5.2.4	Incorporate "Towards Zero Waste" procedures for all community and town sponsored events	TZW	OG	EP/POS/RC		 	Number of events incorporating TZW; volume of recycled materials
Objective	5.3	To support and enhance the town's environmental indicators and monitoring programs					
5.3.1	Update the town's environmental indicators program	ESP/OWLS	ST/MT	EP			Presence of updated environmental indicators program
5.3.2	Develop a centralized environmental data and information repository	ESP	MT	ISS/EP			Creation of environmental database and information repository; number of indicators tracked by environmental database and information repository
5.3.3	Incorporate a monitoring and indicator process for all environmental pilot projects		OG	ALL			Creation of monitoring and indicator criteria for environmental pilot projects
5.3.4	Update the UFORE every four years and provide a State of the Urban Forest Report to Council (Forestry section)	UFSMP	ST/OG	POS		 	UFORE updated every four years; State of the Urban Forest Report provided to Council.

		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
Goal	6	To lead in applying innovative best environmental management practices					
Environmental Indicators for Goal 6		<ul style="list-style-type: none"> Environmental Strategic Plan: Implementation status of Oakville's Environmental Strategic Plan (ESP); innovative environmental programs: a description and statistics of the town's innovative environmental programs 					
Objective	6.1	To be leaders in research, development and implementation of innovative environmental programs					
	6.1.1	Review and update requirement for including sustainability considerations in Council reports		ST	CL/EP		Requirement updated and reviewed
	6.1.2	Advocate to and with other levels of government to advance innovative best environmental management practices	ESP	OG	ALLEP		Number of initiatives lobbied for and/or partnerships created
	6.1.3	Research and implement opportunities to use existing cemetery lands more efficiently		LT	POS		Development of land efficiency strategies; ha of land saved through implementation of strategies
	6.1.4	Seek areas for operational efficiencies and environmentally friendly opportunities in town services, such as grass cutting, greenhouse operations, snow removal and the use of more environmental friendly products		ST	ALL	 	

		Source	Time	Lead	Community Partners	Climate Change or Energy Plan Action	Performance Measures
6.1.5	Expand use of the town's Ecological Footprint program for both the community and the town operations		ST	EP			Number of footprint programs in place
6.1.6	Investigate feasibility to develop (or promote) a business labeling program to highlight green/sustainable practices		MT	ED/EP			Presence of a feasibility study; number of businesses participating
6.1.7	Continue to develop new green procedures under the General Environmental Sustainability Policy		OG	EP			Number of procedures adopted/endorsed at town hall
6.1.8	Continue to update departmental budget performance objectives to align with ESP actions and outcomes		OG	EP			

Objective	6.2	Promote partnerships with local businesses, schools and organizations					
6.2.1	Support the EcoSchools program in Oakville		OG	EP			Number of schools participating in EcoSchools program; level of achievement of participating EcoSchools (gold, silver, bronze)
6.2.2	Establish community-based working groups that meet annually to work with staff on annual implementation plans in support of each of the goals		ST	EP			Presence of working groups; presence of annual action plans

6. Implementation

As with the 2005 ESP, implementation of the Environmental Strategic Plan will be critical to its success. The following sections outline some recommendations for oversight, reporting and monitoring.

6.1. Oversight, Management and Governance

The overall responsibility for the coordination and implementation of the Environmental Strategic Plan will rest with the **Environmental Policy Department**. However, as many of the actions within the ESP are drawn from other town master plans, the lead department(s), as identified, will be responsible for the initiation, tracking and monitoring of the actions.

The 2011 ESP, as with the 2005 ESP, will be implemented in a **fiscally responsible** and sustainable manner. Many of the actions are drawn from master plans and ongoing work and are already budgeted for in existing workplans. Many of the new initiatives proposed will require more detailed research to review options prior to implementation. Funding projections for these new initiatives will be brought forward as they are scoped and will be subject to departmental and Council review as part of the workplan and budget review process.

6.2. Reporting and Revision Cycles

It is recommended that staff continue to **develop annual reports** on the status of implementation with a companion summary document: Let's Go Green Together.

It is recommended that staff refine the annual priorities for ESP implementation with advice from **community-based working groups** – one focused on each goal (refer to Action 6.2.2).

It is recommended that the Environmental Strategic Plan be **updated on a five year cycle**. The next review cycle will commence in 2017.

It is recommended that the Environmental Strategic Plan be considered a “living document” to allow for adapting the plan to reflect current policies, practices, programs and updates that may occur prior to a full update in 2017.

It is recommended that once complete and endorsed by Council, the **Climate Change Adaptation Plan** be incorporated into the ESP.

It is recommended that the town review the recommendations associated with the **Community Energy Plan** (in Appendix D) and develop an implementation plan.

6.3. Environmental Indicators

The town implemented an environmental reporting program based on indicators developed with the town's ESP Advisory Committee. An annual **State of the Environment Report** has been published since 2008. They provide a summary of key environmental indicators of interest to the public, along with useful tips and suggestions for making a positive impact on our environment. The indicators are a useful way of illustrating the outcome-based impact of the actions included in the ESP.

The current indicators are:

- *Greenspace and biodiversity*: Total hectares of publicly owned greenspace; public greenspace per capita
- *Urban forest canopy*: Number of trees planted by the town
- *Air quality*: Annual average ground level ozone (O₃) levels and how many times in a year that fine particulate matter (PM_{2.5}) exceeded an average of 15ug/m³ over a 24-hour period
- *Water quality*: Total phosphorus and chloride levels at Sixteen Mile, Fourteen Mile and Bronte Creeks
- *Climate change*: Two components of local weather conditions: average annual precipitation and average temperature for summer months and winter months
- *Solid waste*: The quantity of solid waste diverted from landfills (through the use of recycling and GreenCarts) and the amount of solid waste that was delivered to landfill; and the amount of waste generated per capita
- *Energy conservation*: Natural gas use by sector; per capita residential use of electricity and natural gas
- *Water conservation*: Residential water consumption per capita and overall volume; Industrial, commercial and institutional volume of water consumption
- *Transportation choices*: Number of personal vehicles registered in Halton Region; Comparison of population growth vs. growth of number of vehicles in Halton
- *Transit*: Transit trips per capita; Net cost per passenger trip
- *Greening our spaces*: Community garden plots; the Adopt-a-Trail program and the Adopt-a-Park program use
- *Access to parkland and recreation*: Outdoor recreational facility space per 1,000 people; Total kms of trails per 1,000 people
- *Outreach events*: The number of environmentally related public outreach events that are put on by the town each year
- *EcoSchools*: Number of Oakville schools that have obtained a gold, silver or bronze certification level under the Ontario EcoSchools program.

