



**REACHING MILESTONE 3:**

How to Create a  
Local Action Plan  
to Manage Energy  
and Emissions



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Reaching Milestone 3: How to Create a Local Action Plan to Manage Energy and Emissions

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## About this document

This document will guide you through the development of your local climate change action plan, which we refer to as a local action plan. It includes examples of strategies that PCP-member municipalities have used successfully, and highlights model local action plans.

The text describes all aspects of your plan, such as:

- the rationale for developing a plan, including a description of constraints and challenges
- an inventory of all community and municipal infrastructure, the amount of energy used and the greenhouse gas (GHG) emissions they produce
- the plan's long- and short-term goals
- assigning responsibilities and time frames to all actions
- metrics for defining progress and measuring success

For PCP members, these aspects are necessary components to include in the local action plan in order to receive recognition for Milestone 3.

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# INTRODUCTION



## Why this commitment matters



The local action plan for reducing greenhouse gas (GHG) emissions is the lynchpin of the milestone process designed by **Partners for Climate Protection (PCP)**. It helps municipal governments

detail long- and short-term goals for GHG reduction, assign responsibility for completing actions and involve key stakeholders in mitigating climate change.

An effective local action plan can benefit the economy, the environment and society at large by integrating opportunities for alternative energies and green job creation, and by creating a regulatory environment that fosters sustainability, efficient use of energy and other resources, cross-departmental information sharing and community outreach.

At its core, a local action plan commits a municipality to reducing emissions and developing an implementation plan for achieving those commitments. Monitoring progress using accessible and verifiable indicators is an integral part of creating the plan. The plan defines the scope of action and provides a benchmark against which to measure progress. Many plans also tie in potential impacts and vulnerabilities that emerge from a changing climate. This allows you to take both mitigation and adaptation actions.

These pieces can come together in many forms. While some municipalities opt to produce a dedicated climate change plan, others will nest mitigation and adaptation actions within other plans. This ensures close integration of climate change actions with existing departmental responsibilities and higher-level strategic planning. How your municipality develops its local action plan will depend mostly on local priorities and the local context. They will guide you in deciding how to address climate change.

The PCP program recommends that municipalities aim for a GHG reduction target of 20% below the baseline year<sup>1</sup> for corporate emissions and 6%

<sup>1</sup> ICLEI recommends that the focus for a GHG management program be on practical results. To this end, it is very important that your municipality document the base year with enough detail to provide a good foundation for local action planning and later monitoring of progress. Aim for a base-year analysis that is likely to be representative of the general level of emissions before and after the base year.

## A LOCAL ACTION PLAN HAS THREE MAJOR ELEMENTS:

- (1) Specific tasks: what will be done and by whom?
- (2) Time horizon: when will it be done?
- (3) Resource allocation: what specific funds are available for specific activities?

below the baseline year for community emissions. Ideally, municipalities achieve these targets within 10 years of joining the program.

Since PCP began in 1994, membership is growing with over 200 members representing over 75% of Canada's population. To date, PCP members have voluntarily reported 1.7 million tonnes of GHG emissions reductions resulting from more than 700 green projects or measures that represent investment totalling \$1 billion.

## Resources to review before you get started



***The PCP Brochure*** (pdf) and ***PCP Five-Milestone Framework*** (pdf) provide general information on the PCP program. To help you complete Milestone 3, PCP also offers these tools and resources:

- ***The Business Case for Cutting Greenhouse Gas Emissions from Municipal Operations*** (pdf) presents evidence on how climate protection activities have an equally beneficial impact on the economy, the environment and on society.

- ***Six Steps to a Sustainable Community: A Guide to Local Action Planning*** (pdf) provides guidance on community involvement in creating local action plans. It offers advice to help you identify key stakeholders and funding, form working groups and initiate community-based social networking.
- ***Greenhouse Gas Reduction Initiative of the Month*** details case studies highlighting measurable municipal actions to reduce GHGs and increase cost savings.
- ***National Measures Reports*** provide detailed examples of what Canadian municipalities are doing to reduce GHG emissions. They provide details on costs, energy savings and GHG reductions for both the corporate and community sectors, and provide information on implementation, funding and replicability.
- The FCM enviro-fleet pilot program targeted municipalities seeking to reduce GHG emissions from heavy-duty vehicles. ***The Enviro-Fleets Guide to Helpful Resources*** (pdf) provides an overview of tools and resources available across Canada, while ***Enviro-Fleets Guide to Best Practices*** (pdf) helps municipal fleet managers find cost-effective ways to reduce emissions from heavy-duty vehicles.

