



Federation of Canadian Municipalities Municipal Building Retrofits



Section 2 Green Leaf™ Assessment - Phase I

Templates

All templates in this guide are available in text and PDF format on the accompanying CD ROM or on the Knowledge Network at <http://kn.fcm.ca>.

Phase I Survey Profile of the Municipal Building Portfolio

Instructions: This survey is to be completed by a representative of the team responsible for the overall facilities and utilities management of the entire building portfolio. All unanswered questions will be interpreted as “no” or “don’t know,” unless they are clearly shown to be not applicable, and will be scored 0.

Provide the name and title of the contact person responsible for filling out the questionnaire:

BASELINE INFORMATION

Size of Municipality

1. The population of the municipality is:

- | | | | |
|--|--|--|--|
| <input type="checkbox"/> 0 – 999 | <input type="checkbox"/> 1,000 – 1,999 | <input type="checkbox"/> 2,000 – 4,999 | <input type="checkbox"/> 5,000 – 9,999 |
| <input type="checkbox"/> 10,000 – 24,999 | <input type="checkbox"/> 25,000 – 49,999 | <input type="checkbox"/> 50,000 – 99,999 | <input type="checkbox"/> 100,000 – 249,999 |
| <input type="checkbox"/> 250,000 – 499,999 | <input type="checkbox"/> > 500,000 | | |

Buildings

1. How complete an inventory of buildings does the municipality currently have? *(If possible, please provide a print-out that includes the name and location of the building, the building type or use, the size (area), the age of the building, the annual utilities expense and other key characteristics)*

- There is no inventory.
- There is an inventory of some of the buildings.
- There is an inventory of most buildings.

2. Of the total portfolio, approximately how many buildings are:

offices _____	multi-residential _____
industrial and work yards _____	sports facilities _____
police detachments _____	firehalls _____
libraries _____	transit depots _____
mixed use (describe): _____	

Total number of buildings _____

Energy

1. The municipality's total energy bill for corporately owned facilities for the last fiscal year was \$ _____

2. List the total energy consumption in municipally owned buildings for each of the fuel types listed below:

gas m³ _____ Cost \$ _____

electricity kWh _____ Cost \$ _____

other fuels (e.g. propane, oil) Specify.

Fuel _____ Amount _____ Units _____ Cost \$ _____

Fuel _____ Amount _____ Units _____ Cost \$ _____

Fuel _____ Amount _____ Units _____ Cost \$ _____

Fuel _____ Amount _____ Units _____ Cost \$ _____

3. Can these figures be supplied on a building-by-building basis?

Yes No

Water

1. The municipality's total water bill for corporately owned facilities for the last fiscal year was \$ _____

2. The total water consumption in municipally owned buildings for the last fiscal year was _____ m³.

3. Can these figures be supplied on a building-by-building basis?

Yes No

HUMAN RESOURCES

Staffing

1. Does your municipality have a person or persons responsible for overall management of energy use and/or managing building energy projects?

- Yes One person part-time
 One person full-time
 Full-time position with staff/committee

No

2. If yes for 1, please provide the name of the contact person.

Phone _____ Fax _____ E-mail _____

3. Does the municipality have sufficient staffing to implement energy-efficiency and water conservation programs?

- Yes No this presents a slight barrier
 this presents a significant barrier
 this presents a very significant barrier

Training

1. Is corporate engineering and project management staff sufficiently trained to design and implement energy efficiency/improvement programs?

- Yes No this presents a slight barrier
 this presents a significant barrier
 this presents a very significant barrier

2. Is building operations staff sufficiently trained/skilled in day-to-day operating procedures in relation to effective energy management and water conservation?

- Yes No this presents a slight barrier
 this presents a significant barrier
 this presents a very significant barrier

3. Are energy-related training opportunities available to facilities management and operations staff on an on-going basis and integrated into other development activities?

Yes Describe: _____

No _____

POLITICAL COMMITMENT

1. Does the Council provide explicit support for utility savings measures in buildings?

- Yes No this presents a slight barrier
 this presents a significant barrier
 this presents a very significant barrier

2. Characterize Council's priority for implementing energy-efficiency and water conservation projects in terms of each of the following:

i) Saving money

- important somewhat important not a priority at this time

ii) Complying with government regulations/standards

- important somewhat important not a priority at this time

iii) Accessing utility/government financial incentives

- important somewhat important not a priority at this time

iv) Building renewal and asset protection

- important somewhat important not a priority at this time

v) Reducing greenhouse gas emissions or other environmental impacts

- important somewhat important not a priority at this time

vi) Stimulating local economy/job creation

- important somewhat important not a priority at this time

3. Does the municipality participate in any programs or maintain affiliations that will provide support for best energy and environmental practices? (e.g., FCM Municipal Building Retrofit Process, FCM Partners for Climate Protection, ICLEI's Cities for Climate Protection, Voluntary Challenge Registry, International Performance Measurement & Verification Protocol (IPMVP), Community Strategic Energy Planning etc.)