- *Innovative environmental programs:* Description and statistics of the town’s innovative environmental programs
- *Sustainable Building and Development:* Housing completions by type; overview of “green” buildings in Oakville; Gross floor area of building permits issued
- *Environmental Strategic Plan:* Implementation status of Oakville’s Environmental Strategic Plan (ESP)

It is recommended that reporting continue, with updates as needed. Recommendations for indicators for the Community Energy Plan are included in Appendix D.

6.4. Continued Environmental Education

Environmental education is the cornerstone of the ESP and it is embedded in many of the actions in Section 4. It is recommended that the town continue to engage staff and the community about environmental initiatives and accomplishments. The environmental education strategy for the ESP has, and will continue to be, multifaceted including:

- The design and production of effective publications (brochures, fact sheets, guides);
- Developing and hosting special events;
- Writing and distributing appropriate, timely messaging through local media;
- Building and maintaining strong partnerships between and among town departments, with the community and with other agencies and governmental organizations; and
- Using technology, including the town’s website, to facilitate an active, informed and involved community.

7. Next Steps

The next steps in the evolution of the Environmental Strategic Plan are to finalize the Climate Change Adaptation Plan (Appendix E) and the Community Energy Plan (Appendix D). In addition, the town will update the State of the Environment Report to better reflect the updated actions in the revised ESP.



In 2012 the town will continue the development of an Integrated Community Sustainability Plan (ICSP). The ESP will be one input to this overarching, community-based plan that will integrate social, cultural, economic and environmental priorities.

Appendix A: List of Acronyms

ATMP	Active Transportation Master Plan
BS	Building Services
CDM	Conservation Demand Management
CEMP	Corporate Energy Management Plan
CEP	Community Energy Plan
CL	Clerks
CO ₂ e	Carbon Dioxide Equivalent
DE	Development Engineering
EC	Engineering and Construction
ED	Economic Development
EDS	Economic Development Strategy
EP	Environmental Policy
ESP	Environmental Strategic Plan
FCM	Facilities and Construction Management
FCM	Federation of Canadian Municipalities
GF	Sustainable Green Fleet
GHGe	Greenhouse gas emissions
HR	Human Resources
HTMP	Halton Transportation Master Plan
ISS	Information Systems and Solutions
LAP	Local Action Plan
LEG	Legal
LIB	Library
LO	Livable Oakville
LT	Long-term (2015 to 2017)
MT	Medium-term (2013 to 2015)
NGO	Non-Governmental Organization
NHS	Natural Heritage System
NOSP	North Oakville Secondary Plans

NOUFSMP	North Oakville Urban Forest Strategic Management Plan
OG	Ongoing; action is to be carried on indefinitely
OH	Oakville Hydro
OT	Oakville Transit
OWLS	Oakville Wildlife Strategy
PCP	Partners for Climate Protection
POS	Parks and Open Space
PRCL	Parks, Recreation, Culture and Libraries Master Plan
PS	Planning Services
PU	Purchasing
RC	Recreation and Culture
RW	Roads and Works Operations
SCA	Shoreline Condition Assessment Report
SDG	Sustainable Development Guidelines
SOER	State of the Environment Reporting
SPP	Sustainable Purchasing Policy
ST	Short term (2012 – 2013)
TMP	Transportation Master Plan
TP	Five Year Transit Plan
TZ	Towards Zero Waste
UFSMP	Urban Forest Strategic Management Plan
VKT	Vehicle Kilometres Travelled

Appendix B: List of Ongoing Programs, Policies and Initiatives

Annual Reporting

Annual reports on the implementation of sustainability and environmental initiatives are published in the ‘*Let’s Go Green*’ and the ‘*Oakville State of the Environment*’ reports.

CORPORATE INITIATIVES

Policy and Master Plans:

Anti-Idling By-law 2002-153 (2002) – To control vehicle idling

Council’s Strategic Plan (2011-2014) – The plan builds upon the success of the previous Council's 2007-2010 Strategic Plan, and sets out new actions to help achieve Council's vision for Oakville “to be the most livable town in Canada.”

Environmental Strategic Plan (2005) – Goals to protect and enhance resources including airsheds, develop environmentally friendly transportation systems and maintain healthy neighbourhoods

Environmental Sustainability Policy (2009) – Sets policy to carry out environmental initiatives advancing Oakville as a sustainable community

Health Protection Air Quality By-Law (2010) – To assess and control the health effects of major emissions of fine particulate matter in Oakville

Livable Oakville (2009) – Growth directed to protect the natural environment, heritage and stable neighbourhoods, and green community development and building

North Oakville Implementation Guidelines with Sustainable Development Guidelines and Checklist for developments (2009) – Establishes framework for sustainable development

North Oakville Secondary Plan (2007/8) / ***New Communities of Oakville*** – Transit-first, sustainable, walkable community plans for lands north of Dundas

North Oakville Trails Plan (2008) The North Oakville East Trails Plan provides the framework for a comprehensive network of walking and cycling trails that provide alternative transportation options while protecting the integrity of the Natural Heritage System. An implementation plan is under development

North Oakville Urban Forest Strategic Management Plan (under development) - This plan provides a high-level strategy and planning recommendations to achieve a sustainable, healthy urban forest in North Oakville

Oakville Wildlife Strategy and Conflict Guidelines (2011) – Provides clarification on roles and responsibilities for wildlife in Oakville, recommendations for preservation and enhancement and guidelines for staff when dealing with wildlife conflict situations

Parks, Recreation, Culture and Library Master Plan (2006) – Principle to provide leadership in environmental stewardship, protect and enhance parklands, trails, and the urban forest (currently being updated)

Pesticide By-law (2007) – Use of pesticides strictly restricted in Oakville, replaced by Provincial Act in 2009, applied to private lands, corporate restrictions in place (2004 onwards)

Private Tree Protection By-law 2008-156 (2008) – Protects significant trees on private property along with other related tree protection regulation

Transit Five Year Master Plan (2008) - The Five Year Transit Services Plan includes several recommendations including specific increases to staffing levels, a new fare structure and strategy, elimination of Community Bus service and Zone Bus service, as well as a re-design of the town's service delivery model

Transportation Master Plan (2007) / ***Active Transportation Master Plan*** (2009) – Establishes transportation policies and infrastructure plans for all travel modes in Oakville (vehicles, transit, cycling, walking)

