

Region of Waterloo Environmental Sustainability Strategy



For more information about the Region of Waterloo's Environmental Sustainability Strategy, please contact

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ACKNOWLEDGEMENTS

The Region of Waterloo's Environmental Sustainability Strategy was prepared by a Core Project Team consisting of Ken Noonan, Director of Facilities Management and Fleet Services and David Roewade, Sustainability Planner. The development of the Environmental Sustainability Strategy involved nearly two years of work to establish a practical yet meaningful approach to incorporate environmental considerations in the Region of Waterloo's decision-making framework. This strategy development process included seven committees comprised of Managers and Directors from across the organization addressing the following areas:

- Policy Advisory Committee
- Community Development and Environmental Preservation
- Energy Reduction and Facility Operations
- Facility Construction and Materials Management (includes purchasing)
- Transportation Planning and Fleet Management
- Waste Reduction and Diversion
- Water Conservation and Protection

Participants in all these committees invested much time and expertise which fueled the development of the strategy and provided it with the diverse perspectives needed for an integrative and strategic approach to sustainability. In addition, the Region's Corporate Leadership Team and citizen-based Ad Hoc Environmental Advisory Committee provided important feedback at key points within the strategy development process and helped guide it to completion.

Sincere appreciation also goes out to all those Regional staff, who have time and time again demonstrated innovation and a commitment to continuous improvement within our past, ongoing and planned environmental initiatives. It is this momentum that lifted us up to meet the challenge of developing the Environmental Sustainability Strategy and will enable us to achieve the overall implementation goals.

Several municipalities from across the country also participated in the research phase of the strategy development process and we thank them for taking the time to share their lessons learned. Finally, the many local partnerships and volunteers that support the Region's environmental efforts should be acknowledged as this community continues to demonstrate the collaborative nature necessary to realize the vision of developing a sustainable Waterloo Region.

Message from the Chief Administration Officer

Clean air, water, land and protected green spaces are all critical to ensuring Waterloo Region remains healthy, sustainable and liveable for current and future generations.

The work required to achieve this must balance environmental considerations with community need and the financial capacity of the Region to implement various measures to protect and enhance the environment.

The Environmental Sustainability Strategy included in the following pages takes this approach and aims to fulfill the Region's commitment to "embrace environmental considerations in all of its decision making and foster community stewardship of the natural environment."

Regional staff have been leaders in developing innovative environmental initiatives over the years. This strategy will provide us with a framework to build on these past accomplishments and continue our tradition of environmental leadership in the future.

I look forward to working with Regional staff and our community partners as we refine and implement this strategy. I encourage all of you to work together to identify and participate in the solutions that will improve the sustainability of our Region and of our global environment.

A handwritten signature in black ink, appearing to read "M. Murray". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Mike Murray, CAO,
Region of Waterloo

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INTRODUCTION

What is Sustainability?

Environmental sustainability has become an imperative for our generation. As the impacts of human activity on our planet are increasingly apparent, there is heightened awareness of climate change, ecological footprints, dwindling natural resources, threats to the quality of our air, land and water, and ultimately questions about the ability to sustain our own well-being and quality of life.

These concerns about our environment led to a series of United Nation's sponsored conferences on the human environment starting in 1972. Following the World Commissions meeting on the Environment and Development, in 1987, the Bruntland report, *Our Common Future* (1987) was issued. It provided the following widely accepted definition of sustainability "..... to ensure development meets the needs of the present without compromising the ability of future generations to meet their own needs."¹

Shortly after the Bruntland report, a prominent World Bank economist proposed three operational rules to achieve a sustainable state of development. They are:

- renewable resources must be consumed at a rate no greater than they can be generated;
- non-renewable resources must be used no faster than renewables can be put in place as substitutes, and;
- pollution wastes must be emitted at a rate within the assimilative capacity of the natural systems that absorb, recycle or render them harmless.²



Green Facts:

- If everyone around the world consumed natural resources like Canadians, we would need more than four planet Earths.³
- In the year 2007, Canada released 4.5 million tonnes of pollutants into the air, land and water.⁴
- In 2005, Canada had the highest waste generated per person amongst 17 developed countries.⁵

When the term "environmental sustainability" is used in this document it combines the goal of protecting and enhancing the environment as described above within the role of a regional municipal level of government.

Role of Municipalities

Within the private and public sectors, as well as amongst individual citizens, it is becoming more evident that human health, social vitality, and economic viability are intimately linked to healthy functioning of our natural environment. The call to action is

¹ World Commission on the Environment and Development, *Our Common Future* (1987).

² . Paraphrased from Daly, Herman E., John Cobb Jr., "For the Common Good", 1989.

³ ("Canadian Living Planet Report 2007", World Wildlife Federation)

⁴ As reported to the National Pollutant Release Inventory (Environment Canada NPRI website viewed March 2009: http://www.ec.gc.ca/pdb/npri/2007Summary/p3_1_e.cfm)

⁵ . ("How Canada Performs", Conference Board of Canada website viewed March 2009: <http://www.conferenceboard.ca/HCP/Details/Environment.aspx>)

targeted at everyone, although there is an expectation that governments should do more than other sectors and show leadership in pursuing sustainability in their own actions and facilitating sustainable behaviour by the private sector and individual citizens.

Although environmental sustainability is a challenge for all levels of government around the world, regional and local municipalities are closest to people on a day-to-day basis in terms of ongoing citizen service relationships. Municipal operations, programs and services touch upon many areas of everyday community life and involve decisions and activities that can positively or negatively affect the environment locally and in other parts of the world for years to come.

It is becoming widely recognized that municipalities have an important responsibility to incorporate sustainability as part of their overall role in the community. Over the past decade, an increasing number of municipal governments around the world have embraced this responsibility and developed strategies and plans that ensure they are working towards a more sustainable future. Within Canada, this trend has taken many forms but all of them have a similar aim – to protect and enhance the environment and quality of life in perpetuity.

The understanding that sustainability is not just an environmental issue, but an underlying principle of how we develop as a society, is at the foundation of the Region of Waterloo's Strategic Plan.

The Region of Waterloo's Strategic Plan

The Region's current strategic plan, "Strategic Focus 2007 – 2010" incorporates environmental sustainability within the vision for the Region of Waterloo:

Waterloo Region will be an inclusive, thriving and sustainable community committed to maintaining harmony between rural and urban areas and fostering opportunities for current and future generations.

To achieve this vision, the Region of Waterloo's Strategic Plan for 2007-2010 includes six interconnected Focus Areas, each briefly described within figure 1. Collectively these Focus Areas address quality of life elements such as a healthy community and natural environment, economic prosperity as well as cultural diversity.

The focus of the Environmental Sustainability area is primarily on ensuring a healthy natural environment - clean air, water and land as well as the protection of green spaces and sensitive environmental features. This in turn overlaps and supports other Focus Areas such as Infrastructure and Growth Management and Healthy and Safe Communities. The need for a balanced interrelationship among all six elements is recognized in this plan as well as an integrated approach to achieve its Vision and related Strategic Objectives.

To assist in achieving this integration, the Environmental Sustainability Strategy has been designed to aid in the delivery of high quality programs and services that meet or exceed applicable environmental regulations, while striving to continually improve the Region's environmental performance over time.



Figure 1. Region of Waterloo Vision and Strategic Focus Areas (2007-2010)

DEVELOPMENT OF THE STRATEGY

Project Origin

The Region has a strong environmental record and has integrated environmental considerations into many of its decision making processes. This was documented in “Region of Waterloo’s Past and Present Environmental Initiatives (May 2008)” – a reference document of the Region’s environmental achievements. This document was completed in the initial phases of the development of this Environmental Sustainability Strategy. Most of these achievements have been accomplished as a result of individual program initiatives rather than through a planned, systematic and consistent approach to the environment throughout the organization.

Strategic plans for the last decade have included a wide variety of innovative environmental actions but they have been adopted without an overarching plan establishing priorities or targets. This was recognized within the Region's 2007-2010 Corporate Strategic Plan which identified the need to develop an integrated approach to environmental sustainability within the organization.

One of the action items to achieve this objective includes establishing an Environmental Sustainability Strategy with an overall purpose:

to institutionalize the Region's environmental commitments with an integrated framework and organizational support structure enabling sustainability to be factored into the Region of Waterloo's decision making.

Development Phases

The development of this strategy commenced in September of 2007 with the establishment of a core project team of two staff and has involved approximately 50 managers and staff intermittently over a period of nearly two years. The development was completed in four phases which are summarized below:

- 1) Project planning and approval including establishing inter-departmental committees and a project scope and terms of reference;
- 2) Extensive Research including an internal scan of the Region's environmental initiatives and external scan of sustainability frameworks and best management practices used by municipalities and other local governments around the world;
- 3) Strategy Development focused on developing the most suitable framework for the Region including guiding principles and progress indicators for the sustainability strategy; and conducting the work necessary to identify gaps and opportunities for environmental improvement within the organization;
- 4) Development of the implementation plan including timelines and final recommendations for an administrative support structure and other resources required for ongoing activities identified within the strategy.

Specialized consultants were used to provide input in certain areas needing specific expertise or knowledge. This process has also involved ongoing feedback from senior management and at critical points of the development of the strategy, the Ad Hoc Environmental Advisory Committee.

ENVIRONMENTAL SUSTAINABILITY STRATEGY

The Environmental Sustainability Strategy provides a framework for incorporating environmental considerations into the Region's decision making and outlines a process for establishing targets in all program areas which have a significant impact on the environment. The Environmental Sustainability Strategy consists of six components that build upon each other to create a strategy which will assist the Region achieve its vision of being an "...inclusive, thriving and sustainable community...". The six components are:

1. The *Scope of the strategy* addressing its primary areas of influence;

2. *Strategic Framework* which is the foundation for the Strategy setting out the Region's environmental policy, guiding principles, environmental factors or focus, and five Priority Outcome Areas;
3. *Goal statements* for each of the Priority Outcome Areas within the framework;
4. *Integration of Existing Plans and Strategies* which outlines how the multitude of existing plans and strategies will be integrated with the framework;
5. *Monitoring and reporting progress*; and
6. *Target-setting*.