Yes Identify: _____

No _____

4. Does the municipality participate in any programs or maintain affiliations that will provide support with regards to design of new buildings? (e.g., Commercial Building Incentive Program (CBIP), Renewable Energy Deployment Initiative (REDI) etc.)

Yes Identify: _____

No _____

5. Is the municipality engaged in any grassroots projects or events that originate at the community, local, regional, national, or international level? (e.g., Clean a river campaign, Earth Day festivities)

Yes Identify: _____

No _____

6. Does the municipality provide financial or operational support for a non-profit agency or organization whose mandate is to deliver education, outreach or funding for community energy-efficiency projects?

Yes Identify: _____

No _____

7. Is there a multi-stakeholder committee or task force that meets regularly to oversee energy-efficiency initiatives?

Yes No

FINANCIAL INVESTMENT

1. Is there a standing financing mechanism (e.g., operational budget, revolving fund, capital budget, etc.) specifically for energy retrofit projects?

Yes What mechanism _____

How much per year _____

No

2. How much of the operating budget is set aside annually for energy-related programs and their management (auditing, communications, planning, training etc.)?

\$ _____

3. Is there a recognized payback period within which energy-efficiency projects are accepted?

Yes 0-3 yr 3-5 yr 5-8 yr >8 yr No

4. Are there sufficient financial mechanisms to implement ongoing energy-efficiency programs?

Yes No this presents a slight barrier
 this presents a significant barrier
 this presents a very significant barrier

PORTFOLIO MANAGEMENT POLICIES

Energy Policy

1. Does the municipality have an energy policy, strategic energy plan or local action plan in place that addresses energy use in buildings?

Yes Describe: _____

No _____

2. a) Does the municipality have an environmental purchasing policy?

Yes Describe: _____

No _____

2. b) Does the purchasing policy include a requirement to purchase energy-efficient appliances and products? (i.e., based on Natural Resources Canada's Energuide ratings)

Yes No _____

3. If energy-efficiency or water conservation retrofits have already been undertaken, how long ago?

0-3 yr 3-5 yr 5-8 yr >8 yr I don't know

4. What was the total investment in retrofits over that period?

\$ _____ over _____ years

5. What were the annual utility savings achieved through these retrofits?

\$ _____ over _____ years

6. To what extent do the following concerns present barriers to implementing ongoing utility efficiency programs?

availability of technical information concerning potential utility savings

minor obstacle moderate obstacle significant obstacle

confidence in reliability or performance of emerging technology

minor obstacle moderate obstacle significant obstacle

Marketing and Communications on Utility Use

1. Is there a communications plan that informs municipal staff and building occupants on ways they can save energy and water?

Yes Describe: _____

No _____

2. Is there a communications plan that informs the community at large on ways they can save energy and water?

Yes Describe: _____

No _____

3. Have tax incentives, direct financing or other mechanisms been implemented to foster development of "green" or eco-efficient buildings at the private sector and/or community level?

Yes Describe: _____

No _____

Utility Monitoring

1. How many of the municipal buildings have had a recent (within five years) energy audit?
(Note - summary reports may be requested.)

<10% 10% - 50% 50% - 75% > 75%

2. Is energy use in municipal buildings monitored?
(Note - summary reports may be requested.)

Yes No

i) If yes, in what portion of the buildings?

<10% 10% - 50% 50% - 75% > 75%

ii) If yes, what methodologies are being utilized?

- A spreadsheet system is used to gather utility bills
- A software system is being used to monitor utility bills
- Building digital controls gather information in real time
- Building staff monitor and measure individual systems

3. For those buildings being monitored, are energy saving targets set?

Yes No

4. Are savings target being met, and new ones set?
(Note - summary reports may be requested.)

Yes No

5. Is water use in municipal buildings being monitored?
(Note - summary reports may be requested.)

- Yes No

i) If yes, in what portion of the buildings?

- <10% 10% - 50% 50% - 75% > 75%

ii) If yes, what methodologies are being utilized?

- A spreadsheet system is used to gather utility bills
- A software system is being used to monitor utility bills

ENERGY INITIATIVES

Building Operations

1. How many buildings have a schedule for regular maintenance of mechanical systems?

- <10% 10% - 50% 50% - 75% > 75%

2. How many buildings have a preventive maintenance program for mechanical systems, which takes into account their lifecycle (i.e., provides for the fact that components need more attention as they age)?