Urban Forest Strategic Master Plan (2008) – Establishes policies and actions to protect and enhance Oakville's urban forest working towards the Mayor's legacy goal of 40% canopy cover by 2057, significant annual planting program

Programs:

Clean Air Plan (2002/2010) – Action plan to mitigate impact of operations on air quality through behaviour change and operational improvements

Ecological Footprint (2009 onwards) – The ecological footprint provides a measure of the resources required to sustain Oakville's quality of life

Green Building Procedure / Sustainable Green Building Design Guidelines (June 2010) – Establish standards to ensure corporate sustainable building

ICLEI / FCM Partners For Climate Protection, Milestones 1, 2, 3 (2008 onward) – Baseline energy and greenhouse gas emissions (GHGe) established, GHGe targets set, Corporate Action Plan approved, green energy purchased, annual reporting with measurables

LED Traffic Light Replacement (2004 to 2008 complete) – Conversion of older energy inefficient technology with energy efficient LEDs

Salt Management Plan (2011 Update) - The SMP provides the policy and operating principles to continuously improve their management of road salt demonstrating a commitment to reducing environmental effects due to excessive salt use consistent with Environment Canada objectives

Staff Education (ongoing) – Tire Smart, energy conservation, environmental stewardship, home energy audits supporting environmental action at work and home

State of the Environment Reporting (2008 onwards) – Annual reporting program that uses indicators to track various parameters of the town's environment. This report also includes the ecological footprint

Sustainable Energy Management Plan (2010) - Establishes corporate-wide coordination to optimize energy management, achieve efficiencies and reduce consumption

Sustainable Green Fleet Procedure and Guidebook (2009) – Implementation plan defined to green fleet with annual reporting on effectiveness, and smart fleet driving

Sustainable Green Purchasing Procedure and Handbook (2009) – Implementation plan defined to ensure sustainable purchasing, annual reporting

Technology Improvements and Pilot Testing (ongoing) – Dustless, waterless street sweepers, LED street lights, alternative fuels, fuel use improvements

Towards Zero Waste Program (2009) – Enhanced recycling and composting options and water bottle restrictions and removal of office garbage bins to achieve significant waste reduction and recycling improvements

Transit Service Improvements (ongoing) – Improved, more fuel-efficient routes for better service, PRESTO Farecard early adopter, launched May 2010

Buildings:

Building Audits (2007) - All major town buildings have implementation plans

Green energy projects - Oakville Hydro/Region of Halton landfill gas capture project (2007), new Transit Facility with geothermal (2011), rooftop solar installations planned for Town Hall, Oakville Hydro solar energy rooftop installation (2011/2010)

Green energy purchase (2005 onward)

LEED Certified Buildings - Sixteen Mile Sports Complex, Oakville Transit Facility, Queen Elizabeth Park Community Center (under construction);, LEED Accredited Professionals on staff

COMMUNITY INITIATIVES

Air Quality Improvement and Anti-Idling Outreach (2004 onward) – School community program, signage, community events

Clean Air Plan (2002 onward) – Community actions are identified to improve air quality

EcoAction Calculator (2010) – To provide community motivation to make behaviour changes to improve their environment, measurables will be tallied

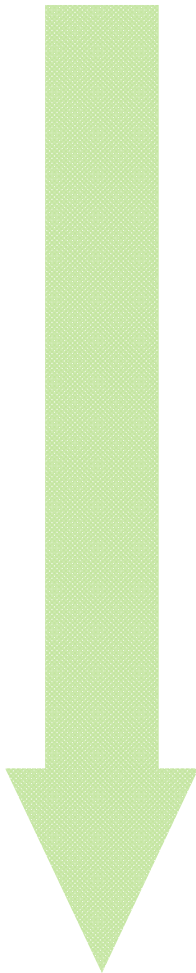
Energy Conservation Officer (2008) - Conducts outreach to promote energy conservation and consumption reduction actions by community

Energy Conservation Outreach (2006 onward) – Annual Conservation Fair, Watt Not Waste Not energy meter Library lending program, BIA ‘Doors Closed’ campaigns

Environmental Stewardship Outreach (2004 onward) - To promote actions to protect and enhance Oakville’s environment

Appendix C: ESP/ Community Energy Planning Process

The process to develop the updated Environmental Strategic Plan and Community Energy Plan began in late 2010 and concluded in November 2011. The process involved:



- Meeting with the Environmental Strategic Plan Advisory Committee to review the implementation of the 2005 ESP, vision, guiding principles and goals.
- Reviewing, summarizing and analyzing the town's existing master plans and other community commitments to reduce energy and GHG emissions.
- Conducting departmental interviews with town staff to understand the wide range of ongoing environmental programs, policies and initiatives.
- Hosting consultation meetings to review the components of the 2005 Environmental Strategic Plan and priorities for the 2011 update.
- Conducting a gap analysis and brainstorming ideas for new actions to support the ESP.
- Evaluating and estimating GHG emissions reduction potential from existing plans.
- Obtaining input from community members during the 2011 Energy Fair.
- Hosting a Community Energy Plan workshop to explore new actions and ideas for implementation of community greenhouse gas reduction targets.
- Reviewing the ESP and CEP with town staff;
- Hosting a community workshop and circulating the draft ESP for comments.
- Updating the ESP and CSP.
- Seeking Council endorsement of the draft plan.

The following plans were reviewed for inclusion in the updated ESP and CEP:

- Active Transportation Master Plan (Cycling and Walking Master Plan) - Final Report
- Clean Air Plan
- Corporate Energy Management Plan (2009-10)
- Council Four Year Strategic Plan (2011-2014)
- Enabling Culture to Thrive in Oakville: Oakville's Strategic Directions for Culture
- Diversity Strategy/ Communication
- Ecological Footprint
- Economic Development Strategy 2009-2019
- Emergency Management Plan
- Environmental Strategic Plan - 2005
- Environmental Sustainability Policy
- Erosion Assessment Study
- Fire Master Plan
- Five Year Transit Plan
- Green Building Design Procedure
- Halton Region's Draft Solid Waste Management Strategy
- Hybrid Bus Report
- Let's Go Green: Oakville's Environmental Strategic Plan in Action – Progress
- Livable Oakville: Official Plan
- Living the Green Life: Oakville's Guide to Environmental Stewardship
- North Oakville East Secondary Plan (Official Plan Amendment Number 272 to the Official Plan of the Town of Oakville)
- Oakville Harbours Strategic Financial Master Plan
- Oakville Hydro Conservation Demand Management (CDM) Strategy
- Oakville Wildlife Strategy and Wildlife Conflict Guidelines
- Parks, Recreation, Culture and Library Master Plan
- State of the Environment Report – 2010, 2009, 2008
- Sustainable Design Guidelines, Version 1.0
- Sustainable Green Fleet – Procedure and Guide
- Sustainable Purchasing Policy and Sustainable Purchasing Handbook
- Towards Zero Waste Procedure
- Town Shoreline Condition Assessment Report
- 2008-2012 Service Plan, Town of Oakville – Oakville Transit, Final Report
- Transportation Master Plan – - 2007 (being updated in 2011/2012)
- Union Gas Energy Conservation programs
- Urban Forest: Our Solution to Our Pollution
- Urban Forest Strategic Master Plan – North Oakville