- **Members Milestone Database:** This web-based resource allows for peer-to-peer knowledge sharing. It contains the action plans and GHG inventories for all PCP-member municipalities. Use it to reach out to neighbouring municipalities or those with similar economic, political, or environmental conditions to share best practices and lessons learned.
- **Green Municipal Bylaw collection:** Developed by the Green Municipal Fund, this online list contains examples of specific bylaws, policies and procedures within various sectors. The examples serve as templates for regulatory actions that foster sustainability in the areas of brownfields, energy, transportation, waste, water and multi-sector planning.
- Podcasts of FCM webinars are available on many topics, including climate change. **Integrated Approaches to Climate Protection** outlines the objectives of Milestone 3 and provides case studies, while **Small and Rural Communities Working Through Milestones 1-3** highlights the power of networks to offer best practices and partnerships that enhance compatible goals. It also describes participatory approaches to planning in small and rural communities.

## INTEGRATING SUSTAINABLE COMMUNITY PLANS, ENERGY PLANS AND LOCAL ACTION PLANS

Because these kinds of plans can be very similar in purpose and content, it often makes sense to combine them into one document. While some municipalities create local action plans, others create community energy plans, sustainable community plans or other similar plans. All can serve the same purpose and meet the PCP Milestone 3 requirements. For example, the Resort Municipality of Whistler developed a combined energy, emissions and air quality plan.



# TEN TIPS TO AVOIDING A DARK DESK DRAWER!

Here are some useful strategies to ensure that the plan you create is put into action and not into a desk drawer.

- 1 Start with what you know.** PCP members often start by developing a local action plan for their corporate operations first. Then, they move on to creating a plan for the community.
- 2 Maximize and share resources.** If your community lacks the staff or financial resources to undertake a plan on your own, consider partnering with nearby communities to share costs.
- 3 Integrate your plans.** A local action plan does not need to be a stand-alone document. It can be integrated with other plans such as a sustainable community plan, an integrated community sustainability plan or a community energy plan.
- 4 Frame the plan around local issues.** While the goal is to reduce emissions, you can use other local issues to position the plan, such as economic development, health and air quality.
- 5 Speak a financial language.** Although the plan seeks to have a direct environmental benefit, emissions reductions also offer opportunities for financial savings. Ensure the plan looks at energy reductions, cost savings and investment opportunities. The latter involves a focus on the green economy and green jobs.
- 6 Keep council informed and engaged.** Build some champions for the plan on municipal council. You will need them when the time comes to find funding to implement the actions.
- 7 Achieve two in one.** If properly designed, a PCP local action plan can meet new regulatory requirements for emissions reductions and energy planning that your provincial government is developing.
- 8 Give the plan a home.** Once the plan is complete, it needs to be housed in a place that has the capacity to promote and monitor implementation. The city administrator's office is often that place.
- 9 Manage expectations.** It is important to engage stakeholders and build interest in the plan. At the same time, you need to create a level of interest that can be sustained once the plan is complete. Ensure that the municipality or community partners can reasonably implement targets and actions.
- 10 Report your successes.** Once you have implemented actions and achieved reductions, share these successes with council, the public and other municipalities. You can also report reduction actions to the PCP secretariat for inclusion in the Annual Measures Report.

# PLANNING YOUR PLAN



## General considerations



Developing the greenhouse gas (GHG) inventory (Milestone 1) and setting targets (Milestone 2) naturally feed into the development of the local action plan (Milestone 3).

The first two will have

highlighted opportunities for reductions, directed the scope of efforts and generated government and community buy-in. In some cases, it may make sense to set targets once the inventory and action plans have been developed so that practical goals for GHG reductions can be based on identified opportunities.

A well-structured plan differentiates between the emissions inventory for municipal operations and for the community at large. **Corporate sources** include municipal government facilities and operations, such as buildings, street lighting, water and wastewater treatment, municipal fleets and corporate solid waste. **Community sources** include industrial, commercial and institutional operations; transportation; residential energy use; and waste. The PCP process encourages municipal governments to begin developing a corporate operations plan before developing a plan that deals with community sources of emissions.

## Community engagement



Consider public participation to be one of your main resources in drafting and implementing a local action plan. While community engagement requires time and sustained energy, it is well worth the effort.

### Six steps to developing a local action plan

- (1) Identify the key stakeholders and sources of funding
- (2) Form steering committees and working groups
- (3) Develop the plan
- (4) Hold public consultations
- (5) Implement the plan
- (6) Evaluate and monitor the plan

Source: *Six Steps to Sustainable Community: A Guide to Local Action Planning*, (pdf) page 5.



Before drafting a plan, create a project inventory by surveying climate change initiatives that already exist at the municipal, provincial or community levels. This process gives you the chance to build on existing efforts and incorporate best practices and lessons learned through implementation.

### **WHEN SHOULD YOU ENGAGE THE COMMUNITY?**

Engage the community early on in the planning process by forming a steering committee made up of both municipal staff and community members. Recruit members for your steering committee from as wide a range of interest groups as possible.

Once you have drafted the local action plan, set up public consultations to generate broader community input and raise awareness of climate change. Social media, open houses, community circles, and online surveys are some useful tools for public engagement. You will need to choose what works best for your community.