Scope of the Strategy

Municipalities impact the environment in two ways within their communities. One, as an organization with ongoing internal operations, and two as a provider of community services. *As an organization*, municipalities consume energy and fuel, design and construct buildings, purchase materials and equipment, produce waste and air emissions from various processes to support its service programs. As a municipality directly manages these activities, it has the most control over these activities and can influence their impact on the environment significantly.

Secondly, *as a provider of community services*, municipalities deliver various programs and services to the broader community such as transit, water services, garbage collection and recycling, all of which influence the community's impact on the environment. In this role, municipalities can only exert an indirect but significant influence on the environment, and change can be slow and difficult to measure in some areas. Additionally, regional growth management plans and planning policies shape community development through land use planning authority.

The scope of this Environmental Sustainability Strategy focuses on these two roles of a municipality, and their impact on the environment. These two areas of influence are represented by the yellow and blue circles within Figure 2. Emphasis on the areas where the Region has the most environmental influence will optimize use of resources within the strategy implementation and yield the most direct and measurable results over the next few years.

There are many other local influences on the broader sustainability of the community depicted as the green circle in Figure 2 that are beyond the direct influence of local government. Some examples of this include economic and industrial activities of other organizations within the community, automotive travel, and heating of homes. Other influences on the local environment include pollution coming from areas outside the region as well as provincial and federal environmental law.

Many stakeholders in the region already make a positive contribution to environmental sustainability in this community. Others have the potential to do so or increase their present contribution. It will be important for local organizations and individuals to work cooperatively together over the long term for optimal and long lasting results. This collaboration could eventually lead to a Community Sustainability Strategy which would set goals and targets for the entire community to strive to achieve.



Figure 2. Scope of the Region's Environmental Sustainability Strategy

Strategic Framework

The framework for the Sustainability Strategy is an illustration showing the relationship of key foundational elements of the Strategy in a diagram to make it more easily understood. Several strategic frameworks used by other municipalities such as The Natural Step or Ecological Footprint were considered during the research phase of the strategy development process, but rejected for a number of reasons – incompatibility with the Region's culture, too complex, too many resources required to implement them, etc. It was determined that a customized framework would best fit the Region's needs.

The resulting framework developed for the Region's Environmental Sustainability Strategy shown in Figure 3 is built on the Region's Strategic Focus and decentralized culture, and fully integrates the Region's existing environmental practices as well as the many master plans and strategies developed over the years. It is designed to be simple so it can be easily understood and communicated. The main components of the Region of Waterloo's Environmental Sustainability Framework are:

- the *vision and policy statements*;
- a *sustainability lens* with two interconnected components (i.e. guiding principles and environmental focus); and,
- *five priority outcome areas*.

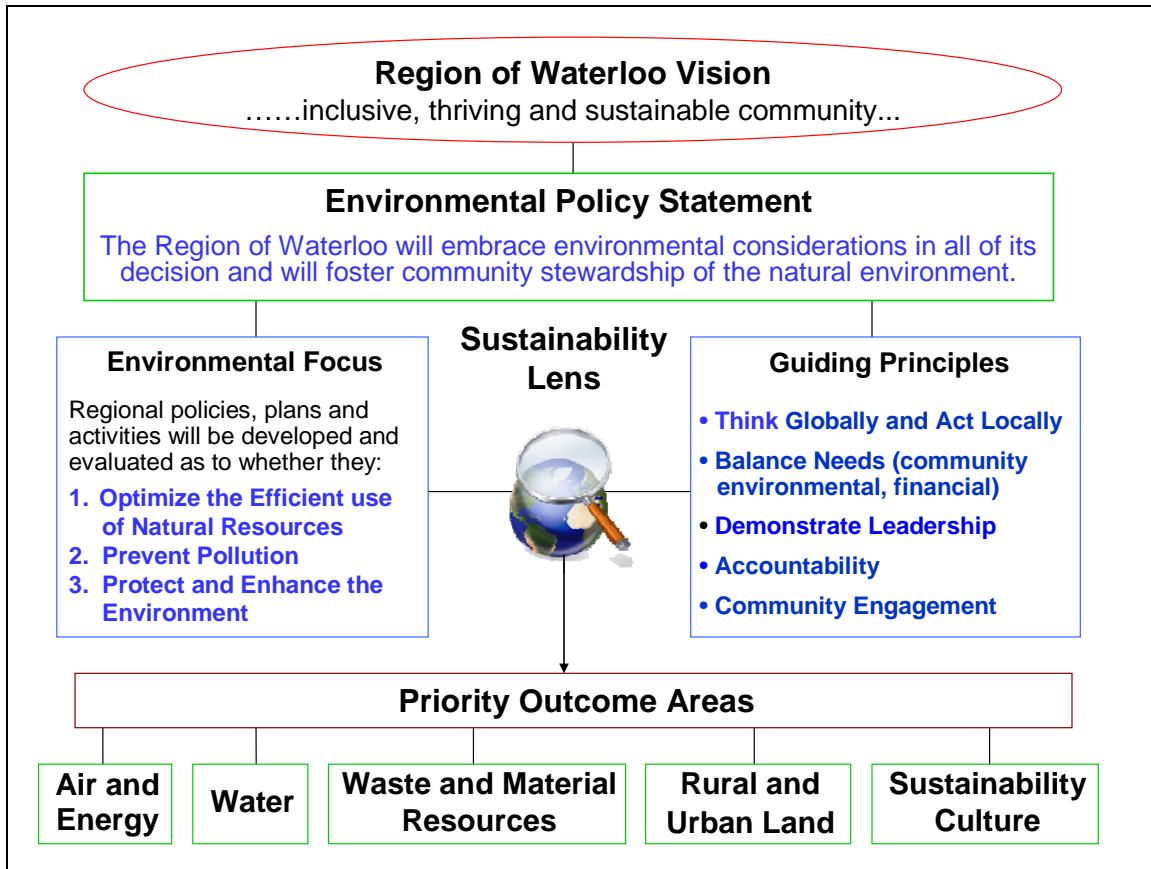


Figure 3. Region of Waterloo’s Environmental Sustainability Framework.

The incorporation of the Environmental Sustainability framework throughout the organization’s operations, programs and services will aim to achieve:

- An integrated and balanced approach to sustainability decision making within the Region of Waterloo;
- A reduction in the Region’s negative environmental impact and an increase in the protection and enhancement of the environment; and,
- Improved communications and accountability for our environmental commitments.

Details of implementation are described in more detail later in this document.

Environmental Policy

The framework builds on the Region’s Corporate Strategic Plan by using its *Vision* of a sustainable community. The *Environmental Policy Statement* is the preamble to Focus Area One within the Corporate Strategic Plan and identifies the Region’s commitment to “...embrace environmental considerations in all of its decision-making and will foster community stewardship of the natural environment.” This provides the Environmental Sustainability Strategy with a strong foundation as the development of the corporate plan went through extensive public and staff consultation and has received Council approval.

Sustainability Lens

The *Sustainability Lens* is made up of two interconnected components:

- *Guiding Principles* that influence the use of the Lens and,
- *The Environmental Focus* of the Lens that identifies the main sustainability factors that the Region must consider in its decision-making.

The *Guiding Principles* incorporate the concept of sustainability and municipal responsibilities, and collectively are the ethic behind the application of the Lens. Each Principle is briefly described further below.

Think Globally, Act Locally acknowledges that through local decisions and actions, efforts are needed to reduce potential negative environmental impacts to other geographic areas around the planet as well as our own community. This principle emphasizes the need to consider, where feasible, all of the environmental impacts that went into making a product, as well as any waste or toxins that may be produced from local processes and where they may be transported to or migrate to through the air and water. Our decisions and actions should not only seek to reduce the environmental impact on the local area but also around the world.

Balance Needs is the most challenging of the principles to apply as it requires all plans and operations to strive to achieve the optimal beneficial balance between:

1. the environment and the impact the plan or operation will have on it,
2. community needs or quality of life for current residents and future generations, and
3. the financial capacity of the Region to avoid or reduce the environmental impact.

Achieving the optimal balance between these important factors will be a major consideration in the responsible management of growth in demand for Regional programs and services over the next few decades.

Demonstrate Leadership speaks to the need to “walk the talk” corporately and individually by demonstrating environmental leadership and setting an example with our Regional operations, planning and daily activities. Although the Region is only one of many stakeholders in our community, its high profile, public visibility and breadth of services place it in an ideal position to act as a champion of the environment which demonstrates good stewardship and encourages others to show leadership as well.

Accountability is an essential principle for any government organization. Within the context of the Region’s commitment to Sustainability, this translates to setting goals and targets, developing and reporting on progress through environmental indicators, and striving to continuously improve our overall environmental performance. Achieving and measuring success in this regard will be an ongoing objective in implementing the Environmental Sustainability Strategy.

The final principle is *Community Engagement* which highlights the importance of fostering environmental stewardship in the region as a shared responsibility. Environmental Sustainability in Waterloo Region, as in any community, will require a collective commitment to continuous environmental improvement.

The *Environmental Focus of the Sustainability Lens* is the overall means for the Region to evaluate and develop plans, strategies and actions to meet the commitment to the Environmental Policy Statement. The Focus has three key environmental elements which must be considered in any decision making.