Appendix D: Community Energy Plan

INTRODUCTION

As part of the process to update the Environmental Strategic Plan, the town has undertaken research and analysis to inform the development of a Community Energy Plan (CEP). The intent of this work is to guide activities to reduce energy consumption and greenhouse gas (GHG) emissions in order to assist the community in addressing the challenge of climate change.

The process of developing a CEP is part of the town's commitment to the **Partners for Climate Protection (PCP)** program – a joint initiative of the Federation of Canadian Municipalities and ICLEI-Local Governments for Sustainability. The CEP represents the third milestone of the PCP program, following the first and second milestones which are to: (1) develop a baseline GHG emissions inventory, and; (2) set GHG emissions reduction targets. The final two milestones in the PCP program are: (4) Implementing the CEP or a set of activities; and (5) monitoring progress and reporting results. More information about the PCP program is available at <http://gmf.fcm.ca/Partners-for-Climate-Protection/>.

APPROACH

Recognizing the extensive planning work that has already been done in the community to address environmental considerations in areas such as the built environment, transportation, and solid waste (among others), the town set out to identify activities that have been previously defined – through other planning processes in Oakville and by other businesses/organizations – that may have an impact on energy and GHG emissions in the community. These previously defined activities were compiled from existing plans and documents, including:

- Environmental Strategic Plan - 2005
- Active Transportation Master Plan
- Parks, Culture, Recreation and Libraries Master Plan
- North Oakville East Secondary Plan
- Oakville Wildlife Strategy
- Urban Forest: Our Solution to our Pollution
- Five Year Transit Plan
- Green Building Guidelines
- Curbside drop off rates in Oakville
- Hybrid Bus Report
- Oakville Hydro Conservation Demand Management (CDM) Strategy
- Union Gas Energy Conservation programs
- Halton Region's Draft Solid Waste Management Strategy

Activities from these plans have been embedded in the ESP action plans (Section 5) and are noted with the following symbol:



These activities were then evaluated for their GHG emissions reduction potential in an effort to see whether the town is in a position to meet its community-wide GHG emissions reduction target of 6% below 2004 levels by 2014.

It should be noted that this evaluation was done based on assumptions around the estimated uptake of these pre-defined activities, and was not based on an inventory of GHG emissions, which would be developed using actual energy and fuel consumption statistics for the community.

This appendix provides an overview of the Town of Oakville's baseline community GHG inventory, forecast, and target, and estimates the level of reductions that might be expected by 2014 as a result of implementing the pre-defined actions. Additional actions are highlighted in an effort to further the town's understanding of the level of effort that will be required to achieve the 2014 target.

WHERE ARE WE NOW?: 2004 BASELINE INVENTORY

The Town of Oakville has set 2004 as the baseline year for their community-wide GHG emissions inventory. In 2004, total GHG emissions were estimated at approximately **1,252,000 tonnes CO₂e¹**. Figure D-1 shows the 2004 baseline inventory by sector.

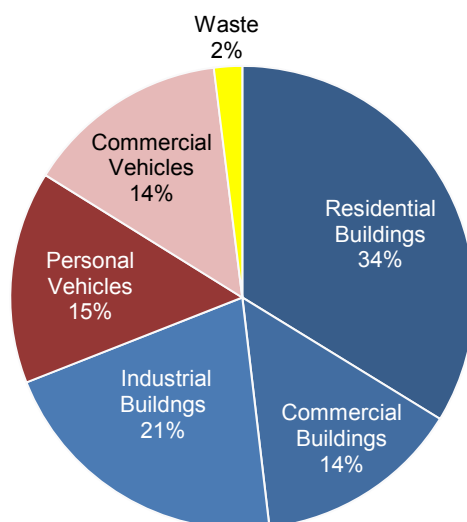


Figure D-1. Community-wide GHG emissions in Oakville, by sector (2004)

WHERE ARE WE GOING?: GHG EMISSIONS FORECAST

The purpose of creating a forecast is to see how GHG emissions will grow under a business-as-usual scenario (i.e. no intervention by the Town of Oakville). The forecast was created using an **annual population growth rate of 1.5%** and by including the following assumptions around senior government activities that will have an impact on energy and GHG emissions in the community (based on existing policy statements, commitments, etc.):

- A 10% improvement in the energy efficiency of new residential buildings between 2012 and 2020;
- A 5% improvement in the energy efficiency of new commercial buildings between 2012 and 2020;
- A 30% improvement in passenger vehicle fleet average fuel efficiency between 2016 – 2031;
- Beginning in 2012, electricity provided by coal is starting to be phased out. By the end of 2014, electricity provided by coal is replaced by 50% renewables and 50% natural gas generation.

¹ Note that all GHG emissions figures (in tonnes CO₂e) are rounded.

Without these actions by senior levels of government, GHG emissions in Oakville would grow to approximately **1,457,000 tonnes CO₂e** by 2014 (see line ‘A’ in Figure D-2).

However, as a result of these actions, GHG emissions in Oakville are expected to increase to approximately **1,263,000 tonnes CO₂e** by 2014 (see line ‘B’ in Figure D-2). This reduction is occurring without any intervention by the Town of Oakville. The following page highlights the GHG reductions that are anticipated as a result of actions taken by the town and its community partners.

WHERE DO WE WANT TO GO?: GHG REDUCTION TARGET

As previously stated, the Town of Oakville has adopted a community-wide GHG emissions reduction target of **6% below 2004 levels by 2014**.

HOW WILL WE GET THERE?: GHG REDUCTION MEASURES

A number of pre-defined energy and GHG reduction measures were compiled through a review of existing plans and policy documents in Oakville. Wherever possible, attempts were made to quantify the impact of these activities on GHG emissions. For certain activities it is difficult to quantify the impact (e.g., outreach and education activities, conservation of natural areas, etc.); nonetheless, these activities are critical to the success of a CEP and may provide co-benefits beyond energy and GHG reductions, such as improved air and water quality, public health benefits, etc.

