

# Partners for Climate Protection

## Five-Milestone Framework for Reducing Greenhouse Gas Emissions



*Five-Milestone Framework for Reducing Greenhouse Gas Emissions*

Cette publication est aussi disponible en français sous le titre  
*Cadre en cinq étapes pour réduire les émissions de gaz à effet de serre.*

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## Table of Contents

<b>Introduction .....</b>	<b>3</b>
Using this guide .....	3
<b>A framework for action .....</b>	<b>4</b>
<b>Milestone One — Create a GHG emissions inventory and forecast .....</b>	<b>5</b>
What is a GHG emissions inventory and forecast? .....	5
What kinds of data are included in the inventory? .....	5
What types of GHG emissions are measured? .....	5
Why develop an inventory? .....	6
<b>Milestone Two — Set an emissions reduction target.....</b>	<b>6</b>
What is an emissions reduction target? .....	6
Why set a target? .....	7
What is a good reduction target to strive for? .....	7
<b>Milestone Three — Develop a local action plan.....</b>	<b>8</b>
What is a local action plan? .....	8
What does a local action plan include? .....	8
<b>Milestone Four — Implement the local action plan or a set of activities.....</b>	<b>9</b>
Who implements the local action plan? .....	9
What funding is available to implement the plan? .....	9
How long does it take to implement a local action plan? .....	10

**Milestone Five — Monitor progress and report results ..... 10**

    Why monitor progress? ..... 10

    How should we go about monitoring and reporting our progress? ..... 11

    Realizing your goals..... 12

**Frequently Asked Questions..... 12**

**Resources..... 14**

**Contact..... 16**

# Introduction

The Partners for Climate Protection (PCP) program is a network of municipal governments that have committed to reducing greenhouse gas (GHG) emissions and acting on climate change. PCP is a partnership between the Federation of Canadian Municipalities (FCM) and ICLEI – Local Governments for Sustainability. It is the Canadian component of ICLEI's Cities for Climate Protection (CCP) network.

PCP provides a five-milestone framework that can help your municipal government to take action to reduce GHG emissions from the community and municipal operations, protect the climate and provide many other benefits:

- **Cost savings:** Increasing energy efficiency, purchasing renewable energy and developing local renewable energy sources means financial savings for your municipal government and for households and businesses in your community.
- **Job creation and local economic development:** Creating new markets for renewable energy technologies, energy efficiency and sustainable public transit can stimulate your community's economy and increase competitiveness.
- **Reduced traffic congestion:** Promoting public transit, cycling, low-emissions vehicles, car sharing, and active transportation encourages residents in your community to choose more affordable and environmentally friendly travel modes, improving mobility, safety, and public health.
- **Improved air quality:** Reducing pollutants and airborne particles improves air quality and reduces the incidence of respiratory diseases.

Financial savings, improved economic performance, reduced traffic and cleaner air all contribute to one thing — more environmentally friendly and livable communities.

## Did you know...

... that FCM's Green Municipal Fund™ (GMF) provides grants of up to 50 per cent of costs to a maximum of \$350,000 toward the completion of PCP Milestones Two and Three? GMF also offers grants for feasibility studies and grants and low-interest loans for capital projects to implement measures identified in the local action plan.

Useful resources and information, including case studies, webinars, templates, technical assistance, and newsletters, as well as valuable networking opportunities with PCP members, are also available to help you achieve the milestones.

## Using this guide

This guide provides an overview of the PCP five-milestone framework and a list of resources available to help you achieve each milestone.

# A framework for action

The five milestones are typically completed in numeric order so that knowledge is built systematically. However, some municipalities choose to move immediately into the third milestone — developing a local action plan — so that they can start reducing GHG emissions right away.

The PCP program encourages members to share their experiences with the PCP network throughout the milestone process. Share your knowledge and learn from the lessons of your peers — it's the strength of PCP.