If you are beginning with the plan for corporate operations only, engagement is still important. In this case, consultation will be with other departments, members of council and corporate entities outside of city hall (such as the transit commission, a municipally owned utility and your economic development corporation).

The wider the range of interests and perspectives, the healthier the plan. Depending on the municipal context, some groups you will want to engage are transit authorities, utility companies, environmental non-profit organizations, media outlets, and representatives from the business and educational sectors.

To receive recognition from PCP for completing Milestone 3, you must follow these steps in preparing your local action plan:

- (1) Describe planned activities to achieve target reductions set out in Milestone 2. This may take the form of a written report, a presentation or a website.
- (2) Describe how the public or internal stakeholders participated in the plan.
- (3) Describe costs and funding sources.
- (4) Identify the municipal department or organization responsible for the actions outlined in the plan.

# ELEMENTS OF THE PLAN



## Format



The way you display and structure information in the plan will vary depending on the purpose of the document, the intended audience and whether it is a stand-alone piece or a part of a larger plan. We recommend that you include the following:

**Title:** The title should refer to greenhouse gas (GHG) reductions. We suggest including a subtitle that contains a reference to the PCP initiative.

**Create a Citation Line:** Include the title of the document, the name of the committee, the full corporate name of the municipal government and the year. This citation line often appears on the inside front cover. Your document will add to a growing number of sample plans across the country. Other municipal governments that are developing plans will want to read your plan and may want to reference it in their own reports.

**Work Team Members:** If a committee or inter-departmental team helped to develop the plan, provide their names and affiliations. The principal author should be named so that others who read the plan can contact the correct person.

**Acknowledgements:** It is always good to acknowledge those who contributed to a document. Readers will assume that work team members contributed to the document. Use the Acknowledgements section to recognize those who helped create the plan but were not part of the work team, and to thank those who made special efforts.

**References:** Your plan may use data, publications and other organizations as sources for various parts of the plan, including context or as a rationale for specific actions. To substantiate the plan be sure to cite your sources. Such references usually go at the end of the plan, before any Appendices.

**Executive Summary:** Include a summary of the plan's purpose and intended actions relative to the baseline and intended targets. This will inform senior decision makers who may not have time to read the full plan.

**Table of Contents:** List the main headings in a table of contents.

### Suggested Content:

- Describe your municipality's rationale for addressing climate change issues. We suggest including a section on the business case for climate change action, with a focus on green economic growth and competitiveness. You can draw on PCP's overall goals and program objectives (such as reducing GHG emissions and the five milestones) as they pertain to your situation.
- Illustrate and describe the municipality's emissions by sector and by source for municipal operations and the community. Explain any significant changes that have occurred in the inventory during recent years, if the details are available.
- State the emissions forecast, the emission reduction targets that the municipal government has set or may adopt, and outline a brief rationale for the targets, if any.
- Summarize the main quantitative and qualitative actions you expect to use to achieve emission reduction targets. This will include the education and outreach program(s) you plan to deliver to the community.
- Link the actions to a time frame that assigns responsibilities and financial resources.

## Local context



Describe where the municipality is located and its geographic features. Landform is an important aspect of plans since it can illustrate any constraints or challenges based on community structure and growth potential.

Map(s) of the community that show provincial and local political boundaries are an ideal way to illustrate these characteristics. It is also important to note the electricity and fuel supply characteristics for the area, as they will have an impact on future strategies to reduce emissions.

Remember to describe the community at large, including its character and culture. Providing this type of broad landscape perspective can highlight unique ways to adapt to and mitigate climate change. As an example, a *past webinar* highlighted how small municipalities in rural Nova Scotia banded together to form integrated local action plans with a greater cumulative impact.

This section should also include details on any provincial or federal regulations, programs or actions that would influence the plan. Factor in any provincial emissions targets, incentives or regulatory requirements directed at municipalities. In some cases, the plan may be able to satisfy provincial or federal programs and regulatory requirements.

Describe the corporate and community profile and other useful demographics of the municipality so that the scope of the plan is apparent. Provide as much of the following demographic data as possible:

- Population and growth rate. Growth rates will help you develop emissions forecasts and allow you to prioritize long-term planning processes by taking into account emission reductions.
- Area within the municipal boundaries. Calculate gross densities.
- Number of municipal employees.



## PCP AT A GLANCE

- The Partners for Climate Protection (PCP) program is a results-oriented network of Canadian municipal governments that has committed to reducing GHGs and acting on climate change.
- By participating in the program, municipalities commit to taking action on climate change and work to achieve a **series of five milestones** to reduce their GHG emissions.



### Milestone 1

Create a Baseline Emissions Inventory and Forecast



### Milestone 2

Set Emissions Reduction Targets



### Milestone 3

Develop a Local Action Plan



### Milestone 4

Implement the Local Action Plan



### Milestone 5

Monitor Progress and Report Results

- PCP is managed through a partnership between FCM and ICLEI-Local Governments for Sustainability. The program receives financial support from FCM's Green Municipal Fund™.
- Municipalities control over 44% of Canada's GHG emissions and are leading the way in reducing them.