Based on the quantifiable actions and assumptions around the expected level of uptake in the community by 2020, the following reductions are estimated by 2014:

- Buildings: 28,200 tonnes CO₂e
- Transportation: 5,900 tonnes CO₂e
- Solid Waste: 6,600 tonnes CO₂e

Overall, this represents a **2% reduction** below 2004 levels by 2014 (see line ‘C’ in Figure D-2).

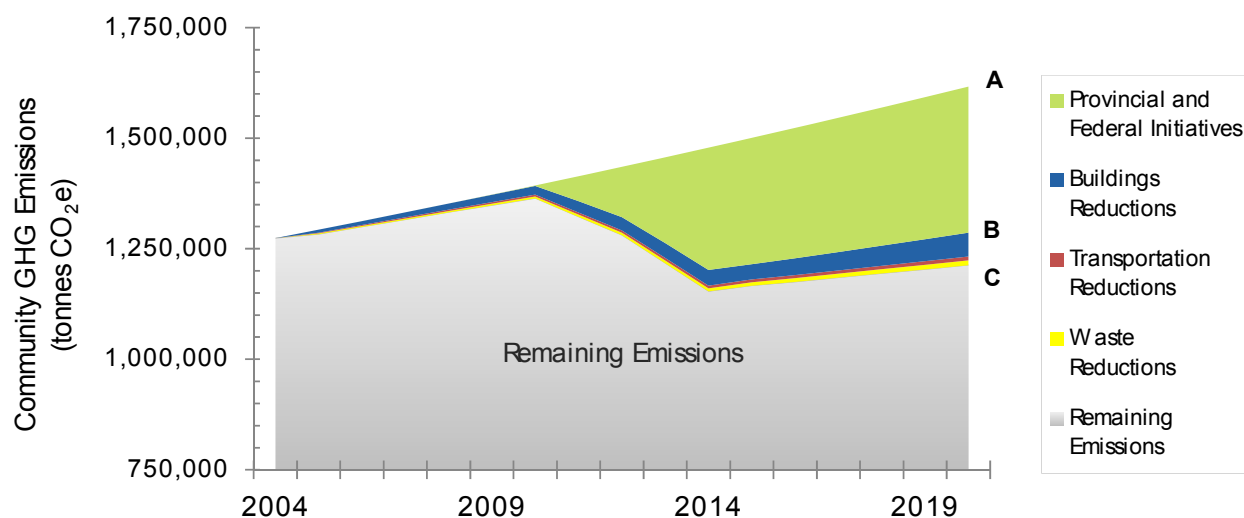


Figure D-2. Estimated GHG reductions by sector, 2004 – 2020

As

Figure D-2 shows, GHG reductions fall short of meeting the 2014 target. It also shows that without sustained reduction efforts, GHG emissions will continue to increase over time as Oakville's population grows.

The town and its partners will need to implement more aggressive measures to reduce energy consumption and GHG emissions if the 2014 target is to be met – and it is worth noting that these measures will be in addition to the already aggressive measures that have been assumed in the reduction scenario shown above (e.g., phasing out coal-fired power generation in Ontario by 2014).

Additional analysis was undertaken in an effort to show what would be required for Oakville to achieve the 2014 reduction target. An alternate reduction scenario helps to demonstrate the level of effort that would be necessary to achieve a 6% reduction below 2004 levels by 2014. Using the same assumptions as in the previous scenario (related to population growth and senior government action), and incorporating more aggressive actions that result in greater uptake in the community, the following reductions are estimated:

- Buildings: 59,900 tonnes CO₂e
- Transportation: 11,900 tonnes CO₂e
- Solid Waste: 8,500 tonnes CO₂e

Table D-1 summarizes the level of effort and the types of activities that would be required to achieve these reductions and meet the 2014 target.

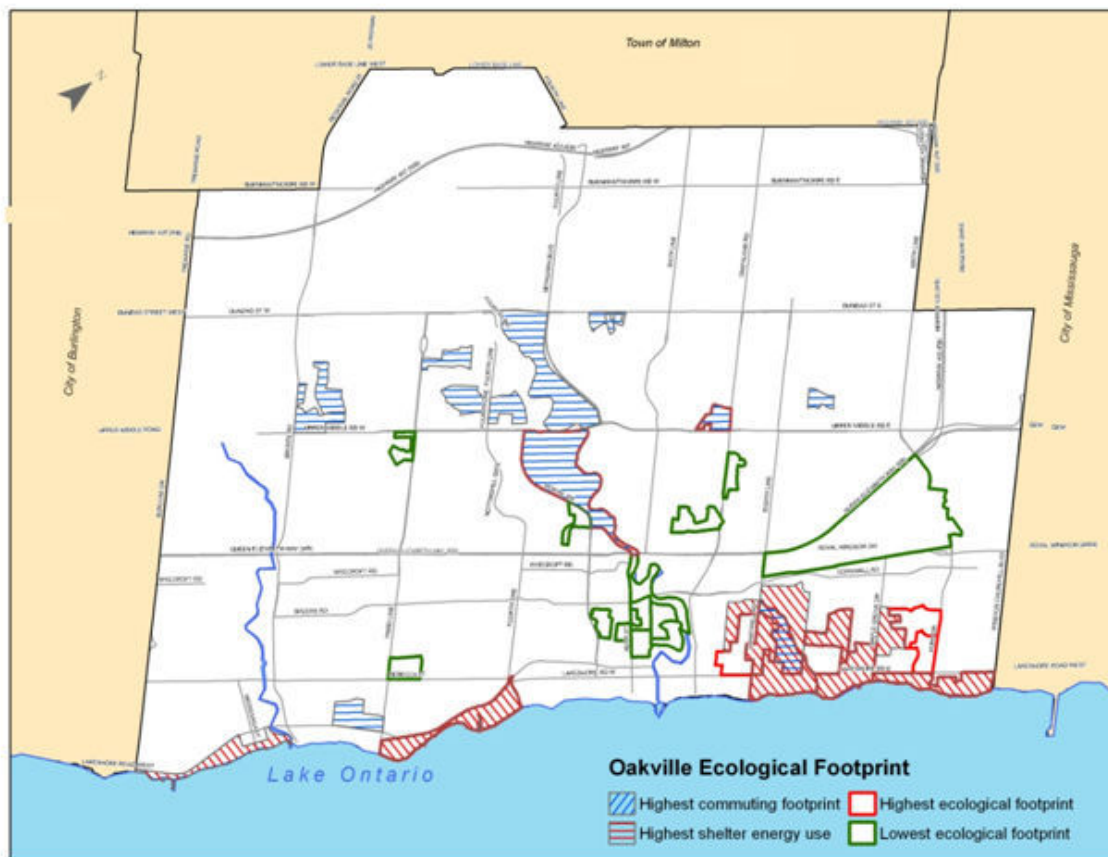
Table D-1: Assumptions and implications for meeting the 2014 GHG reduction target