PCP Milestones	
<b>Milestone One:</b>	Create a GHG emissions inventory and forecast
<b>Milestone Two:</b>	Set an emissions reductions target
<b>Milestone Three:</b>	Develop a local action plan
<b>Milestone Four:</b>	Implement the local action plan or a set of activities
<b>Milestone Five:</b>	Monitor progress and report results

**City of Thunder Bay, Ontario**

With support from FCM's Green Municipal Fund, the City of Thunder Bay's community partnership, EarthWise, is enlisting community support to achieve the PCP milestones. To date, 11 working groups have developed recommendations on local issues.

[www.earthwisethunderbay.com](http://www.earthwisethunderbay.com)



**Town of Gibsons, British Columbia**

The Town of Gibsons has hired a full-time staff member to develop local action plans for its municipal operations and for the community (Milestone Three). The town is working with the Community Energy Association to establish a utility to capture waste heat from a new ice rink and supply energy to the Upper Gibsons area. It has installed bioswales (landscaping elements) to filter water run-off, and is looking into water metering to reduce water consumption. An anti-idling bylaw has also been implemented, and a guidebook for municipal staff on climate issues is in the works.

[www.gibsons.ca](http://www.gibsons.ca)



## Milestone One — Create a GHG emissions inventory and forecast

### What is a GHG emissions inventory and forecast?

A GHG emissions inventory is a collection of data that quantifies the amount of energy consumed and solid waste generated by your community and municipal operations. The **community inventory** records data from the institutional, commercial, industrial (ICI), transportation, and residential waste sectors. The **corporate inventory** records data from your municipal government facilities and operations, including buildings, street lighting, water and wastewater treatment, the municipal fleet, and corporate solid waste.

You can use the GHG emissions inventory to estimate your community and corporate GHG emissions in future years. The forecast projects future emissions based on assumptions about population, economic growth and the types of fuels consumed.

### What kinds of data are included in the inventory?

The inventory includes data on:

- **energy** use, including electricity and fossil fuels;
- **transportation** practices, such as vehicle kilometres travelled, fleet composition and the types of fuel consumed; and
- **waste** composition, volume and disposal methods.

### What types of GHG emissions are measured?

The inventory tracks three principal GHGs: carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) and methane (CH<sub>4</sub>), expressed as a CO<sub>2</sub> equivalent (CO<sub>2</sub>e).

Typically, these GHGs are generated from:

- the use of fossil fuels to light, heat, cool and ventilate buildings (including homes and offices) and to power municipal operations, industrial processes and vehicles; and
- the decomposition of organic waste in landfills.

## Why develop an inventory?

You can use your inventory as a management tool to:

- **Save money.** The inventory helps you track dollars spent on energy and can reveal opportunities for investment in energy efficiency improvements — what can be measured can be managed.
- **Get a reference point.** Selecting a baseline year, and completing an emissions inventory for that year, is essential for tracking reductions in GHG emissions.
- **Take action.** Identifying significant sources of GHG emissions is the first step toward developing an effective local action plan (Milestone Three) and implementing appropriate emissions reduction measures (Milestone Four).
- **Participate in carbon trading.** A verifiable GHG emissions inventory will help you to participate in the voluntary carbon trading market, and may be required in a regulated market.

### City of Laval, Québec

With support from FCM's Green Municipal Fund, the City of Laval developed a GHG emissions inventory for the community and for its municipal operations. In a new initiative also funded by GMF, the data collected will be used to prepare a local action plan outlining the steps that can be taken to reduce GHG emissions.



[www.ville.laval.qc.ca](http://www.ville.laval.qc.ca)

## Milestone Two — Set an emissions reduction target

### What is an emissions reduction target?

An emissions reduction target is the quantity of emissions your municipal government aims to reduce through various emissions reduction measures outlined in a local action plan. It is usually expressed as a percentage reduction below the quantity of emissions released in the baseline year.