## Description of PCP



In this section, include the history of the community's involvement with PCP. State when your municipal council passed its resolution to participate in PCP (a council resolution is a requirement of partici-

pation) and council's and staff's involvement in the program at local, regional, provincial and national levels. Identify any other municipal committees or volunteer groups that have been involved with GHG emissions and climate change issues. For a generalized description of PCP, refer to the PCP brochure and the five-milestone framework.

Providing some of these statistics will emphasize to a municipal council and the community that the municipal government is not acting alone.

## Greenhouse gases and climate change



Briefly describe the greenhouse effect on your community. Avoid discussing the causes of climate change since the impetus to reduce emissions should be well established (see *The Business Case for*

*Cutting Greenhouse Gas Emissions from Municipal Operations* (pdf)). Mention the co-benefits of reducing GHG emissions, including reduced air pollutants (nitrous oxide, sulphur dioxide and ozone), better water quality and improved public health. This would also be the right place to refer to synergies between mitigation and adaptation strategies. Resources include the *United Nations International Strategy for Disaster Reduction* and the multi-stakeholder platform on *Resilient Communities and Cities*.

The following websites provide reputable information on climate change science:

- *The Intergovernmental Panel on Climate Change*
- *United Nations Environment Program*
- *The David Suzuki Foundation*
- *Government of Canada*
- *Natural Resources Canada Climate Impacts and Adaptation Division*

Your local action plan should reflect the current global rationale for taking action on climate change, beyond the facts related to climate impacts. Consider the economic benefits of action on climate change. How can the plan save money on energy consumption, reduce dependency on external energy supplies or create local jobs in renewable energy or energy efficiency sectors? More information on the economic benefits of climate action is available through the *United Nations Environment Program* and the Organization for Economic Co-operation and Development's green economy initiatives. Your local action plan provides an opportunity to leverage these economic and political forces.



# SUPPORTING MATERIALS



## Summary of emissions



The plan must include a summary of municipal emissions. If you already completed a separate report detailing the emissions inventory for Milestone 1, you can include the full report or an executive summary as an appendix to your local action plan. In

table form, summarize the municipality's corporate and community emissions in the base year and other inventory year(s), if available. Using the same table, you must also summarize the emissions from municipal operations and the community by their respective sectors (such as commercial, industrial, institutional etc. for community emissions and solid waste, fleets, facilities, street lighting etc. for municipal emissions).

When comparing inventories developed in different years, it may be difficult to reconcile the methodologies used and assumptions made for each inventory. To make comparisons easier, include an appendix that details the assumptions, measurement protocols used, methods for calculating data and a note on where the data was collected and stored. It is also good to include energy consumption data if emission coefficients for electricity have changed over time.

## Forecast and emissions comparisons



We recommend that you use a table or chart to show the corporate (municipal operations) and community emissions forecast. A suggested forecast date is the 10 years following the year in which the

municipal government committed to PCP, or from the first baseline inventory year. Include a brief discussion of how the forecast was derived. Include the baseline year and other inventory years, if any, and calculate the percentage change in each corporate and community sector. Explain why emissions decreased or increased in each sector between the two comparison years. Refer to any actions the municipality took to reduce emissions.

To calculate GHG emissions in the inventory, use the amount of energy (natural gas and electricity) and the types of fuel (automobile gasoline, diesel fuel, natural gas, propane, etc.) consumed within the municipality. List the emissions coefficients in the body of the text or as an appendix to the plan. For more details on how to calculate GHG emissions using energy coefficients, see the *inventory quantification support spreadsheet*. Historical electricity coefficients by province are listed under the tab “electricity factors.”

### EXAMPLE OF A FORECAST AND EMISSIONS COMPARISON

Total Corporate Emissions (municipal operations)			
Base Year	GHG Emissions (tonnes CO <sub>2</sub> e) <sup>2</sup>	Forecast Year	GHG Emissions (tonnes CO <sub>2</sub> e)
2007		2017	
Total Community Emissions			
Base Year	GHG Emissions (tonnes CO <sub>2</sub> e)	Forecast Year	GHG Emissions (tonnes CO <sub>2</sub> e)
2007		2017	

## Reduction targets

Provide a statement of the GHG emission reduction targets your municipal council has adopted. A council report endorsing the targets can be included as an appendix. If targets have not been set, discuss proposed targets, or options for targets, based on council’s support for proposed initiatives.

<sup>2</sup> Carbon dioxide equivalent (CO<sub>2</sub>e) is the standard unit that allows amounts of GHGs of different strengths to be added together based on each gas’s impact on climate change. CO<sub>2</sub>e is expressed in terms of the amount of carbon dioxide it would take to have the same impact on global climate change. For example, nitrous oxide (N<sub>2</sub>O) is 310 times more potent than carbon dioxide as a global warming gas. Therefore, one unit of N<sub>2</sub>O is equivalent to 310 units CO<sub>2</sub>e.