- *Use natural resources efficiently and in an optimal manner.* In considering this element of the Lens, questions such as the following would be asked. Has energy and water consumption been minimized throughout the life cycle of the activity? Can renewable natural resources be used instead of non-renewable resources? Have local and recycled materials been used whenever possible? Has durability and maintenance been considered?
- *Prevent pollution.* Can materials or harmful chemical releases into our air, land or water be avoided, minimized or at least reduced? Is the maximum amount of waste diverted from landfill? Are measures taken to prevent spills and accidents? Can more environmentally friendly materials and chemicals be utilized in processes?
- *Protect and enhance the environment.* Are greenhouse gas emissions minimized? Has the maximum effort been made to preserve environmentally sensitive lands? Does the decision adhere to the principles in the Regional Growth Management Strategy? Does this help conserve native biodiversity?

The application of the Lens is not a simple matter of asking a series of questions. Each decision will be unique and the questions and application will vary. The successful application of the Lens will also require innovative solutions to minimize the impact of the Region's decisions on the environment. To ensure a consistent and a comprehensive consideration of these environmental factors a series of decision support tools need to be developed (see *Implementing the Strategy* section of this document for more details).

Priority Outcome Areas

The Environmental Strategic Framework identifies the *Priority Outcome Areas* broadly as air, land, water, and material resources and waste. These integrated Outcome Areas or themes for gathering data and reporting progress enable all departmental programs and services to contribute to common environmental targets and indicators developed for the Region. This also allows for consolidated reporting on a corporate-wide basis in a form which will be simple and understood by the public.

The fifth priority outcome area, Sustainability Culture, is the critical people component of the strategic framework. Shaped by the guiding principles, Sustainability Culture is about creating a heightened environmental awareness, norms of continuous environmental improvement and sensitivity to opportunities which arise day-to-day where the intent of the strategy can be realized internally by Council and staff and out in the community by citizens and businesses. This involves promoting opportunities to show community leadership by emphasizing that *everybody has the potential to be an environmental champion*.

Goal Statements



The Environmental Sustainability Strategy provides goal statements for each of the five Priority Outcome Areas that the Region will pursue in its operations, programs and services areas. Table 1 lists these Goal Statements as well as some of the major existing or proposed plans or strategies that will affect these areas.

The wording from the Strategic Objectives within the Region's Strategic Focus 2007 – 2010 (Corporate Strategic Plan) has been utilized as much as possible in developing Goal Statements in order to ensure consistency and integration with the Corporate Strategic Plan. This means that the goals encompass the environmental and related quality of life issues which were identified as priorities by the community during the strategic planning process.






As noted in Table 1 most community oriented environmental areas (community water, waste, etc) have well developed programs, and strategic plans exist to guide actions in these areas. Most of the areas without strategic plans fall into two categories – either they are within the Priority Outcome Area of Air and Energy, or they are a corporate activity. As part of the development of this Strategy these gaps were identified and commitments obtained to complete strategies in these areas over the next two years and submit them to Council for consideration. The resulting actions plans and targets will be integrated into the Environmental Strategy when they are approved. The two strategies scheduled for completion later in year 2009 (i.e. Corporate Energy Management and Greening the Fleet) will help reduce the Region's energy and fuel consumption along with associated air and greenhouse gas emissions (GHGs).

The Environmental Sustainability Strategy will build on these commitments and bring a degree of permanence in embracing environmental considerations within a more integrative action planning process for the future. Regional activities needing additional sub-strategies and action plans (e.g. GHG Reduction Plan) will be developed within collaborative work groups to address the major areas requiring attention and an enhanced sustainability focus.

Action Plans. As a broad strategy document, detailed action plans are not included within its content; rather these are contained within each of the individual master plans, issue specific strategies, projects or annual departmental plans as appropriate. Many of these plans are listed in Table 1. A consolidated list of Regional actions that affect the five Priority Outcome Areas will be provided as part of annual reporting to Council on the strategy.

Table 1. Goal Statements for Environmental Priority Outcome Areas and Related Plans

Note: * ROW plans refer to those directing Region of Waterloo operations

Priority Area	Goal Statement	Major Related Plans and Strategies	Status	
			Exist	To Be Written
Air and Energy 	<i>Effectively use and manage energy resources and reduce greenhouse gases and other air emissions from Regional activities</i>	<ul style="list-style-type: none"> ● ROW* Energy Management Strategy ● ROW Fleet Greening Strategy ● ROW Greenhouse Gas Reduction and Clean Air Plan ● Community Energy Planning Study 		Fall 2009 Fall 2009 2010 2010
Water 	<i>Protect the quality and quantity of our water resources</i>	<ul style="list-style-type: none"> ● Master Plans <ul style="list-style-type: none"> - Water Efficiency - Wastewater Treatment and Biosolids - Long -Term Water Supply - Water Distribution ● Water Resource Protection Strategy ● ROW Water Reduction Plan 	X X X X X	2010
Waste and Material Resources 	<i>Reduce the amount of waste requiring landfill and the demand and impact on natural resources</i>	<ul style="list-style-type: none"> ● Waste Management Master Plan ● Waste Reduction Master Plan ● Landfill Environmental Management System ● ROW Green Purchasing Policy ● ROW Waste Reduction Plan 	X X X X	Nov. 2009
Rural and Urban Land 	<i>Manage and shape land use to ensure a liveable, healthy and sustainable Waterloo Region</i>	<ul style="list-style-type: none"> ● Regional Official Plan and Growth Management Strategy ● Environmental Sensitive Landscapes ● Regional Forest Management Plan ● Rapid Transit EA ● Environmental Stewardship Fund 	X X X	2009 2009
Sustainability Culture 	<i>Foster stewardship of the natural environment and encourage behaviours to reduce environmental impact</i>	<ul style="list-style-type: none"> ● ROW Sustainability Training and Education Plan ● Integrated environmental promotion and education program ● Transportation Master Plan 	X	Early 2010 Sept. 2009

Integration with Existing Plans and Strategies

The potential for integration of sustainability within other existing plans and strategies will be important to optimize both environmental and community benefits as well as to responsibly manage available financial and human resources.

The sustainability strategy is not the first effort by the Region of Waterloo to ensure that environmental considerations are factored into its decision-making. The Region has hundreds of existing policies, master plans and strategies at various levels of the organization, some may be in alignment with the new Environmental Sustainability Strategy while others may not.

The integration of these plans and strategies with the new Environmental Sustainability Strategy could potentially result in environmental and community benefits. However, any decision to bring them into strategic alignment with the Environmental Sustainability Strategy must be weighed against the cost and resources needed to complete this integration out of cycle.

As many existing or pending master plans, policies and activities have incorporated environmental considerations into their plans in varying degrees, the urgency to review them immediately is reduced. As it is normal practice to review and update these major plans and strategies on a five year cycle, the Environmental Sustainability Strategy will not cause these plans to be rewritten but will require the incorporation of the framework when they are periodically reviewed and updated in the future, typically on a five-year cycle. This will be necessary in order to achieve integration with the Strategy and ensure that their environmental effectiveness is optimized and implementation results meet the requirements set out in the sustainability framework.

This integration is particularly important for water and wastewater services, transportation networks and waste management master plans which are key mechanisms to pursue environmental sustainability. Planning and community development impacts are largely addressed by the Regional Official Plan which will over time result in more sustainable use of land and public infrastructure as it implements the Provincial Growth Plan. The Sustainability Strategy and Official Plan are mutually supportive strategic plans which together represent the Region's overarching approach to affect sustainability in the region.

Monitoring and Reporting Progress

Progress indicators are a critical element in achieving any of the goals or targets set out in this strategy or any related Action Plan. If monitored regularly, they highlight progress or lack thereof enabling timely corrective action to put the action back on track.

Within the strategy development process, appropriate environmental progress indicators were developed based on the following criteria: relevance, feasibility, credibility, clarity and reportability. Approximately two dozen progress indicators have been developed to highlight the Region's ongoing efforts in the five Priority Outcome Areas. The indicators focus on the environmental performance of the Region's corporate operations as well as improvements to Regional programs and services which have a community environmental impact.

Two types of progress indicators will be utilized to monitor the Region's progress –

- i) *absolute progress indicators* which monitor progress towards achieving a total reduction in community water consumption or the Region's energy use for example; and,
- ii) *Intensity progress indicators* which monitor improvements in how efficiently the water

or energy is used such as the water consumption per person within the community or electricity consumed per square metre of Regional office space.

This distinction is important in a growing community, because only intensity or efficiency improvements may be achieved in the short term within some progress indicators. Absolute reductions are more likely to be achieved over the long term with the introduction of new technologies or widespread and significant changes in life style or need for resources. This is a common challenge in growing communities as increasing populations can increase the total environmental impacts such as waste generated or water consumed without the intervention of environmental programs. Figure 3 illustrates these two different layers of performance reporting.

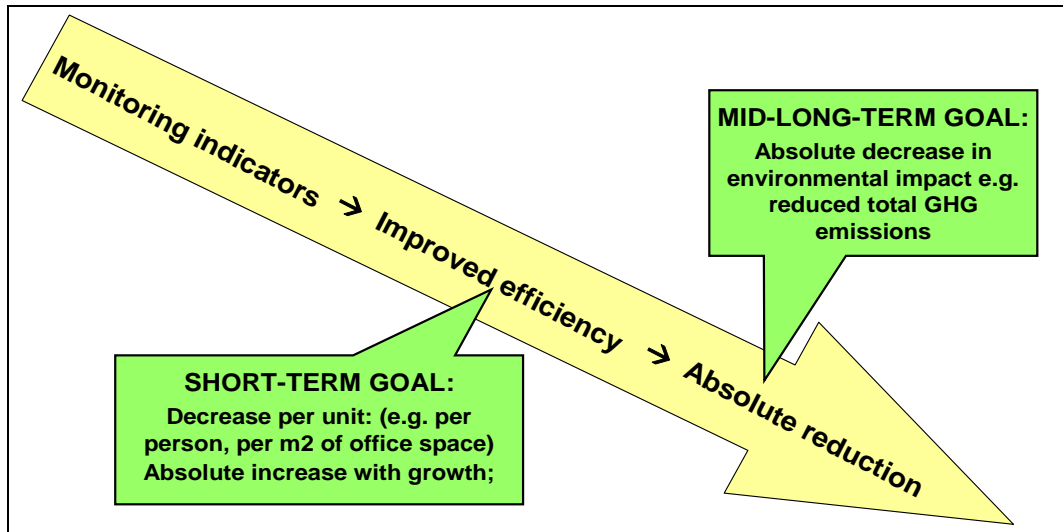


Figure 3. Environmental progress reporting in a growing community.