You can set an emissions reduction target at any time. Generally, the target is set after a GHG emissions inventory and forecast is completed (Milestone One) or after existing emissions reduction measures are quantified.

To develop a reduction target, municipal governments usually seek the input of citizens, community stakeholders, non-governmental organizations and the private sector. Your municipal council must adopt the emissions reduction target as well as the timeline for achieving it.

## Why set a target?

The emissions reduction target is the basis of your municipality's program objectives and provides a goal against which to track progress. Some communities have been able to adopt aggressive targets. For instance, the City of Calgary has adopted a target to reduce corporate emissions by 50 per cent below 1990 levels by 2012.

## What is a good reduction target to strive for?

PCP recommends the following targets:

- A **20 per cent reduction** in GHG emissions below baseline levels for **municipal operations** within 10 years.
- A **six per cent reduction** in GHG emissions below baseline levels for the **community** within 10 years.

You may revise the targets as you develop your local action plan (Milestone Three). Select a base year for which the most complete and reliable data are available.

### City of Regina, Saskatchewan

The City of Regina aims to reduce its GHG emissions by 15 per cent below 1990 levels for its municipal operations and six per cent for the community by 2012. The City of Regina's Green Ribbon Community Climate Change Advisory Committee, which is made up of local stakeholders, created a local action plan to meet these targets in 2004, and are now providing guidance, advice and assistance to implement it. An inter-departmental working group is developing an action plan to continue to reduce emissions from municipal operations. The city reduced its corporate emissions by five per cent between 1990 and 2005.



[www.regina.ca/page1018.aspx](http://www.regina.ca/page1018.aspx)

## Milestone Three — Develop a local action plan

### What is a local action plan?

A local action plan (LAP) is a strategic document that outlines how your municipality will achieve its GHG emissions reduction target. Links must also be established between the LAP and the municipal government's official plan and other planning documents.

Many communities develop two separate LAPs — one for municipal operations and one for the community as a whole. Although the reduction potential from the community is significantly greater than that from municipal operations, PCP encourages municipal governments to develop and implement a plan for municipal operations first. By going first, your municipality can demonstrate leadership and provide a positive example for the community to follow. Also, the experience gained in making the smaller municipal LAP can then be applied to the community-wide LAP, which is typically more complex to develop and implement, requiring input and coordination from many stakeholders, such as citizens' groups, non-governmental organizations and the private sector.

### What does a local action plan include?

Whether municipal or community-wide, an LAP generally includes:

- a summary of baseline emissions forecasts and targets;
- a set of existing and proposed emissions reduction actions;
- implementation strategies, including the resources involved; and
- input from stakeholders.

#### **City of Fredericton, New Brunswick**

Launched in 2007 with support from FCM's Green Municipal Fund, the City of Fredericton's Green Matters GHG reduction campaign is a cornerstone initiative to help the city reduce its community GHG emissions by six per cent by 2010. Green Matters has become a successful community-wide initiative that engages, educates, motivates and supports Fredericton residents, businesses and organizations in reducing their emissions in sustainable ways.

[www.greenmattersfredericton.com](http://www.greenmattersfredericton.com)



### City of Yellowknife, Northwest Territories

Using its community GHG emissions inventory, the city worked with the community to develop a Community Energy Plan to help Yellowknife lower its GHG emissions and energy consumption costs. The plan's 12 overarching proposals will help Yellowknife lower its GHG emissions by 20 per cent for city operations and by six per cent compared to 2004 levels for the community by 2014. It recommends a mixture of policy instruments ranging from voluntary to regulatory, and it encourages the city to lead by example by undertaking emissions reduction measures in its own operations.

[www.yellowknife.ca](http://www.yellowknife.ca) (see "Community Energy Plan Implementation Advisory Committee" under City Hall Committees)



## Milestone Four — Implement the local action plan or a set of activities

### Who implements the local action plan?

While municipal staff are responsible for putting the plan in motion and maintaining momentum, non-governmental organizations and private-sector contractors can contribute to the implementation of specific projects. The approval and support of council, municipal staff, stakeholders and the community are essential to the plan's success.