## EXAMPLE OF HOW TO PRESENT REDUCTION TARGETS

Setting reduction targets provides a means to measure progress and align with broader sustainability objectives. In this example, Saskatoon has created indicators and targets for specific sectors and interfaced them with their long-range goals.

							Indicator	Current (2003)	Target (2013)	Change
	X	X	X	X	X	X	Per capita community-wide GHG emissions (tCO <sub>2</sub> e/capita/year)	17.5	11.7	6% below 1990 levels
				X	X		GHG emissions from City operations (tCO <sub>2</sub> e/capita/year)	0.44	0.40	10% below 1990 levels
X	X		X	X	X		Per capita energy use (GJ/year)	233	These indicators will be used to track Saskatoon's progress on reducing energy and greenhouse gas emissions.  Targets have not been identified for these indicators at this time.	
X	X			X	X		# of private vehicle kilometres travelled (VKT) per year (km/year)	1,476,784,852 (total)		
			X	X	X		Corporate building energy consumption per m <sup>2</sup> of floor space (GJ/m <sup>2</sup> )	1,042		
	X	X	X	X	X		Solid waste disposed per capita (tonnes/capita/year)	0.50		
X	X	X		X	X		Total waste disposed (tonnes/year)	101,842		
X	X	X	X	X	X		% of commuters that are not a driver (%)	20		

Source: *Saskatoon Energy and Greenhouse Gas Management Plan*, (pdf) page, 35.



# PREPARING TO IMPLEMENT THE LOCAL ACTION PLAN



Milestone 4 focuses on implementing the local action plan. However, some of the background work on implementation should happen during Milestone 3 while you are developing the action plan. Without a sound implementation strategy, the plan is only a list of possible actions. Integrating a detailed implementation strategy within the plan will encourage follow-through by assigning responsibility for actions along with a timeline, costs estimates and financing options. This section suggests some important factors to consider when it comes to implementation.

## Align administrative objectives to the local action plan



Administrative objectives are proposed changes to the municipal structure that will help your municipality reach the overall program objectives of PCP. These internal objectives will be directed

to the city administrator and other senior staff for council's approval.

A successful plan requires that the engineering, finance and planning departments, as well as administration and environmental programs,

cooperate. Even when a staff member works exclusively on issues of climate change or energy efficiency, aligning related program objectives and setting up regular inter-departmental sessions to check in will increase buy-in across issue areas. If targets in the plan are time specific and actionable, members can hold each other accountable.

## Set short- and long-term goals



### Long-term goals (more than five years)

The long-term goals are statements of intent aimed at changing the way a municipal government operates and having a positive effect

on reducing GHG emissions. For example, these long-term goals below are actions that will have the long-term effect of reducing GHG emissions:

- updating the Official Community Plan to include considerations of energy efficiency
- including energy-efficiency standards in area plans
- developing a variety of bylaws to reduce emissions in diverse sectors
- developing a green procurement policy

### Short-term goals (less than five years)

Create a list of reduction actions in both the corporate and community sectors. Separate quantitative actions from qualitative actions. Mark the actions as follows:

- initiatives completed, including measurable emission reduction outcomes
- initiatives underway, including a forecast of projected emission reduction outcomes
- initiatives planned, for which support or funding does not yet exist
- initiatives to be proposed in the near future given the appropriate technology

The table below lists short-term quantitative and qualitative actions in various sectors of municipal operations and in the community.

### QUANTITATIVE AND QUALITATIVE ACTIONS TO MITIGATE CLIMATE CHANGE

Corporate Sector (Municipal Operations)	Quantitative Action (set targets where feasible)	Qualitative Action
Buildings	Undertake comprehensive municipal building retrofits to improve energy efficiency as per FCM's <i>Municipal Building Retrofit Guide</i> .	Encourage high-density, mixed-use building developments, energy-aware landscaping methods, building for passive solar gain, etc.
Fleet	Reduce vehicle kilometres travelled (VKT) by 10% per year.	Adopt an anti-idling policy.
Street lighting/Traffic Signals	Replace all red/green traffic signals with LEDs.	Adopt energy-efficient measures for street lighting requirements in new developments by means of a bylaw.
Wastewater and Water	Optimize wastewater treatment motors and pumps.	Increase water conservation awareness.
Solid Waste	Launch an expanded waste reduction program.	Hold an inter-departmental waste reduction challenge, and launch a new strategy to expand the waste reduction program.
Community Sector	Quantitative Action (set targets where feasible)	Qualitative Action
Residential	Install energy-efficient windows when replacing old windows.	Require installation of energy-saving and low-water-flow devices in new and renovated buildings.
Commercial	Undertake cost-effective building energy retrofits (such as space heating and cooling, office and computer equipment, energy management systems, lighting upgrades, and building shells).	Establish minimum energy performance ratings for all new commercial buildings (through participation in a Commercial Building Incentive Program). Investigate community energy plans.
Industrial	Increase plant efficiency.	Pre-service industrial areas for waste-heat recovery and district heating systems.
Transportation	Develop trip reduction measures (such as vanpool and rideshare programs, employer trip reduction programs, car-share cooperatives).	Develop a transportation demand management strategy (through commuter travel reductions, improvements to goods movement and reductions to school travel and other travel aside from commuting.)
Waste	Implement beneficial use of captured landfill gas.	Implement a public education program on waste reduction.