Assumptions (by 2020)	Implications for Action
75% of new residential dwellings exceed building code (energy performance).	The Town of Oakville does not have jurisdiction over building code, but can influence action in this area through policy and strong financial incentives (along with extensive outreach). Actions might include: sustainable design guidelines, Development Cost Charge reductions, building permit fee rebates, Density Bonuses, grants, tax exemptions, lobbying the provincial government for continued improvements to building code, etc. Utility companies can continue to encourage action in this area through pricing, incentive programs, and outreach activities.
75% of new commercial buildings exceed building code (energy performance).	
50% of existing homes have undergone energy retrofits.	
An additional 25% of existing homes have installed solar hot water systems.	
30% of existing commercial buildings have undergone energy retrofits.	

**Assumptions
(by 2020)****Implications for Action**

The Town of Oakville does have jurisdiction over land use and can control the way development happens in the community. As demonstrated through the town's Ecological Footprint initiative²

30% of Oakville's neighbourhoods double in density, resulting in reductions in vehicle kilometres travelled (VKTs).



(Figure D-3), higher density neighbourhoods that are located close to amenities and services, then to have smaller footprints. These neighbourhoods provide a greater diversity of housing options (which can improve affordability, as well as energy efficiency), improve the viability of transit and create active transportation opportunities. Actions for the town might include: defining an urban containment boundary, limiting the parcelization of rural land, and exercising various policy instruments to encourage more energy efficient development practices (e.g., Development Permit Areas, Density Bonusing, Development Cost Charges).

² As part of SOER reporting, the town also measures its ecological footprint - the spatial representation of how much land and water Oakville requires to produce the resources we consume and absorb the waste we generate.

Assumptions (by 2020)	Implications for Action
A further 35% reduction in VKTs occurs as a result of behavioural change.	A variety of factors will contribute to changes in our behaviour towards driving. While many of these factors are outside of the town's control (e.g., fuel efficiency standards, fuel prices), there are activities that the town can undertake to influence action in this area. Land use policies may be the most effective (see above); however other actions might include: outreach and incentive programs (e.g., Transportation Demand Management, Commute Trip Reduction), especially in "hotspots" as identified through the town's Ecological Footprint, and improved infrastructure and amenities for walking, cycling and transit to ensure progress towards the 2031 transit modal share target of 15 – 20% in the Halton Region Transportation Master Plan.
90% of organic waste is diverted from landfills.	Halton Region is targeting a 65% waste diversion rate by 2016. Ongoing outreach and incentives for waste reduction and diversion, including promotion of backyard and curbside composting opportunities will be required to attain a 90% diversion rate for organic waste by 2020.

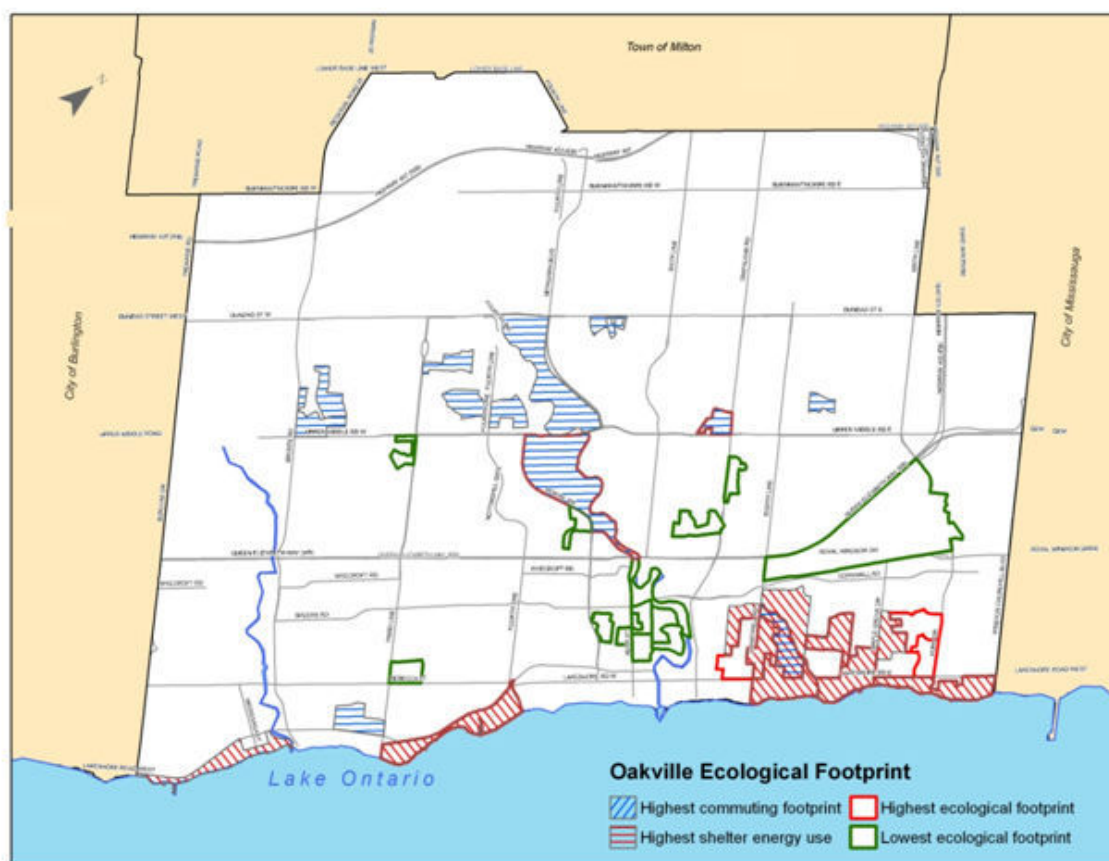


Figure D-3: Ecological Footprint of Oakville neighbourhoods

HOW WILL WE MEASURE OUR PROGRESS?: PERFORMANCE INDICATORS

Different types of indicators³ exist. Primary indicators (such as a community-wide GHG emissions inventory) directly track progress towards the desired final outcome of reduced energy consumption and GHG emissions (i.e. the GHG emissions reduction targets). Secondary indicators are linked to the on-the-ground outputs (e.g., number of commuters taking transit to work, number of green buildings, etc.), which contribute to the desired outcomes of the CEP.