### What funding is available to implement the plan?

You have several options for financing the implementation of your local action plan. You can use internal funds, obtain third-party financing through performance contracting and borrowing, and apply for grants and loans for environmental initiatives. For example, FCM's Green Municipal Fund offers grants and loans for leading studies and projects (see [www.fcm.ca/gmf](http://www.fcm.ca/gmf)).

When planning your budget, consider the following questions:

- Which measures can be incorporated into existing projects or expenditures?
- Which measures will require new expenditures?
- What is the payback period?

- What savings or co-benefits will result from these measures (e.g. lower fuel costs for hybrid vehicles, or reduced energy costs for heating and cooling)?
- Is funding available in the current municipal budget?
- What alternative funding sources exist?
- What are the project's life cycle costs?

### **Benefits for today and tomorrow**

While payback periods of five or more years generally result in greater GHG reductions, there are many short-term actions that result in direct reductions. See the *Quick Action Guide* at [www.fcm.ca/gmf](http://www.fcm.ca/gmf) for many ways to start reducing GHGs right away.

## **How long does it take to implement a local action plan?**

Allow yourself enough time to meet your emissions reduction goal by the target year, taking into account existing processes and responsibilities, future administrative, technical and political changes, council and staff turnover, and other issues. Include time in your implementation schedule for stakeholder review and input.

It is important to note that planning does not end with implementation — be sure to revisit your plan on a regular basis to account for new changes. Building renewal into your plan is a key element to long-term success.

## **Milestone Five — Monitor progress and report results**

### **Why monitor progress?**

Monitoring the results of the actions planned for in Milestone Three and implemented in Milestone Four helps you to determine:

- whether reduction measures are producing the anticipated results; and
- whether your emissions reduction target will be met.

If your actions are not producing the anticipated results or your target will not be met, the data collected can provide you with the information you need to evaluate and adjust your activities.

## How should we go about monitoring and reporting our progress?

There are four main steps to achieving Milestone Five:

1. **Track the results of specific emissions reduction measures.** Tracking the results of specific actions involves quantifying the reduction in energy consumed or waste generated as a result of the actions undertaken, and then calculating the quantity of GHG emissions that was avoided.

In addition to monitoring emissions reductions, you can also assess your implementation costs and track co-benefits, such as reduced costs, increased use of innovative technologies, job creation and improvements to local air quality and community health.

**Note:** Be sure to use the same data collection methods to update the inventory as you used to create it for the baseline year (Milestone One).

2. **Update the inventory.** To determine whether your municipality is likely to meet its community and corporate emissions reduction targets, you will need to update the emissions inventory periodically. Updating your inventory every three to five years will help to ensure there is adequate time to refine your local action plan if necessary. While tracking specific actions is a valuable exercise to ensure they are effective, updating the inventory enables you to account for outside factors contributing to your emissions profile, such as growth, economic development, legislation and behaviour change.
3. **Engage stakeholders and decision-makers.** Throughout the milestone process, you will engage with various community stakeholders and decision-makers on the development of your GHG emissions inventory and the development and implementation of your local action plan. Continue this participatory approach into Milestone Five, engaging stakeholders and decision-makers in monitoring and verifying the results of your local action plan to ensure that your municipality can meet the targets set in Milestone Two.
4. **Report to stakeholders and to FCM.** The final stage of Milestone Five is to report on your activities to your stakeholders and to FCM. Reporting to your stakeholders provides them with the results of the processes to which they contributed, and can help you earn support for future initiatives. Results can be included in existing reports produced by your municipal government, such as a sustainability progress report. They can also be described in a stand-alone document. FCM will conduct a technical review of your individually tracked actions and your updated inventory.