Whenever possible, try to quantify the GHG reductions associated with specific actions in your plan and identify the data sources and assumptions upon which you based your calculations. This will allow staff in the future to accurately calculate change over time, and synchronize updates on emissions with the original GHG inventory.

- > For guidance on actions to reduce GHG emissions within the land use, transportation, and building sectors, see the *BC Climate Action Toolkit*.
- > An initiative of British Columbia's Ministry of the Environment, the *Community Energy and Emissions Inventory* details indicators used in assessing energy and emissions data.
- > The *International Local Government Greenhouse Gas Emission Analysis Protocol* (IEAP) outlines the general principles and philosophy that a local government should adhere to when it creates an inventory of GHGs from its government operations and the community as a whole.
- > The International Organization for Standardization has recently published the *14064 standards*, which provide tools for assessing and supporting GHG reduction and emissions trading.

## Define the indicator



Before writing the local action plan, consider what indicators you will use to benchmark progress toward your ultimate goal. In order to be effective, these indicators must have a direct correlation with

the action you are taking to reduce GHG emissions and should be relatively simple to collect. For instance, as part of a campaign to reduce vehicle use among municipal staff, you could ask staff to track

the kilometres they walk, bike or use public transport to get to work, instead of driving. Often, you will need to perform a baseline survey to assess where the indicator sits now. This will then allow you to measure progress toward your goal.

Indicators may consider economic and social factors like cost savings, reductions in energy consumption or changes in modes of transportation. For an example of progress indicators from the Region of Waterloo, see Appendix 1.

## Assign responsibility and a time frame



Be sure to specify the department, group or individual that is responsible for implementing each action, and outline an approximate time frame for completion. These two steps are essential, as they provide a means

to track progress and ensure continuity through staff turnover.

# EXAMPLE OF ASSIGNING RESPONSIBILITY FOR AN ANTI-IDLING EDUCATION CAMPAIGN

Conduct an education campaign targeting city staff and develop a formal policy on anti-idling for city vehicles. The campaign will access information and free graphic materials from Natural Resources Canada's Idle-Free Zone, and will be incorporated into driver training programs. As part of this campaign, recognize and reward individuals and departments that have successfully minimized idling.

Vehicle idling consumes fuel and creates air emissions without providing any benefit to the operation of the vehicle. Targeting drivers through education is the first step to achieving behavioral change and long-term reductions in vehicle idling.

- Resources:
  - > Natural Resources Canada, *Idle-Free Zone*
- **RESPONSIBILITY FOR IMPLEMENTATION**
  - > **COMMUNICATIONS DEPT.**
  - > **FACILITIES DEPT.**
  - > **ENVIRONMENTAL SERVICES DEPT.**
- Linkages to Other Programs:
  - > Goal #1 - Energy Efficient Transportation Education Program
  - > Goal #5 -Transportation Emission Reduction Program

The Saskatoon Energy and Greenhouse Gas Management Plan includes sections on both strategizing for and monitoring progress. In this example, program objectives are linked to available resources, the department or community group responsible for implementation and long-term goals.

Source: *Annex B, Saskatoon Energy and Greenhouse Gas Management Plan, page 44.*

# Calculate costs and find funding sources



Researching the cost of your investment to emissions reductions, and calculating the financial saving and payback period, will allow you to create a long-term financial strategy for implementing your local action plan. While it may be difficult at first to fund the plan, doing so can pay off through cost savings in the long term (see *The Business Case for Cutting Greenhouse Gas Emissions from Municipal Operations*).

menting your local action plan. While it may be difficult at first to fund the plan, doing so can pay off through cost savings in the long term (see *The Business Case for Cutting Greenhouse Gas Emissions from Municipal Operations*).

Common questions to ask about costs:

- What measures can be incorporated into existing projects or expenditures?
- What measures will require new expenditures?
- What is the payback period?
- What savings or co-benefits will result from these measures (such as lower fuel costs for hybrid vehicles or reduced energy costs for heating and cooling)?

## City of Laval GHG Offset Program

The City of Laval implemented a measure to offset GHG emissions in the building of new development projects through the purchase of carbon credits.

The offset amount is set at the time that each connection permit is issued, based on the surface area that is developed.

For example, a developer who submits an application for a connection permit for a 5,000-square-foot (464.5-square-metre) piece of land, will have to pay monetary compensation of approximately \$150 to offset GHGs.