Table 2 contains a summary of the main environmental progress indicators for each of the primary outcome areas. Appendix A includes the full list of environmental progress indicators, along with their measurement objectives and units.

The indicators related to the Region’s corporate environmental impact as an organization focus primarily on the operation of buildings and fleets. They include such indicators as consumption of water, electricity and fuel along with greenhouse gas emissions and waste production. The community focused progress indicators include areas such as transit ridership, waste diversion (e.g. blue box, green bin programs) and water consumption.

Some indicators can be reported immediately while others need to be further developed. Selecting environmental progress indicators is an evolving process and additional indicators may be added in the future as:

- data collection gaps are addressed;
- new priorities and policy directives warrant, and;
- major initiatives are identified and developed.

This process will take time and therefore the monitoring of progress should be seen as an ongoing effort to provide a high degree of accuracy and relevance to the Region’s environmental reporting.

Table 2. Summary of main environmental progress indicators

* Note: ROW plans refer to those directing the Region of Waterloo (ROW) as an organization.

Priority Area/Goal	Main Progress Indicators	Status	
		Exist	To be developed
Air/Energy <i>Effectively use and manage energy resources and reduce greenhouse gases and other air emissions from ROW activities</i>	ROW* energy use	X	
	ROW fuel consumption (vehicle fleet)		2009/2010
	ROW greenhouse gas emissions	<i>partial</i>	2009/2010
	ROW production/use of alternative and renewable energy sources		2010/2011
Waste and Material Resources <i>Reduce the amount of waste requiring landfill and the demand and impact on natural resources</i>	Community waste going to landfill	X	
	ROW waste diversion		2010
	ROW Sustainable Building and Construction Practices		2010/2011
	ROW Green Purchasing practices		2010
Water <i>Protect the quality and quantity of our water resources</i>	Community water consumption	X	
	Protection of water quality (Community/ROW)	X	
	ROW water consumption	X	
Rural/Urban Land <i>Manage and shape land use to ensure a liveable, healthy and sustainable Waterloo Region</i>	Protection of natural areas (Community)	X	
	Population/employment density (Manage regional growth) (Community)		2010/2011
	Tree planting on Regional Lands (ROW)		2010/2011
	Support and development of community gardens	X	
Sustainability Culture <i>Foster stewardship of the natural environment and encourage behaviours to reduce environmental impact</i>	Transit ridership in the community	X	
	Anti-idling education campaigns (corporate/community)		2009/2010
	Corporate culture of continuous environmental improvement		2010/2011

Reporting Progress. The Framework for the Sustainability Strategy commits the Region to monitor and report on its progress in meeting its environmental goals in the five Priority Outcome Areas. This requirement will be met by:

1. Completing an annual report to Council highlighting the accomplishments in the previous year and the planned actions in the five Priority Outcome Areas in the coming year;
2. Enhancing Council reports to include comments on environmental impacts so consideration can be given to costs and benefits as well as implications on Priority Outcome Areas;
3. Updating the environmental page regularly on the Region's website to be more comprehensive and include linkages to all related pages to provide a one-stop environmental home on the website; and
4. Utilizing a dynamic reporting tool which is highly interactive and user friendly to be utilized by both staff and the public to get information on the progress indicators and other key environmental achievements.

Setting Targets

To demonstrate the Region's commitment to reducing its impact on the environment, short and long term targets need to be established for each reporting area and progress monitored through progress indicators. Targets can take many forms but are generally quantitative data-based goals or descriptive results to be achieved within a certain timeframe. An example of a quantitative target is the one approved by Council as part of the Transportation Master Plan, to increase transit ridership to 19.7 million by 2016. Many examples of descriptive goals are found in the Strategic Focus such as to develop an anti-idling social campaign in 2009/2010. The environmental impact of these latter targets is often delayed, not easy to quantify and their impact can be quite extensive in subsequent years or very minor.

Appendix B illustrates the normal process for establishing targets in a program area. Reliable base line data is essential to start the process and the targets developed will only be as useful as the quality, consistency and reliability of the data collection. Departments will be primarily responsible for researching and setting these targets. The data base exists in most of the Region's community program areas which they have been tracking for years. However this data is non-existent or incomplete in many Regional operational areas. As a result there are currently a number of well established community targets but few corporate oriented ones for our internal operations.

A schedule of existing targets and targets to be developed or evaluated through this process is listed below as Table 3. It should be noted that indicators deemed not suitable for a quantitative target will still have information reported from time-to-time in case study or anecdotal format.

Table 3. Status of Targets Related to the Environmental Progress Indicators

*ROW refers to indicators for the Region of Waterloo (ROW) as an organization.

Existing targets	Short-term targets to be developed (year)	Further evaluation required	Not suitable for target
Road Salt reduction	ROW* energy consumption (2009)	ROW renewable energy use and production (2011)	Waste diverted (ROW construction projects)
Population and employment density	ROW vehicle fuel consumption (2009)	Number of community gardens	Green Purchasing achievements
Transit ridership	ROW GHG emissions ^b (2010)	Protected Natural Areas	Rural Water Quality Program
Water Quality testing – compliance/standards	ROW waste reduction (2010)	Trees planted by ROW	Reduced aggregate (ROW road construction)
Community waste diversion ^a	ROW water consumption (2010)	Anti-idling education campaign	
Community water consumption		ROW corporate sustainability culture	
Water efficiency (community)			

^a Based on green bin projections

^b Facilities and fleet only

IMPLEMENTING THE STRATEGY

The overall goal of the Environmental Sustainability Strategy outlined in this document is to ensure environmental impacts are taken into consideration in all decision making in the corporation. To accomplish this, some additional tools and supports are required to ensure the Strategy can be implemented successfully. This section outlines why and what additional tools and supports are required. The areas to be discussed include:

- i. The integrative **Decision Support Tools** that will aid with the organization-wide application of the Environmental Sustainability Lens;
- ii. The **Organizational Structure** required to support the ongoing implementation of the Region’s Environmental Sustainable Strategy;
- iii. An overview of an on-going **Promotion, Education and Engagement** program to develop a culture of sustainability both within staff and the public;
- iv. The overall implementation **Timelines** for major priorities in the Strategy and,
- v. A brief overview of **Funding** resources needed to implement this Strategy.

Decision Support Matrix

The range and scope of Regional operations and services provided to the public are extensive and include:

- Regional Planning
- Museums and Heritage Sites and the Rural Library System
- Police and Emergency Medical Services
- Waterloo International Airport
- Public Health
- Social Housing
- Provincial Offences Court and Licensing and By-Law Enforcement
- Public Transit and Specialized Transit
- Social Services including Child Care and Senior's Services
- Regional Roads and Traffic Signals
- Waste Management
- Water Supply and Wastewater Operations

To assist in the application of the Sustainability Lens to this diverse range of services, a decision support matrix has been developed. The matrix identifies the main types of common decisions made by these different program areas and provides approaches or tools which can be used to achieve the commitment of "...embracing environmental considerations in all decisions..." as required by the Strategy. The matrix ensures a consistent approach is followed in evaluating environmental impacts across the organization.

The following four main areas of decision-making were identified as having the greatest potential of influencing environmental impact within the Regions operations, programs and services:

1. Planning
2. Purchasing
3. Infrastructure Life Cycle
4. Office and Field practices

Within each decision categories, the matrix addresses the application focus of the lens, tools and decision supports to aid the process, and timelines for a realistic and incremental implementation. Appendix C includes the complete decision matrix which is illustrated in summary form as Table 4 and described in further detail in the following pages (timelines are only included in the overall five-year plan addressed at the end of this section and the appendices).

Planning decisions include the development of the Region's corporate and departmental strategic plans, master plans, environmental assessments for major infrastructure, as well as the ROP policies that govern them. To effectively bring decision-making for strategic and master plans into *alignment* with the Environmental Sustainability Strategy, the Environmental Lens will need to be specifically modified to fit the subject area and overall principles developed to guide the development of the plan. These principles and their performance indicators will be unique for each planning process due to the specialized focus of the departmental/master plan and its scale.

For Environmental Assessments (EAs), the Region as the proponent of a project undergoing an EA will have the authority to incorporate applicable goal statements from the priority outcome areas along with the direction of applicable Regional Official Plan

policies within the scope of the assessment to further guide the process. A standard format for amendments to the Scope of Work of EA's will be developed in 2010/2011.