Reporting to FCM enables the Federation to ensure consistency among PCP members and to report on the achievements made through participation in the PCP program. At Milestone Five, you will be able to report quantifiable results of your actions, which tangibly illustrate the significance of action at the local level.

## Realizing your goals

Reaching Milestone Five is a significant achievement, but it does not signal the end of your community's emissions reduction efforts. A local action plan is a living document that is revised as information, ideas and circumstances evolve.

### City of Edmonton, Alberta

With support from FCM's Green Municipal Fund, the City of Edmonton measured its community energy consumption and GHG emissions using utility data. Because the city works with several partners to offer rebates and incentives for energy-efficient products, it is also able to track certain purchases, such as high-efficiency furnaces, which enables it to track GHG emissions.



[www.co2re.ca](http://www.co2re.ca)

## Frequently Asked Questions

### How do I complete the milestones if my municipality has few staff and no budget?

This challenge can often be overcome by looking to the community for support. Many PCP members have retained students, academics or other community groups for support. Many provincial governments and electrical utilities now offer support to municipalities to undertake climate work.

You may also consider working on a regional scale. If there are several small municipalities in your area working through the PCP Milestone Framework, why not pool resources? For example, the Strait-Highlands Regional Development Authority in Nova Scotia and the Capital Regional District in British Columbia used a regional approach to completing PCP milestones. Remember that ICLEI provides free technical support to PCP members working through the milestones.

### How much should our municipality budget to complete the five milestones?

The cost of completing the five milestones will vary depending on a number of factors. On average, PCP members have spent \$110,000 to complete Milestones One to Three for municipal operations and the community together as a package. These costs are often offset by energy savings once reduction measures are implemented. Many municipalities have retained students to assist with developing their inventory and local action plan. Funding support is available from FCM's Green Municipal Fund ([www.fcm.ca/gmf](http://www.fcm.ca/gmf)) and various provincial government programs.

**What support does the Green Municipal Fund provide to complete the milestones?**

FCM's Green Municipal Fund provides grants of up to 50 per cent of costs to a maximum of \$350,000 toward the completion of Milestones Two and Three. GMF also offers grants for feasibility studies and grants and low-interest loans for capital projects to implement actions in Milestone Four. Useful resources and information, including case studies, webinars, templates, technical assistance, and newsletters, as well as valuable networking opportunities with PCP members, are also available to help you achieve the milestones. Contact FCM at [pcp@fcm.ca](mailto:pcp@fcm.ca) for more information.

**What do we do when we complete a milestone?**

Once you have completed a milestone and the work has been endorsed by your municipal council, contact FCM at [pcp@fcm.ca](mailto:pcp@fcm.ca). Members are encouraged to submit their materials (GHG emissions inventory, local action plan, implementation reports, etc.) in draft form so that FCM can review them and provide comments. All submissions undergo a technical review to ensure consistency with program protocols before recognition is issued.

**How do we cite the PCP program in our local action plan and milestone work?**

PCP should be cited as a joint program between the Federation of Canadian Municipalities and ICLEI – Local Governments for Sustainability. Consider using the following sample text: *The Partners for Climate Protection (PCP) is a national network of municipal governments working to address climate change. PCP is a joint initiative between the Federation of Canadian Municipalities (FCM) and ICLEI – Local Governments for Sustainability.* This text can be useful in reports and media releases.

**How can our municipality be recognized for completing a milestone?**

Once your municipality has completed a milestone, contact FCM at [pcp@fcm.ca](mailto:pcp@fcm.ca) for instructions on what material should be submitted. All submissions undergo a technical review to ensure consistency with program protocols. Once this review is complete, FCM will send a letter of recognition to your municipality.