The proceeds will be used by the City of Laval to buy carbon credits and to finance GHG reduction projects.

- Is funding available in the current municipal budget?
- What alternative funding sources exist?
- What are the project's life-cycle costs?

Examples of options that municipalities can use to finance action:

- Property tax, land value taxation
- Unit pricing of water, wastewater and solid waste services
- Development cost charges as an incentive for adopting best practices
- Fuel taxes, parking fees and vehicle levies
- **Pollution permits**
- Business licence fees
- Demolition/deconstruction fees
- **Incentives for "green" buildings**
- Greenfield fees and brownfield incentives

FCM's *Green Municipal Fund* has funding to help municipalities develop Milestones 1 to 3, and to implement studies and capital projects at Milestone 4. Resources may also be available at the provincial level, and from private foundations.

## Toronto Green Standard and the Better Buildings Partnership – New Construction Program

The City of Toronto used the Toronto Green Standard (TGS) and the Better Buildings Partnership – New Construction program (BBP-NC) as an approach to encourage sustainable building design. They include both mandatory and optional performance measures for sustainable building along with incentives for energy-efficient building design.

Toronto condominiums constructed under the BBP-NC program have achieved 45% greater efficiency than the levels outlined in the MNECB, while office buildings have achieved up to 63% greater efficiency. The return on investment for buildings that meet TGS specifications is 20–30%.

The combined implementation of the TGS and BBP-NC is expected to save the city approximately \$1.2 billion in infrastructure expansion and health care costs over the next 25 years.

The table below describes the financial aspects of three retrofits. While the costs of installation are substantial, financial savings from reduced energy use generate a fairly short payback period compared to working with the traditional lending sector.

Through up-front investment, municipalities were able to save money and reduce GHG emissions with a payback period of three years or less.

Building Details: location, size, etc.	Cost of Installation	Cost saving after installation	Payback period	GHG Reduction
Curling Rink in Oliver, BC (1,059 m <sup>2</sup> ) Retrofit was complete in 1994	\$90,000	About \$18,634 in annual total saving (energy and maintenance): \$10,359 vs. \$28,993 conventional	Less than three years in energy savings alone (50% energy use reduction) and less than two years including operating costs	27.1 tonnes annually
Office building in Winnipeg, MB (38,000 sq. ft.)	\$205,000 for ground-source pump compared to \$136,000 for electric	\$17,000 annually in savings: \$9,000 to heat and cool with heat pump; \$26,000 with electric	Just over two years	unknown
Ice rink (built 1952) and community hall (total 3,447 m <sup>2</sup> ) in Miami, MB This retrofit was done in 1998-1999	\$212,500 for ground – source pump; \$179,500 for conventional	\$13,500 annually in energy costs alone: \$22,000 annually for conventional; \$8,500 for ground-source pump With less maintenance, total system is less than half of conventional	In energy savings alone, payback is less than three years. Including total maintenance costs (\$54,025 vs. \$23,130), payback drops to less than two years	47.6 tonnes of CO <sub>2</sub> annually reduced in energy reduction

Source: *City of Fernie Greenhouse Gas Reduction Plan, page 11.*

## FUNDING MILESTONE 3 THROUGH THE GREEN MUNICIPAL FUND

FCM’s Green Municipal Fund provides a 50% grant toward the completion of Milestones 1–3 when they are completed as a package.

Grants and below-market loans are available for feasibility studies, pilot projects and capital projects to support implementation of Milestone 4.

# MOVING FORWARD



By closely monitoring the indicators and following the general performance measures set out below, your municipal government will be able to evaluate and fine-tune its progress over time. General performance measures include the following:

- conducting a periodic emissions inventory as a check and balance
- reviewing administrative objectives and allocations of resources to implement actions including funding and staff
- updating the plan with policies adopted by the municipality (such as green power purchases, using Leadership in Energy and Environmental Design (LEED) in new building design)

The implementation strategy should identify barriers to implementation and suggest the best ways to overcome them, highlight programs and policy levers that may assist the municipal government in implementing the action plan, and identify next steps.

PCP staff is available throughout the milestone process to provide advice, contact with other municipalities and technical support as you work through the program. Feel free to contact them before starting on the local action plan and later for input on the draft plan. Once complete, the plan can be submitted to the PCP secretariat for review and recognition of the milestone.

## Leading examples of local action plans



Below is a list of action plans completed by PCP members. The PCP secretariat sees these plans as leading examples of how to create a solid action plan, following the guidance outlined in this document.