Table 4. Condensed version of the Decision-Support Matrix

Type of Decision	Planning and EAs	Purchasing	Infrastructure Life Cycle	Field/Office Practices
How to Apply Sustainability Lens	Strategic Alignment (Strategic Plans and Strategies) Scope of Work (Environmental Assessments – EAs)	Enhanced Green Purchasing Policy Environmental Purchasing Guide (EPG)	Environmental standards for design and construction of buildings, roads, bridges Simplified Environmental Management Systems approach (Process/operations)	Staff engagement, education and training EPG Guidelines
Additional Tools and Supports	Environmental Sustainability Section (ES Section) Analytical Software for EAs	Life Cycle Analysis (LCA) Life Cycle Costing (LCC)	<ul style="list-style-type: none"> • EPG • LCA/LCC 	<ul style="list-style-type: none"> • ES Section • Employee intranet • On-line calculators

Regional **Purchasing** includes a wide variety of products such as vehicles, energy and fuel, office furniture/supplies and equipment, building and construction materials as well as services such as couriers and maintenance contracts. Some purchasing is centralized such as for office paper and janitorial services, but many other products are acquired by individual divisions within each department. Several municipalities have developed an Environmental Purchasing Guide (EPG) as a decision support tool to facilitate the implementation of a consistent organization wide practice of green procurement. The Region's existing Green Purchasing Program will be enhanced by developing a more comprehensive policy and developing its own EPG. The Guide will act as the main tool to enable all departments to incorporate environmental considerations into all of their procurement. This best practice will be adopted by the Region in the winter of 2009/2010.

Infrastructure is a common term used by municipalities to describe roads, bridges, water/wastewater plants and waste management facilities. For purposes of this Strategy it has been broadened to include all other service and employee facilities such as child care centres, libraries, affordable housing and office buildings. In terms of decision-making, this includes the entire life cycle of the infrastructure from its conception, through its design, construction, operation, maintenance and upgrade, to its eventual disposal. These different types of assets are broken down into three sub-categories:

- **Buildings:** Currently all new Regional buildings greater than 500 m² except process plants, are constructed to achieve a minimum of a Silver rating in the Leadership in Energy and Environmental Design (LEED) program operated by the Canadian Green Building Council. This has been effective in significantly reducing the environmental impacts of construction and operating the buildings and it is proposed that this standard continues to be used and, as appropriate, enhanced.

Although LEED rating standards are not available for process plants, many of the LEED guidelines for areas such as use of local and recycled material, and water and energy efficiency can be utilized in the design of these facilities to reduce their impact on the environment. In the 2010 - 2011 time frame, LEED standards will be considered as a guide for all process plants in new construction to bring them into alignment with the Environmental Sustainability Strategy. It is anticipated that this action will not result in any increase in the cost of construction.

For existing buildings, other than process plants, their environmental rating will be evaluated using the LEED standard for Existing Buildings - LEED (EB). This assessment standard encourages owners to adopt continuous improvement methods to reduce the impact of their buildings on the environment.

- **Roads and Bridges:** In addition to the Environmental Purchasing Guide influencing the design and construction of roads and bridges, a national Green Guide for Roads is in development which includes environmental performance criteria for all aspects of the roadway over its life cycle. Once complete, this and other best management practices will be considered for adoption by the Region.
- **Process and Operations:** Through a simplified environmental management system (EMS) approach, Regional mechanical processes and operations can be enhanced by identifying environmental aspects and assessing their degree of impact, evaluating alternative options for improvement and reducing or eliminating significant impacts. A simplified EMS approach will be developed in 2011/2012.

Factoring in environmental considerations into these areas will need to be balanced against other issues such as site conditions, capacity, structural integrity, material availability and cost.

Office and Field Practices refer to Regional staff work activities such as records management, vehicle operation and staff business travel, to name a few. The focus of this category is to create a corporate culture that is aware of the environmental implications of routine actions and desirous of continuous environmental improvement to demonstrate leadership and environmental stewardship such as zero waste meetings, electronic versus paper records and reduction of vehicle idling. A corporate-wide promotion, training and education program will be developed and incrementally rolled-out to the different divisions with ongoing supports. This will be supplemented by the general guidelines describing how to conduct environmental reviews and what factors to consider in the Environmental Purchasing Guide.

The integration of environmental sustainability into the four decision-making processes above will be a significant challenge in light of pressures such as budget constraints, increased demand for Regional programs and services due to community growth, as well as provincial and federal legislation affecting municipal responsibilities. The establishment of an Environmental Sustainability Section, described in the following pages, will act as the main resource support for all departments when incorporating the Sustainability Strategy and Lens into the organization's decision-making frameworks.

Organizational Support Structure

The decentralized nature of the Region of Waterloo's operations and the large variety of business units are challenges to the successful implementation of the Strategy. To overcome these challenges it is critical that a cross-departmental decision-support structure be put in place to ensure the Strategy is implemented in a consistent and integrated manner in all program areas and appropriate priority is given to its application.

A review of the requirements to successfully implement the Environmental Sustainability Strategy has indicated the need to establish:

- an Environmental Sustainability Section of the organization to coordinate and support departments' implementation of the strategy;
- an Environmental Leadership Committee to champion environmental improvement, provide guidance and set priorities; and,
- staff working groups for cross-departmental focus on specific issues such as greenhouse gas reduction and environmental promotion and engagement.

These organizational support elements are illustrated in figure 4 and described in more detail within the following pages.

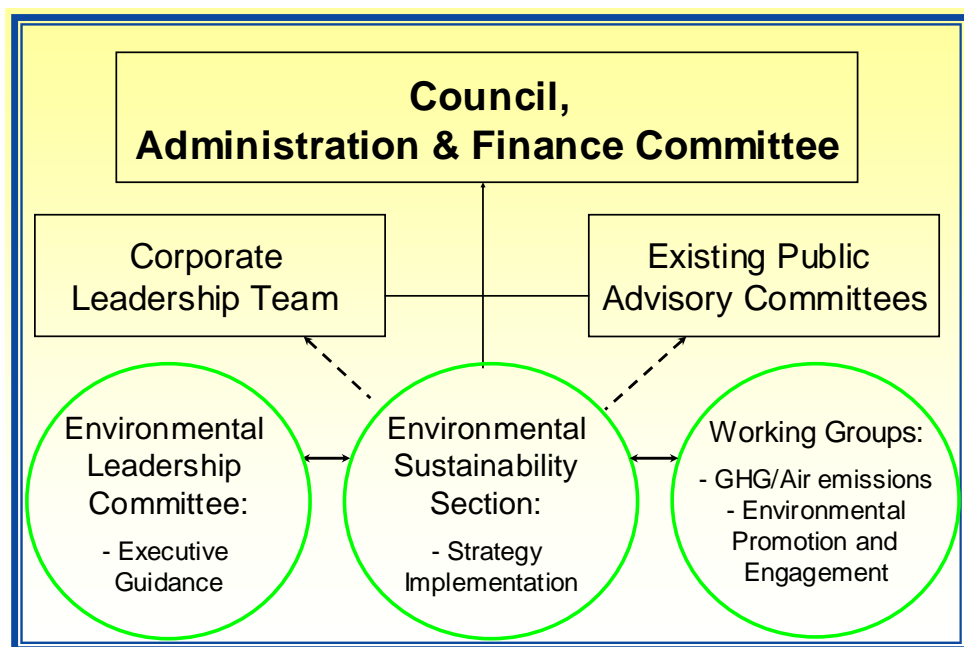


Figure 4. Administrative Structure for the Environmental Sustainability Section

Environmental Sustainability Section. To manage the development, coordination, support and education/promotion functions of implementing environmental strategies, several other municipalities in Canada have established an **Environmental Sustainability Section (ES Section)** within their organizations. Considering the decentralized operational structure at the Region, the organization-wide scope of the Environmental Sustainability Strategy and the workload capacity of existing departments, a similar support structure is required for the Region of Waterloo to successfully implement the strategy.

Resources exist within the program areas to implement many of the elements within the strategy *when* decision support tools have been developed and training is provided on their use. It is envisaged that this process would occur over a three to five year timeframe as described in the Timelines section of this document. Currently, there are no resources available to develop these decision support tools; coordinate and assist program areas implement the strategy; integrate and analyze the data at the corporate level; and to create the conditions necessary for achieving an attitudinal change to a sustainability culture within the organization. The success of implementing the Strategy and transforming the Region's individual environmental initiatives into a cohesive and comprehensive environmental plan are dependent on providing these additional resources to establish the ES Section as outlined below.

The **main roles and responsibilities of the ES Section** are set out below:

- a. To provide regular **consolidated reporting** on the five Priority Outcome Areas outlined in the Strategy to Council, the public and staff;
- b. To **support Regional programs application of the environmental lens** to all of their decision-making by working with them to develop the tools necessary for the wide range of decisions made within the Region and to assist in training staff to utilize the tools and monitor their application;
- c. To develop and coordinate an **integrated education and promotion** program promoting awareness and action amongst Region of Waterloo staff, organizational stakeholders and the public with regard to identifying and reducing our impact on the environment as a community;
- d. To **coordinate new** cross-departmental **environmental initiatives** and events as assigned;
- e. To act as the **Regional representative** for broad environmental issues not within the mandate of other departments; and
- f. To **maintain and update** the Environmental Sustainability Strategy, progress indicators and other elements of the strategy

The resources *required to carry out the* responsibilities outlined above is estimated to be two staff – an Environmental Sustainability Specialist and a Promotion and Education Coordinator. One internal position has been identified which can be transferred to this new section. The second position will be requested as part of the 2010 budget process.

Environmental Leadership Committee. While the ES Section will provide the resources to develop, coordinate and support programs to implement the strategy, successful change management requires the active guidance of senior management. To carry out this role an inter-departmental policy and advisory committee will be established to

provide guidance and support to the ES section. The mandate of this committee, called the ***Environmental Leadership Committee***, would be to ensure that the planning, implementation and monitoring of the Sustainability Strategy is carried out in a coordinated, effective and efficient manner. Commissioners will be the executive sponsors of this committee with representation from Directors from each department including the main divisions with significant environmental impacts.

For the ongoing implementation of the strategy, four ***Environmental Working Groups*** will be established to focus on those decision making areas which involve multiple departments. This will aid in the application of the Sustainability Lens and will ensure plans, targets and procedures are developed, coordinated and applied consistently. The four Working Groups are: Greenhouse Gas/Air Emission, Purchasing and Materials Management, Infrastructure, and Environmental Promotion and Engagement.