- <10% 10% - 50% 50% - 75% > 75%

3. Roof and cladding are regularly checked in how many buildings?

- <10% 10% - 50% 50% - 75% > 75%

4. For how many buildings does staff regularly check and replace caulking and weather stripping to avoid inappropriate air leaks?

- <10% 10% - 50% 50% - 75% > 75%

5. For how many buildings does staff regularly check for and stop water leaks such as dripping faucets, or perform lost-water accounting?

- <10% 10% - 50% 50% - 75% > 75%

Building Envelope and Systems

1. How many of the municipal buildings have undergone a lighting retrofit within the past seven to ten years?

- <10% 10% - 50% 50% - 75% > 75%

2. How many of the municipal buildings have high-efficiency or condensing type boilers or other higher efficiency heating systems installed within the past seven to ten years?

- <10% 10% - 50% 50% - 75% > 75%

3. How many of the municipal buildings have undergone a window retrofit within the past 15 - 20 years?

- <10% 10% - 50% 50% - 75% > 75%

4. How many of the municipal buildings have undergone a building envelope upgrade (higher insulation and air tightness) within the past 15 to 20 years?

- <10% 10% - 50% 50% - 75% > 75%

5. How many of the municipal buildings have higher-efficiency water heating equipment that was installed within the past seven to ten years?

- <10% 10% - 50% 50% - 75% > 75%

6. How many of the municipal buildings have water savings devices such as faucet aerators on taps and showers?

- <10% 10% - 50% 50% - 75% > 75%

7. How many buildings have undergone conversion to variable volume air/water systems with variable speed drives on fans/pumps within the past seven to ten years?

- <10% 10% - 50% 50% - 75% > 75%

8. How many buildings have installed building automation systems for HVAC and boiler control?

- <10% 10% - 50% 50% - 75% > 75%



Federation of Canadian Municipalities Municipal Building Retrofits

Environmental Profile of the Municipal Building Portfolio

Draft: May 8, 2002



Section 2 Green Leaf™ Assessment - Phase II

Templates

All templates in this guide are available in text and PDF format on the accompanying CD ROM or on the Knowledge Network at <http://kn.fcm.ca>.

Phase II Assessment: Environmental Profile of the Municipal Building Portfolio

Draft – May 8, 2002

Instructions: Most of the following questions either require a yes/no answer or ask for an estimate of the percentage of buildings that have adopted a particular “best practice” or installed an environmentally-progressive system or piece of equipment. In some cases, “not applicable” (n/a) may be the most appropriate response; further elaboration on the reason for such a choice may be requested at a later date.

Some questions previously appeared on the *Green Leaf™ Phase I Survey*; in these cases, your previous answers are already entered, and thus need only be edited if necessary to reflect changes from that time. For your convenience, such questions are highlighted with a *.

Please answer all questions as completely and accurately as possible. For further clarification on how to fill out the questionnaire or background to the questions please refer to the *Guide to the Phase II Assessment*. Assistance is also available by contacting TerraChoice Environmental Services, 1-800-478-0399.

Municipality: _____ Prov/Terr.: _____

Total population:

- 0 - 25,000 25 - 100,000 100 - 250,000 >250,000

Please provide the name of the lead contact person responsible for filling out the questionnaire:

Phone _____ Fax _____ E-mail _____

Date Phase I Survey completed: _____

1. BASELINE INFORMATION

1.1 *How complete an inventory of the building stock does the municipality currently have?

- There is no inventory.
There is an inventory of some of the buildings.
There is an inventory of most buildings.

1.2 *Can energy consumption figures be supplied on a building-by-building basis for all buildings?

- Yes No

1.3 *Can water consumption figures be supplied on a building-by-building basis for all buildings?

- Yes No

2. HUMAN RESOURCES

2.1 *Does the municipality have a person or persons responsible for overall management of energy use and/or managing building energy projects?

- Yes One person part-time
 One person full-time
 Full-time position with staff/ committee

Name/position of person responsible (if different from contact filling out this checklist):

None

2.2 Have Certification Standards (e.g., Certified Energy Manager) been established for all building staff dealing in energy management?

Yes Identify _____

No

2.3 How many hours of energy-related training (on average) do *building staff* receive annually?

- none
0–8 hr (i.e., up to 1 day)
8-35 hr (i.e., up to 1 week)
more than 35 hr

2.4 How many hours of energy workshops or other training sessions do *Energy Management staff* receive annually?

- none
0–8 hr (i.e., up to 1 day)
8-35 hr (i.e., up to 1 week)
more than 35 hr

2.5 Is a formal, ongoing training program available for staff (e.g., Seneca College BES program)

Yes Identify _____

No

2.6 Has the municipality established formal partnerships with:

- Utility
Controls Companies
Energy Services Companies
Other (_____)

in order to provide education or training in energy-related issues?