- *City of Saskatoon, SK, 2007*
- *City of Fernie, BC, 2009*
- *Town of Cochrane, AB, 2007*
- *City of Fredericton, NB, 2008*
- *City of Yellowknife, NT, 2006*
- *District of Invermere, BC, 2010*
- *City of Guelph, ON, 2007*
- *City of St. John's, NL, 2006*
- *Town of Lantzville, BC, 2008*

# APPENDIX 1:

## Progress indicators from the Region of Waterloo (ROW) Local Action Plan

### List of Primary and Secondary Progress Indicators, Region of Waterloo

Priority Area	Objectives	Primary Indicators (unit): Absolute Improvements	Secondary Indicators: Efficiency Improvements
<b>Air/Energy</b> 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"> <li>Total annual consumption of electricity (kWh) and natural gas (m<sup>3</sup>), and;</li> <li>Associated air emissions (Tonnes)</li> </ul>	(e.g. energy use by facility type, energy use per m <sup>2</sup> of building area)
	Reduce environmental impact from Regional fleet vehicles	<ul style="list-style-type: none"> <li>Total fuel consumed (Litres), and;</li> <li>Associated air emissions (Tonnes)</li> </ul>	Litres of fuel and emissions/100km
	Reduce ROW corporate greenhouse gases	GHG Emissions (Tonnes)	To be determined
	Increase ROW corporate production / use of alternative and renewable energy sources	Volume of methane gas captured (m <sup>3</sup> ) and power produced each year (kWh and Btu)	
		% or total power of alternative/renewable energy used	To be determined
Reduce community emissions with increase in use of sustainable transportation options	See transit ridership and modal shift progress indicators under priority area “sustainable culture”		
<b>Waste and Material Resources</b> Reduce the amount of waste requiring landfill and the demand and impact on natural resources	Reduce (residential) waste going to landfill	Total weight of waste landfilled/diverted per year (Tonnes)	<ul style="list-style-type: none"> <li>Residential diversion rate (%)</li> <li>Waste diverted (Tonnes) and landfilled per capita,</li> </ul>
	Reduce ROW corporate waste	Corporate waste diversion rate (%) and weight (Tonnes)	To be determined
	Increase ROW corporate sustainable building and construction practices	Waste diverted (%) from construction projects (Tonnes)	To be determined
		Tonnes of asphalt re-used/ recycled in Regional road construction	
		new aggregate saved (m <sup>3</sup> gravel/soil)	lane km of recycled asphalt used in Regional road construction
Use ROW green purchasing practices to reduce environmental impact of operations	To be determined		



Priority Area	Objectives	Primary Indicators (unit): Absolute Improvements	Secondary Indicators: Efficiency Improvements
<b>Water</b> Protect the quality and quantity of our water resources	Sustainably manage community water consumption	Total community consumption (m <sup>3</sup> )	per capita consumption (m <sup>3</sup> )
		maximum daily demand (m <sup>3</sup> )	ML treated/100,000 population
	Protect quality of regional water resources (Community)	% compliance rate +/- or # of tests (i.e. testing to Provincial Standards)	
		Reduction of regional salt applications (Tonnes )	Tonnes per 2-lane km
	Regional Water Quality Program achievements (various units)		
Sustainably manage ROW corporate water consumption	Total corporate water consumption (m <sup>3</sup> )	Per building occupant	
<b>Rural/Urban Land</b> Manage and shape land use to ensure a livable, 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	
		% of Walkable neighborhoods in Region	
Improve tree canopy on regional lands	# of trees planted by Region	(possibly as % of land area)	
<b>Sustainability Culture</b> Foster stewardship of the natural environment and encourage behaviors 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
	“Let’s Curb Pesticides” multi-year program	# Residents participating in pesticide-free lawn care	
	Promote anti-idling education campaigns	# of residents participating in anti-idling pledges # of cars idling at schools before and after campaign	
	Build a corporate culture of continuous environmental improvement	To be developed	

Source: Report CR-FM-09-001, Corporate Environmental Sustainability Strategy, Corporate Resources-Facilities Management and Fleet Services, page 7, January 6, 2009.





## JOIN PCP TODAY!

# MEMBERSHIP IS ONLY FIVE STEPS AWAY:

- 1** After reviewing this document, contact the secretariat for more details, and to ask questions.
- 2** Download a sample council resolution at [www.fcm.ca/pcp](http://www.fcm.ca/pcp) or contact the PCP secretariat.
- 3** Appoint one staff member and one elected official to be your main contacts with PCP.
- 4** Fax, mail or e-mail your adopted council resolution, along with the staff member's and elected official's contact information, to the PCP secretariat. (See contact information below.)
- 5** The PCP secretariat will send you a PCP information package, including a list of resources and the PCP Milestone Framework. Apply to GMF for a grant to cover up to 50% of the costs of completing milestones 1, 2 and 3.

## CONTACT PCP

Find out more about PCP by visiting [www.fcm.ca/pcp](http://www.fcm.ca/pcp) or by contacting the PCP secretariat at 613 907 6346. Email [pcp@fcm.ca](mailto:pcp@fcm.ca)



April 2012

Reaching Milestone #3: *How to Create a Local Action Plan to Manage Energy and Emissions*

PCP is a partnership between the Federation of Canadian Municipalities and ICLEI - Local Governments for Sustainability. It is the Canadian component of ICLEI's international Cities for Climate Protection program.