Promotion, Education and Engagement

Engaging Regional staff and members of the community will be necessary to fulfill the goal of the fifth Priority Outcome Area – Sustainability Culture. While the other four outcome areas focus on the tangible changes in mechanical processes, equipment, construction, or energy aspects of Regional operations and services, the Sustainable Culture priority area is focused on the knowledge, attitudes and behaviours of people that lead to positive environmental choices and actions.

Appropriate mechanisms will need to be developed to train and educate staff to encourage them to incorporate the environment into their day to day thinking and to enable them to implement the strategy in their work areas. In addition, an integrated approach for the promotion and engagement of the Region's many environmental programs needs to be developed to increase public participation in them and to enhance the overall promotion of sustainability in the community. These actions are important in encouraging behavioural change towards actions and decisions that reduce environmental impacts as well as aid in fostering environmental stewardship throughout Waterloo Region.

[Staff Education and Training](#): It will be important to have staff embrace environmental sustainability not only in the way the Region operates but also in the way the Region delivers its programs and services. In other words delivering on a commitment to Service Excellence within the organization requires a parallel commitment to Environmental Excellence.

The earlier sections on the application of the *Sustainability Lens* and the *Decision-Support Matrix* identified some specific areas or issues where specialized staff education and training is needed to enable the consideration of environmental factors within primary decision-making areas of influence (e.g. planning, purchasing, design and construction). Ensuring the Lens is applied completely and objectively will require conviction that positive benefits will accrue to the organization and the community at large. This cultural shift is essential if the application of the Sustainability Lens is to be effective now and continue into the future.

In the area of office and field practices of staff, other education programs will be developed for the entire organization to influence day-to-day behaviours. Examples of

existing or planned internal education/training initiatives focused on staff activities in this respect include:

- Green bin project to collect organic waste from the Regional corporate facilities
- An employee focused program to encourage more sustainable transportation modes for commuting to work (e.g. transit, cycling, walking);
- Driver training to encourage practices that reduce emissions (and improve safety) while operating Regional vehicles, and;
- Promotional supports to enable staff to reduce their environmental impact by conducting zero-waste meetings within Regional facilities, reducing their individual consumption of energy at work etc. .

All Regional staff have an opportunity to contribute to environmental leadership by acting as community ambassadors and participating in the Regions various internal and external focused environmental initiatives. This perspective shows integrity when the Region conducts public promotion and education campaigns by demonstrating environmental responsibility within its own role in the community.

External Promotion and Engagement: Several departments within the Region of Waterloo have a long history in developing and delivering promotion and education programs for the community on a wide variety of environmental topics. Examples of such programs include reduction of vehicle idling, water efficiency, waste diversion as well as promotion of transit, walking and cycling within the Region for cleaner air and physically active transportation.

Historically, these types of programs have been developed by an individual department and contain focused messaging to garner a desired behavioural change or action. To enhance the overall promotion of sustainability in the community, a more comprehensive approach to engaging the public and community stakeholders is required.

An enhanced approach to integrated promotion and engagement will provide improved access to information on environmental programs and services to the various community stakeholders. It will also help address gaps in current programming such as promoting reduction of greenhouse gases. Other enhancements may include exploring the use of tools to quantify reductions in environmental impact (e.g. ecological footprint calculators) along with recognition and incentives to those committing to sustainable practices.

Building on the success of existing and past Regional social marketing programs, target audiences should be engaged by introducing an integrated program providing them with choice and flexibility on how they could contribute to the development of a community culture of sustainability within this region. This may also result in improvements to the community-based Environmental Progress Indicators.

A draft integrated Environmental Promotion and Education Plan has been developed which addresses the elements identified above. The plan will be finalized in collaboration with the Environmental Promotion and Engagement Working Group and submitted to Regional Council in the fall of 2009 for their consideration.

The overall goal of this plan is to provide an integrated program promoting awareness and action amongst the Region of Waterloo, organizational stakeholders and the public with regard to identifying and reducing our impact on the environment as a community.

This will be an important step towards achieving an enhanced culture of continuous environmental improvement amongst Regional Staff as well as fostering environmental stewardship within the community.

Timelines

An incremental approach to implementation of the Strategy will be required to realistically address the wide range of work in it and to gradually move the organization towards enhanced decision-making processes. The timelines included in this strategy have been developed recognizing the Region's workload capacity and other major commitments and initiatives. The time period included in this plan is limited to five years which is a reasonable initial timeframe in that some related long-term planning processes are occurring during 2009 - 2013. Figure 5 summarizes the major activities involved in strategy implementation.

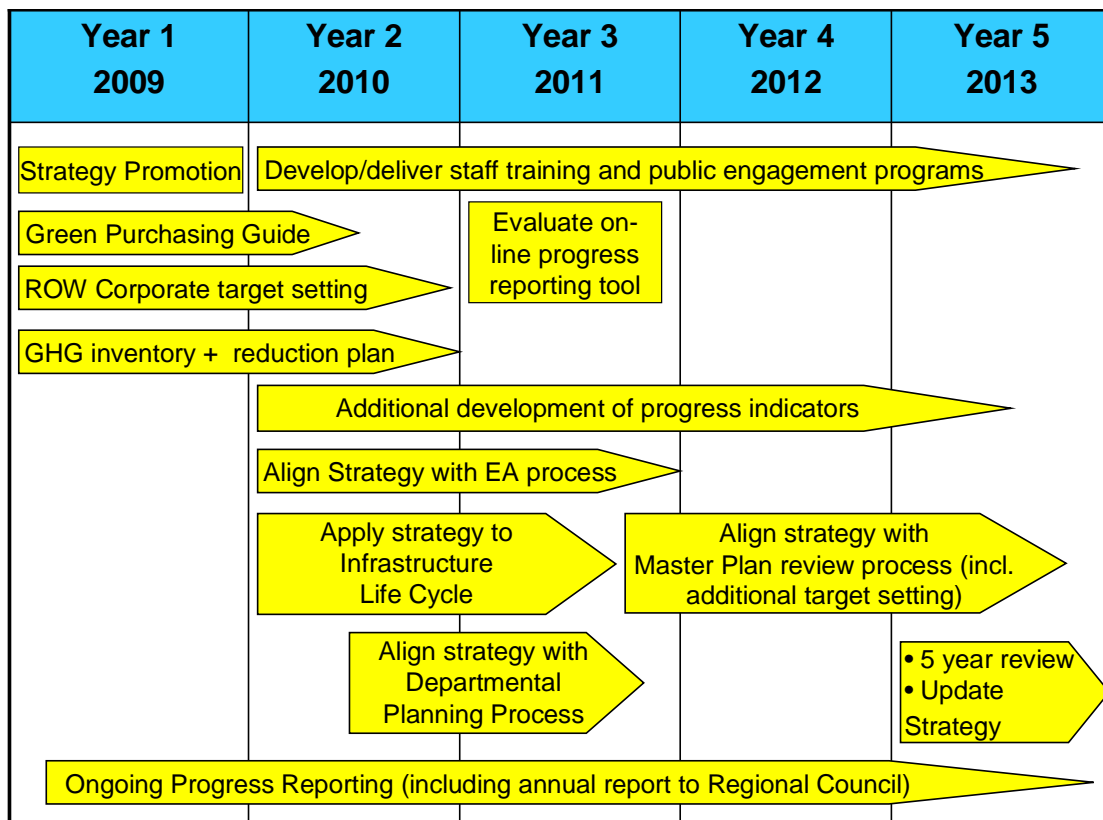


Figure 5. Implementation Timelines for First 5 years of the Sustainability Strategy

As the Strategy was submitted for Council's approval in mid-2009, the remainder of the calendar year is mainly focused on general promotion and further development of the public reporting tool for accountability purposes. Closely related to the reporting is the necessity to further engage the appropriate departments in establishing realistic targets associated with the Region's Environmental Progress Indicators as this will be one of the main public mechanisms used to evaluate the effectiveness of the Sustainability Strategy.

Other priorities for the first two years of Strategy implementation include:

- Preparation and roll-out of a Green Purchasing Guide and enhanced policy;

- Completing a greenhouse gas inventory of the Region's emissions and a reduction plan for the organization;
- Development of ROW staff training programs as well as a community-based social marketing public engagement program along with their subsequent delivery;

Years three, four and five will need to be focused on supporting Regional departments in their planning processes to ensure strategic alignment of the Sustainability Framework's Principles, Goals and five Priority Outcome Areas in terms of integrating environmental considerations into their planning and operating processes. This includes:

- Departmental Strategic Planning (as part of the Corporate Strategic Planning Process every four years);
- Master Planning (Water, Waste, Transportation), and;
- Infrastructure Life Cycle planning and design

Additional tasks during 2011-2013 include ongoing development of the progress indicators and maintenance of projects initiated in years one and two. During the five year period of the implementation plan, annual reports will be provided to Regional Council and made available to the public via the internet. These reports will focus on major achievements and the administrative process in evolving the Strategy.

There are periodic checkpoints where components of the Sustainability Strategy are evaluated for necessary adjustments (see Feedback and Evaluation section). During the fifth year, a comprehensive review of the Strategy will need to occur in order to identify new issues and consider opportunities for improvements to the Strategy to ensure its ongoing relevance, effectiveness and innovation. Recommendations for revisions and updates will be presented to Council at the conclusion of the review.