This is illustrated graphically in Figure F-4, where the activities of the municipal government are the inputs (e.g., planning, program development), which have certain outputs (e.g., green buildings, cycling networks, community participation, etc.). The outputs, combined with a range of external factors, determine the final outcome (e.g., energy consumption, GHG emissions).

³ An indicator is a measure that reveals a trend or condition.

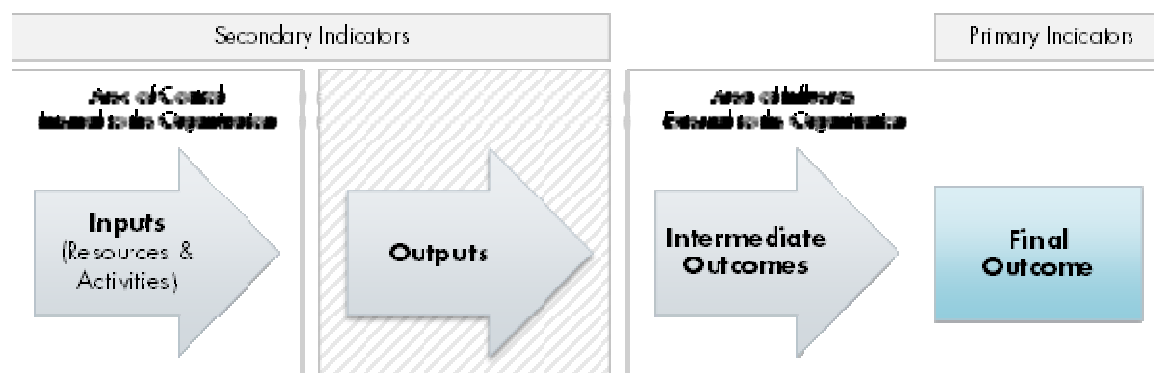


Figure F-4: Measuring inputs, outputs and outcomes with indicators

The community-wide GHG emissions inventory is the best way to measure progress towards the community's GHG emissions reduction target and as such, it should be updated periodically (e.g., every three to five years). Table D-2 shows the primary indicators to report out of the community inventory.

Table D-2: Primary indicators for energy and GHG emissions

Primary Indicator	Data Source
Total energy consumption (GJ)	Community GHG Inventory
Per capita energy consumption (GJ per person)	Community GHG Inventory; Census or town population data
Total GHG emissions (tonnes of CO ₂ e)	Community GHG Inventory
Per capita GHG emissions (tonnes CO ₂ e per person)	Community GHG Inventory; Census or town population data
Total GHG emissions from the buildings sector (tonnes of CO ₂ e)	Community GHG Inventory
Total GHG emissions from the transportation sector (tonnes of CO ₂ e)	Community GHG Inventory
Total GHG emissions from solid waste (tonnes of CO ₂ e)	Community GHG Inventory

Table D-3 offers secondary indicators for consideration. These indicators are broken down by emissions sector (i.e. buildings, transportation, solid waste) and may be used to monitor progress on the activities outlined in the CEP.

Table D-3. Potential Secondary Indicators for use in Oakville's CEP

Secondary Indicators	Data Source
Buildings:	
<ul style="list-style-type: none"> Residential density (dwelling units per hectare) Percent of dwelling units within 400m of a transit stop Percent of existing residential buildings renovated to high energy performance standards (e.g., EnerGuide for Homes 80 or higher). Percent of existing commercial buildings renovated to high energy performance standards (e.g., exceeding ASHRAE 90.1) Percent of new residential buildings exceeding energy performance standards in the current building code (validated through third party rating systems such as EnerGuide, LEED®) Percent of new commercial buildings exceeding energy performance standards in the current building code (validated through third party rating systems such as LEED®, ASHRAE 90.1) Mix of total dwelling units by structural type Percent of homes connected to alternative energy supply Percent of commercial buildings connected to alternative energy supply Fuel share (and percentage of local, renewable supply) 	<p>Census data; municipal GIS data</p> <p>Town of Oakville building permit data</p> <p>Census data</p> <p>Town of Oakville building permit data</p> <p>Census data</p> <p>Community GHG inventory or utility data</p>
Transportation:	
<ul style="list-style-type: none"> Walking mode share Cycling mode share Kilometres of designated cycling lanes and routes Transit mode share Percent of on-time bus arrivals Percent of bus stops with shelters and seats Carpool/Vanpool mode share Percent of new private developments with electric vehicle plug-ins within parking lots Percent of community facilities with electric vehicle plug-ins within parking lots 	<p>Census Data; Town of Oakville Planning Department Data or Oakville Transit Data</p> <p>Town of Oakville building permit data</p>
Solid Waste:	
<ul style="list-style-type: none"> Tonnes of solid waste disposed (total) Tonnes of solid waste disposed (per capita) 	Regional solid waste collection data

NEXT STEPS

The analysis presented in this report indicates that achieving the 2014 target poses a significant challenge for the town. In fact, achieving any level of reductions poses a significant challenge because: (a) Oakville is a growing community, and; (b) the Town of Oakville doesn't have direct control over community GHG emissions. The concept of 'municipal spheres of influence' (Figure D-5) often helps to illustrate this point. (1) Municipal governments have direct control over their own operations (e.g., civic facilities, vehicle fleets, etc.). (2) They have jurisdictional authority over land use and provide a number of other services through which they can influence energy consumption and GHG emissions. (3) External factors also have a significant impact on energy consumption and GHG emissions in our communities. These factors are external to municipal governments and change can only be affected through collaboration and partnerships.

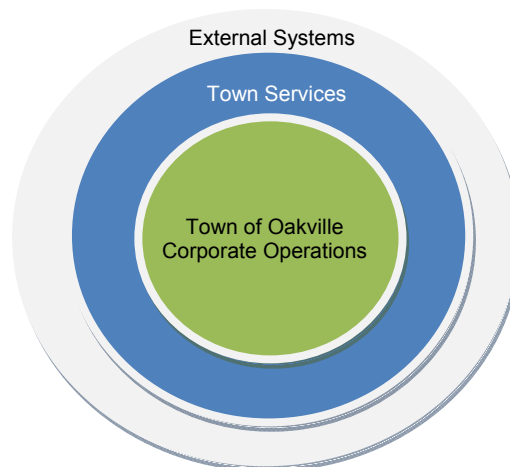


Figure D-5: Municipal spheres of influence

Given this reality, the challenges faced by Oakville are also faced by growing communities across Canada. Moving forward, the Town must continue its efforts to build partnerships and develop collaborative solutions to reduce community GHG emissions, recognizing and communicating that everyone has a role to play.