**How is the information that municipalities submit in milestone materials used?**

When PCP members submit milestone materials (GHG emissions inventory, local action plan, implementation reports, etc.) to FCM or ICLEI, these materials undergo a technical review. This review not only enables FCM to identify ways of improving the reports, but also enables FCM to identify the types of measures that municipalities are implementing and the resulting GHG reductions achieved. FCM and ICLEI aggregate these data in annual measures reports. These reports provide FCM and ICLEI with a national perspective on the impact that municipal governments are having on climate change.

### **City of Prince George, British Columbia**

With support from FCM's Green Municipal Fund, the City of Prince George has implemented many initiatives to reduce GHG emissions, including the use of biodiesel in fleet vehicles, an anti-idling program, and the construction of all new municipal buildings to high energy-efficient standards. The city is also investigating the opportunity to install a community energy system to heat municipal buildings downtown.



[www.city.pg.bc.ca/pages/corpplan](http://www.city.pg.bc.ca/pages/corpplan)

## **Resources**

Several publications are available to help you to achieve the PCP milestones. Visit the Partners for Climate Protection pages on the FCM Green Municipal Fund website at [www.fcm.ca/gmf](http://www.fcm.ca/gmf) to download the publications below (publications available from other websites are indicated as such). Also visit the Awards page and Green Municipal Fund Approved Projects Database for examples of sustainable community development initiatives across the country.

Municipalities just getting started in the PCP program or interested in joining should also see the *PCP Overview Brochure*, *The Business Case for Greenhouse Gas Reductions*, the *Quick Action Guide* and the *Council Joining Resolution* available on the above website.

### **Milestone One**

- *Developing Inventories for Greenhouse Gas Emissions and Energy Consumption: A Guidance Document for Partners for Climate Protection in Canada*
- *GHG Inventory Quantification Support Spreadsheet*
- *Electricity Coefficients Update for Inventory Quantification Support Spreadsheet*
- *Local Government Emissions Analysis Protocol (available at [www.iclei.org](http://www.iclei.org))*

### **Milestone Three**

- *Six Steps to a Sustainable Community: A Guide to Local Action Planning*
- *Model Climate Change Action Plan*
- *Adapting to Climate Change: An Introduction for Canadian Municipalities*

**Milestone Four**

- *Quick Action Guide*
- *The Guide to Green Infrastructure for Canadian Municipalities*

**Milestone Five**

- *Local Government Emissions Analysis Protocol (available at [www.iclei.org](http://www.iclei.org))*

**Halifax Regional Municipality, Nova Scotia**

An integrated systems approach to clean air, land, water and energy is helping Halifax Regional Municipality (HRM) meet its commitments to a healthy, sustainable and vibrant community. HRM is currently completing Milestone Five.

In addition to its comprehensive corporate and community local action plans, HRM has also implemented a Clean Air Strategy, a comprehensive Community Energy Plan (with support from FCM's Green Municipal Fund) and Climate SMART, an integrated approach to climate change mitigation and adaptation.



[www.halifax.ca/environment](http://www.halifax.ca/environment)

## Contact

### **Membership support**

FCM provides PCP members with the tools and resources they need to complete the milestones, provides valuable networking opportunities, and manages the review and recognition of milestone achievements.

#### **For membership support contact:**

Partners for Climate Protection  
Green Municipal Fund  
Federation of Canadian Municipalities  
24 Clarence Street  
Ottawa, Ontario K1N 5P3  
Tel.: 613-907-6370  
Fax: 613-244-1515  
E-mail: [pcp@fcm.ca](mailto:pcp@fcm.ca)

**[www.fcm.ca/gmf](http://www.fcm.ca/gmf)**

### **Technical support**

ICLEI – Local Governments for Sustainability provides complimentary technical support to PCP members.

#### **For technical support contact:**

401 Richmond Street, Suite 417  
Toronto, Ontario M5V 3A8  
Tel: 647-728-4390  
E-mail: [lisa.scott@iclei.org](mailto:lisa.scott@iclei.org)

**[www.iclei.org](http://www.iclei.org)**