Funding Support for Environmental Initiatives

During the normal budget cycle, Regional Council considers funding for environmental initiatives along with a wide variety of other departmental budget requests to support all Regional programs and services. At this time, a fund specifically established to support environmental initiatives is required to further advance sustainability in Regional operations, programs and services as well as community development. In October 2008, Regional Council approved in principle the Environmental Initiatives Fund. The purpose of the fund is:

"...to assist the Region meet its environmental objectives set out in the Region's Strategic Focus and Corporate Environmental Sustainability Strategy related to air quality, energy, water and waste reduction, and other general environmental objectives by investing in community and corporate environmental initiatives which:

- provide the highest environmental return,
- act as a catalyst in advancing the adoption of cost effective new technologies,
- promote behavioural changes in the community and staff, and leverage additional funding or in-kind contributions from partners."⁶

⁶ "Proposed Environmental Initiatives Fund," Corporate Resources Report to the Regional Administration and Finance Committee, Sept. 30 2008 (deferred to Oct. 29, 2008), Report# CR-FM-025.

Although the concept of the fund was approved, the financial and administrative resources required to operate the fund have yet to be established. This has been referred to the Long Term Budget Strategy later in 2009 for consideration.

FEEDBACK AND EVALUATION

Keeping the Environmental Sustainability Strategy effective and responsive will require ongoing and cyclical evaluation of various Strategy components and providing opportunities for feedback from various stakeholders. Other sections within this report have briefly touched upon some methods of obtaining this feedback. These are summarized in Table 5.

The importance of obtaining feedback and evaluation in this context is to make it part of an ongoing social learning or adaptive management process. This means that the feedback should influence an ongoing evolution in strategic approaches to achieving stated goals and objectives. Within the administration of the Environmental Strategy and Sustainability Framework, this will be important to enable continuous environmental improvement.

Table 5. Main Avenues for Feedback and Evaluation of Strategy Components

Component of Strategy	Stakeholder Group	Feedback Avenue and/or Method	Frequency
Environmental Progress Indicators	<p><u>*All groups:</u></p> <ul style="list-style-type: none"> - Community residents - Regional Councillors and staff - Other organizations (businesses, institutions, non-profit sector) 	<ul style="list-style-type: none"> o Mini-survey and on-line discussion tools available from main reporting page o Feedback tab within each scorecard 	Ongoing
Community Targets	*All groups	<ul style="list-style-type: none"> o Master Plan review o Sub-plan/strategy updates 	Every 5 years
Corporate Targets	Region of Waterloo Management and Staff	Through Environmental Leadership Committee and Working Groups	Every 3-5 years
Overall Strategy	*All groups	Internal/External consultations and on-line surveys	Every 5 years

ITEMS FOR FUTURE CONSIDERATION

A few key items have not been addressed within this strategy as they are still in the early stages of study or resources have not been allocated to address the issue. These issues are briefly addressed in this section.

Community Energy Planning

Region of Waterloo Public Health is the lead department in investigating the “...*feasibility of a community energy planning strategy including land use and community design for more efficient energy use.*” Community Energy Planning is a proactive way to integrate sustainability into growth management and community planning while also influencing important issues such as community greenhouse gases and other air emissions and their impact on human health for current and future generations. This action is identified to be completed by the year 2010 within the Environmental Sustainability Focus Area of the Region’s Corporate Strategic Plan. The study will be limited in scope to assessing the feasibility of initiating a community-wide energy planning process and the resources, timelines as well as the pros and cons of commencing this type of endeavor.

Carbon Credits

Carbon credits are registered certificates acknowledging the verified reduction of greenhouse gas emissions (GHG’s) that can be bought and sold (carbon trading) as well as retired. There is an international market for carbon trading which involves both regulated private sector companies and public sector organizations such as government entities at all levels (i.e. federal, provincial, municipal).

In 2003, the Federation of Canadian Municipalities (FCM) established a not-for-profit company called Green Municipal Corporation (GMC) as a pilot project to accumulate carbon credits from selected municipal landfill sites. More recently, FCM initiated a feasibility study to determine the viability of expanding the services of GMC whereby they would become an aggregator of carbon credits and provide the necessary support for municipalities having the capacity and interest in carbon trading as a result of their emission-reduction activities. The study concluded that there is a role for GMC as a national aggregator and that this would be an appropriate service for FCM members in areas such as landfill gas capture, renewable energy, municipal solid waste, biogas, wastewater, vehicle fleets and energy and transportation infrastructure.

The Region of Waterloo has reduced its GHG output by thousands of tonnes during the current decade and has recently been tracking individual initiatives as reported through its involvement with the Waterloo Region Partners for Clean Air and other public reporting initiatives. The development of a more substantial greenhouse gas emissions inventory which tracks GHG emissions and reductions has been identified as a priority within the *Timelines* section of this strategy as well as a progress indicator from the accountability perspective. This inventory must be completed prior to any policy being developed to decide what to do with potential credits resulting from verified emission reductions. If the credits are not substantial in quantity then no further action may be required. If they are substantial then a study will need to be completed to determine if the credits should be sold, retired or simply protected from possible use by others.

To protect Regional interests, prior to completion of any corporate policy on this subject, the Environmental Sustainability Section will work with the Finance Department and Legal Services to develop wording for future contracts to ensure the Region has full ownership of any carbon credits generated by their projects. Policy recommendations addressing the Region’s involvement with carbon credits will need to include a detailed analysis of the requirements and implications of the registering, trading and retiring

options as well as the ethical considerations. This will be a subject of a future report for Council consideration.

Climate Change Adaptation

Climate change adaptation is the proactive planning for known or anticipated impacts from a changing global climate. The rapid melting of Arctic ice caps is one of the most visible impacts of climate change. Scientific evidence indicates that global climate change will dramatically alter all aspects of environment including the land, the livelihood of its people, the biodiversity of the area and its weather. Some of these impacts include increased frequency and intensity of storms affecting extreme hot and cold temperatures, flooding or drought, change in the geographical range of pestilence and disease, impacts on natural resource supplies and increased stress on infrastructure. Similar changes but to a lesser degree may occur in Waterloo Region.

The Environmental Sustainability Strategy addresses the causes of climate change (i.e. greenhouse gases, energy consumption and air pollutants) but it does not address what the Region should do to prepare or adapt to these changes – in emergency planning, need for additional health resources, adequacies of municipal infrastructure or water supply. Several municipalities across Canada have engaged in developing “resilient cities” to address these and other climate adaptation change related issues. The Federation of Canadian Municipalities has identified this as an area of future concern and made submissions to the federal government for assistance in this area.

This national movement to plan for climate adaptation will inevitably influence planning activities within the Region of Waterloo. Whether this is seen as part of future Corporate Strategic Planning or within the scope of the Environmental Sustainability Strategy remains to be seen. Of most importance is that the dialogue on the matter exists and is kept on the radar as the impacts that have been occurring in other parts of the world are clearly affecting quality of life for those people that are suffering from climate change related events. Regional staff will continue to monitor the developing area of interest and update Council as appropriate.

Partnerships

The Region of Waterloo is currently engaged in a wide range of partnerships regarding environmental issues and initiatives. Partners include other levels of government, private sector businesses as well as non-profit organizations. Partnerships are valuable when common mandates are identified and coordinated approaches can be developed as they leverage resources and can improve the impact of the initiative.

Developing and working within partnerships also take time and resources and can sometimes prolong the timelines for achieving certain outcomes. Balancing issues such as jurisdictional authority, workload capacity, compatibility and timing all play a role in considering if a partnership venture will be beneficial for all those involved as well as optimize benefits for those who are affected by the results of the initiative.

Partnerships amongst the area municipalities within the region exist in specific areas such as storm water management, land-use and infrastructure planning and environmental preservation. There is a limited partnership for air quality called the

Waterloo Regional Partners for Clean Air. This partnership is primarily an information sharing network which produces an annual report on the partner's individual activities in this area. Generally, there are no local partnerships in the broad scale sustainability issues (e.g. community energy planning, climate adaptation) but in some cases these are being developing in other municipalities outside of the Region. It is felt that this will change locally over the next few years as sustainability plans evolve in each municipality and opportunities to collaborate with other organizations continue to be identified.