The following considerations may help to guide CEP efforts into the future:

- *Update/revise the community-wide GHG reduction target(s).* Regardless of whether the 2014 target is met, continued action will be required to ensure that reductions continue even while the community grows. Setting medium and longer term targets communicates a

continued commitment to climate action and ensures a shared understanding of the community's long term goal, which can help to build momentum for action.

- *Update the community GHG inventory.* The analysis conducted for this report relied on estimations and assumptions to determine the GHG reductions likely to result from pre-defined actions. A GHG inventory, which is based on actual energy and fuel consumption statistics, provides a more accurate estimation of GHG emissions in the community. The town may wish to update the community inventory either: (i) in the short term, prior to updating/revising the community target(s), or; (ii) after 2014, to provide a more accurate picture of progress made against the current target and to inform medium and longer term GHG reduction targets.
- *Set absolute GHG reduction targets, but consider also expressing them as intensity or per capita targets.* As a growing community, Oakville faces significant challenges when it comes to reducing energy consumption and GHG emissions. Nonetheless, setting absolute GHG reduction targets is important, both because of the environmental imperative to address climate change and increasingly, because of public expectations. Moving forward, the town may wish to consider expressing targets in both absolute and per capita terms. Per capita targets can help to communicate how we are becoming more efficient with our use of energy, and can impart a sense of the shared responsibility required to address this challenge (Table D-4).

Table D-4. GHG emissions in Oakville expressed in absolute and per capita terms

	2004	2014
Total GHG emissions (tonnes CO ₂ e)	1,252,000	1,182,555
% change in total GHG emissions	--	- 6%
Per capita GHG emissions (tonnes CO ₂ e/person)	8.1	6.6
% change in per capita GHG emissions	--	- 19%

Appendix E: Climate Change Adaptation

The Town of Oakville is one of 12 signatory municipalities working with ICLEI, Local Governments for Sustainability, to create a corporate **Climate Change Adaption Plan**. Endorsed by Council in May 2011, town staff is moving through a five Milestone process with a staff team of individuals from many town departments. Milestone 1 was completed in early 2011 and Milestone 2 is currently being completed (Figure E-1). The town intends to complete up to Milestone 3 in a two year timeframe. Milestones 4 and 5, the implementation, monitoring and reviewing of the plan will continue into the future over the life of the project. Participation in ICLEI's Climate Change Adaptation Initiative is in alignment with all six goals identified in the ESP.

ICLEI's Five Milestones for Climate Adaptation methodology provides a structured approach to adaptation planning which moves participating local governments through a series of progressive steps. Each milestone builds on the findings of the previous milestone, however, the methodology as a whole provides opportunities to reevaluate and review findings and decisions. (<http://www.iclei.org/index.php?id=10832>)

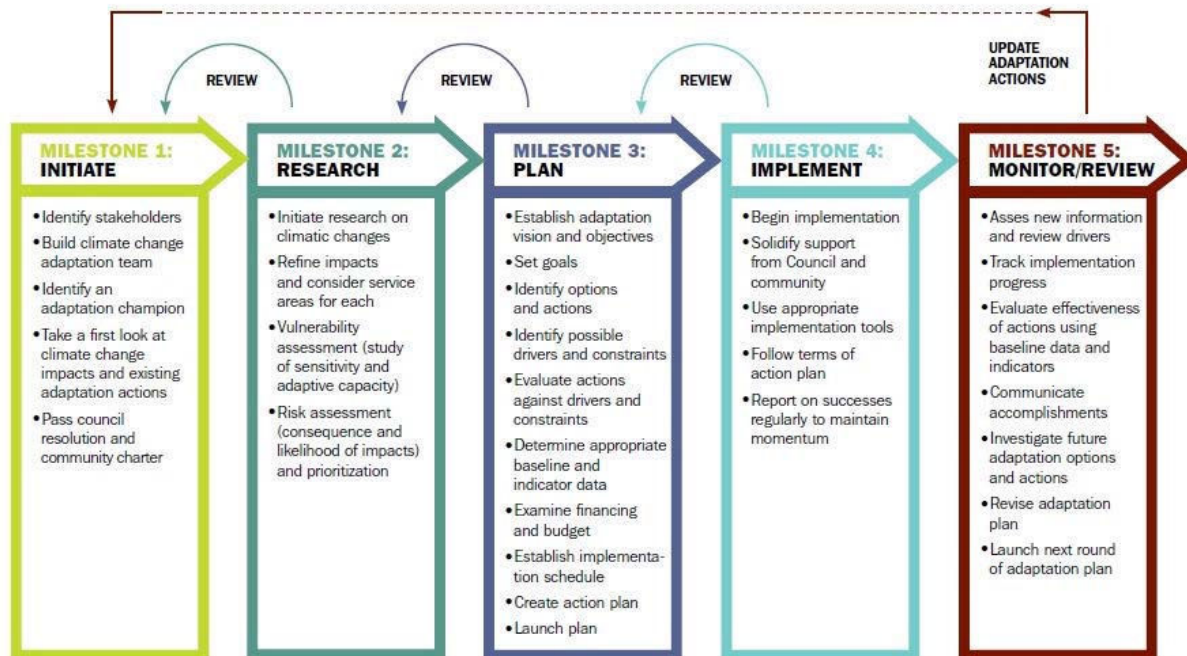


Figure E-1. ICLEI's Five Milestones for Climate Adaptation

CLIMATE MITIGATION ACTIONS IN OAKVILLE

The town has many initiatives already in place that are climate change mitigation actions such as:

- Clean Air Strategies – Smog, Heat and Health Alert protocols
- Sustainable Green Fleet Procedure
- Sustainable Purchasing Procedure
- Sewer-Use Protection By-law
- Anti-Idling By-law
- Corporate Energy Conservation Plan
- Smart Commute and Clean Air Commute
- Urban Forest Management actions including Tree Protection By-laws, tree planting and invasive species removal
- Health Protection Air Quality By-law

ICLEI CLIMATE CHANGE SIGNATORY MUNICIPALITIES

City of Calgary
Capital Regional District
Municipal Corporation of Delta
Regional Municipality of Durham
City of Iqaluit
Town of New Glasgow
City of North Vancouver
Town of Oakville
City of Red Deer
City of Surrey
City of Vancouver
Metro Vancouver
City of Victoria
City of Windsor

Once complete, the plan will be included in the Environmental Strategic Plan.