APPENDIX A – Region of Waterloo (ROW) Environmental Progress Indicators

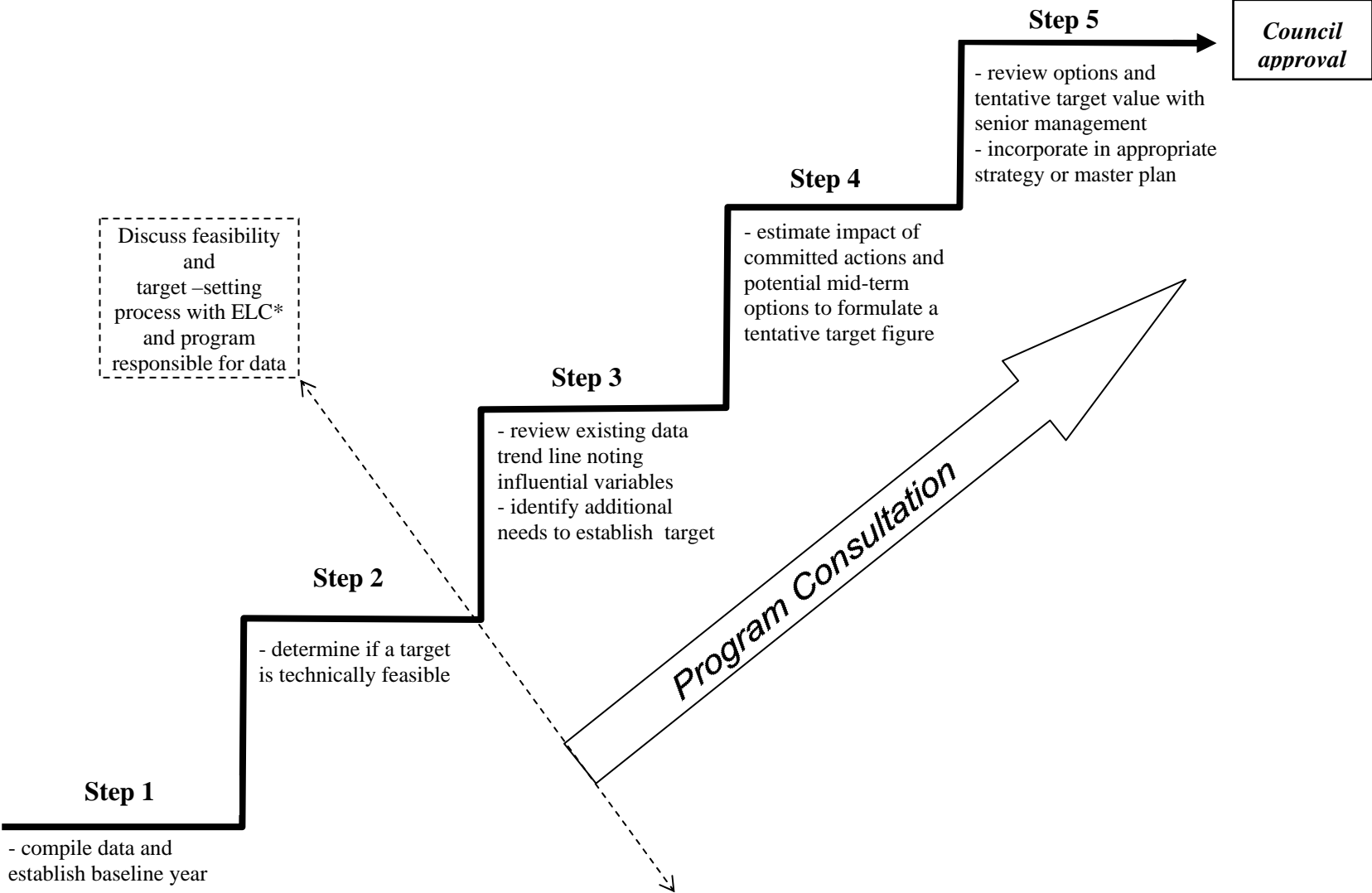
*ROW corporate refers to indicators for the Region of Waterloo (ROW) as an organization.

Priority Area	Objectives	Primary Indicators (unit): Absolute Improvements	Secondary Indicators: Efficiency improvements
Air/Energy Effectively use and manage energy resources and reduce greenhouse gases and other air emissions from ROW activities	Sustainably manage ROW corporate * energy use	<ul style="list-style-type: none"> Total annual consumption of electricity (kWh) and natural gas (m3), and; Associated air emissions (Tonnes) 	(e.g. energy use by facility type, energy use per/m2 of building area)
	Reduce environmental impact from ROW corporate fleet vehicles	<ul style="list-style-type: none"> Total fuel consumed (Litres), and; Associated air emissions (Tonnes) 	Litres of fuel and emissions/100km
	Reduce ROW corporate greenhouse gases (GHG)	GHG Emissions (Tonnes)	<i>To be determined</i>
	Increase ROW corporate production/use of alternative and renewable energy sources	Volume of methane gas captured (m3) and power produced each year (kWh and Btu)	--
		% or total power of alternative/renewable energy used	<i>To be determined</i>
	Reduce community emissions with increase in use of sustainable transportation options	See Transit Ridership and Modal Shift progress indicators under Priority Area "Sustainable Culture"	
Waste and Material Resources Reduce the amount of waste requiring landfill and the demand and impact on natural resources	Reduce community waste going to landfill	Total weight of waste landfilled/diverted per year (Tonnes)	- residential diversion rate (%) - waste diverted (Tonnes) and landfilled per capita,
	Reduce ROW corporate waste	Corporate waste diversion rate (%) and weight (Tonnes)	<i>To be determined</i>
	Increase ROW corporate sustainable building and construction practices	Waste diverted (%) from construction projects (Tonnes)	<i>To be determined</i>
		Tonnes of asphalt re-used/recycled in Regional road construction	lane km of recycled asphalt used in Regional road construction
		new aggregate saved (m ³ gravel/soil)	--
	Use ROW Green Purchasing practices to reduce environmental impact of operations	<i>To be determined</i>	

Region of Waterloo Environmental Sustainability Strategy

Priority Area	Objectives	Primary Indicators (unit): Absolute Improvements	Secondary Indicators: Efficiency improvements
Water Protect the quality and quantity of our water resources	Sustainably manage community water consumption	Total community consumption (m3)	per capita consumption (m3)
		maximum daily demand (m3)	ML treated/100,000 population
	Protect quality of regional water resources (Community)	% compliance rate (i.e. testing to Provincial Standards)	--
		Reduction of salt applications in region (Tonnes)	Tonnes per 2-lane km
		Regional Water Quality Program achievements (various units)	--
Sustainably manage ROW corporate water consumption	Total corporate water consumption (m3)	Per building occupant	
Rural/Urban Land Manage and shape land use to ensure a liveable, healthy and sustainable Waterloo Region	Protect natural areas	Number of hectares protected	--
	Manage regional growth via Regional Official Plan	Total population density and residents/jobs per hectare in urban core areas	
	Modify built environment to improve health	# of community gardens and people provided with plots	--
	Improve tree canopy on Regional lands	# of trees planted by Region	<i>(possibly as % of land area)</i>
Sustainability Culture Foster stewardship of the natural environment and encourage behaviours to reduce environmental impact	Increase use of sustainable transportation options in regional community	Transit Ridership and; Modal share (% trips by car, transit, bike/walk)	Transit trips per capita
	Promote idling reduction and education campaigns (community/corporate)	# of residents participating in anti-idling pledges <i>(other indicators to be developed)</i>	--
	Build a corporate culture of continuous environmental improvement	<i>To be developed</i>	

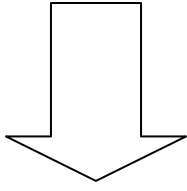
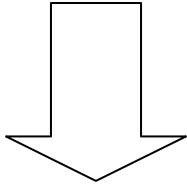
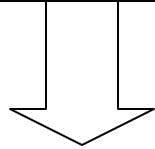
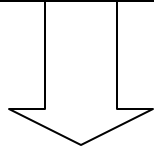
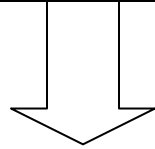
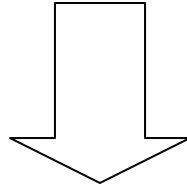
APPENDIX B - Target Setting Process For Environmental Progress Indicators



* ELC = Environmental Leadership Committee

APPENDIX C

ENVIRONMENTAL SUSTAINABILITY DECISION SUPPORT MATRIX

TYPE OF DECISION	Planning (Master/Departmental Plans & Environmental Assessments)	Purchasing (vehicles, equipment, consumable products & services)	Infrastructure Life Cycle (Design, Construction, Operation, Maintenance, Disposal/Decommissioning)			Field and Office Practices
			Buildings	Roads & Bridges	Mechanical Processes/Operations	
How to Apply Sustainability Lens						
	Strategic Alignment Scope of Work Modifications	Environmental Purchasing Guide (EPG)	Leadership in Energy and Environmental Design (LEED®) Rating Systems	Environmental Best Practices Supported by Policy	Simplified Environmental Management Approach	Direct Staff Education and Training
Description of Support/Tools	Plans should broadly identify opportunities to support the environmental goal statements within the Sustainability Strategy and strive to improve any applicable Environmental Progress Indicators Scope of work to incorporate applicable environmental Priority Outcome Areas as identified in the Sustainability Framework	<i>Environmentally Friendly Products</i> which : <ul style="list-style-type: none"> • use fewer natural resources • use less energy • produce fewer hazardous or toxic materials • reduce waste 	LEED® Rating Categories are: <ul style="list-style-type: none"> • Sustainable Sites • Water Efficiency • Energy & Atmosphere • Materials & Resources • Indoor Air Quality 	Current Regional best practices used in the construction of roads and bridges will be documented as part of the development of the Environmental Purchasing Guide	Simplified EMS process to include the following steps: <ul style="list-style-type: none"> • Confirm the need • Identify environmental aspects & assess impacts • Identify/assess alternative options for env. improvements using comparative measures • Manage significant impacts (reduction, mitigation, offsets) 	Program to include assessing/implementing: <ul style="list-style-type: none"> • Route optimization • Anti-idling and driver education • Electronic vs. paper-based record keeping • Use of 100% recycled paper in Corp. publishing for distribution of printed materials • Zero-waste meetings • Staff business travel
Additional tools/supports	Environmental Sustainability Office provides support in preparation of plans. Engineering based software analysis tools used in EA's to assist in evaluating the comparative impact of alternatives and monitoring post-construction impact	Other tools described within the Guide include: <ul style="list-style-type: none"> • Third Party Certification such as Energy Star, Environmental Choice Products, Green Seal, Forest Stewardship Council and EnerGuide • Life Cycle Analysis and Life-Cycle Costing 	The EPG will be used as applicable in assessing construction materials, office furnishings and products for use in buildings.	Green Guide for Roads Task Force developing environmental performance criteria for all aspects of the roadway over its life cycle. Once developed it will be considered for adoption by the Region.	EPG (Life Cycle Analysis and Life-Cycle Costing)	Environmental Sustainability Office provides support in consultation with HR Employee Intranet used to link to resources such as on-line calculators to show reduction in environmental impacts from office practices
Status	To be discussed and developed further with each department 2009/2010	EPG to be developed based on City of Richmond's guide Enhanced Green Purchasing Policy being prepared by Finance	In place for new buildings – need to expand to existing buildings and operations facilities	Research conducted, EPG to be developed	Research conducted, simplified approach to be developed	Plan to be developed
Timeline for application	2010 to 2013 - As Master Plans and Departmental Plans are updated	2009 – preparation and policy development 2010 – training and implementation	2010/2011	2011	2011/2012	2009/2010 – plan development 2010/2011 - training & implementation

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