Note: Documentation such as “memoranda of understanding” may be requested

2.7 Is specific training or general awareness-raising on energy and water conservation provided to all municipal staff and other building occupants?

Yes Describe _____

- a. training has occurred once only
- b. training is ongoing

No

3. POLITICAL LEADERSHIP AND STEWARDSHIP

3.1 Is there a multi-stakeholder standing committee that meets regularly for energy/environment issues in buildings?

Yes No

3.2 How many municipal councillors sit on the committee?

None One More than one

3.3 a) Do any councillors and/or the mayor regularly participate in speaking engagements and/or provincial or national processes relating to energy and water efficiency or the environment (e.g., Climate Chance Process Roundtable)?

Yes No

b) Do any senior bureaucrats perform these functions on behalf of the municipality?

Yes No

3.4 Does the Mayor, councillors or senior bureaucrats regularly address the media and/or participate in media events on energy/environmental issues?

Yes No

3.5 a) Has the municipality adopted the use of sustainability indicators (e.g., Genuine Progress Indicators (GPI), Pembina Institute's Sustainable Well-being Accounts)?

Yes Identify _____

No

b) How have such indicators been integrated into Municipal Finance decision-making?

Describe _____

- 3.6 Is the municipality engaged at the national/international level (e.g., COP6, NCCP, FCM Standing Committee on Environment Issues) on committees or projects that address climate change and/or energy conservation issues?
- Yes Identify _____
- No
- 3.7 *Is the municipality engaged in any grassroots projects or events at the community, local, regional, national, or international level? (e.g., "Clean a river campaign, Earth Day festivities)?"
- Yes Identify _____
- No
- 3.8 *Does the municipality provide financial or operational support for a non-profit agency or organization whose mandate is to deliver education and outreach, or funding sources for energy-efficiency projects at the community level?
- Yes Identify _____
- No
- 3.9 Does the municipal government have a communications plan to inform the community at large on ways to save energy?
- Yes Describe _____
- No
- 3.10 Which of the following have been implemented in order to foster development of "green" or eco-efficient buildings in the private sector and/or community at large?
- "fast-tracking" of "green" projects through progressive interpretation of applicable building codes and the permitting process;
 - tax incentives or deferrals to assist project financing;
 - direct financing mechanism (e.g., Toronto's Better Buildings Program);
 - Co-operation with/endorsement of community-based programs (e.g., Green Communities initiatives such as "Green-Up" programs)
- 3.11 *Has the municipality actively engaged in incentive programs such as REDI, CBIP, FCM Green Funds etc.?
- Yes Identify _____
- No
- 3.12 Has the municipality been nationally recognized for successfully implementing a progressive energy/waste/ other environmental program (e.g., energy management strategy, green procurement plan, etc.)?
- Yes Identify _____
- No

4. PORTFOLIO MANAGEMENT POLICIES

4.1 Environmental Management System

If the municipality has no environmental management system in place, go to the next section.

4.1.1 The municipality has a formal environmental management system (EMS) in place (i.e., an EMS based on ISO 14001 or similarly recognized standard).

Yes No

4.1.2 a) The EMS includes a specific strategy that addresses *energy conservation* and efficient use.

Yes No

b) Energy performance objectives and targets, for the municipality as a whole, are set, monitored and periodically reviewed. (*note – this refers to the municipality’s overall energy goals, across the entire municipal building portfolio, as distinct from the individual building targets, which will be dealt with in 4.3*)

Yes No

4.1.3 a) The EMS includes a specific strategy that addresses *water conservation* and efficient use.

Yes No

b) Municipal water performance objectives and targets are set, monitored and periodically reviewed.

Yes No

4.1.4 a) The EMS includes a specific strategy that addresses *resource use reduction, reuse and recycling*.

Yes No

b) Municipal resource use objectives and targets are set, monitored and periodically reviewed.

Yes No

4.1.5 a) The EMS includes a specific strategy that addresses eco-purchasing.

Yes No

b) Eco-purchasing objectives and targets are set, monitored and periodically reviewed.

Yes No

4.1.6 a) The EMS includes a specific strategy that addresses reduction of and proper use/handling of hazardous and toxic substances.

Yes No

b) Municipal objectives and targets relating to hazardous materials are set, monitored and periodically reviewed.

Yes No

4.1.7 a) The EMS has identified and developed specific strategies for other relevant environmental parameters.
Yes Example(s): _____

No _____

b) Municipal objectives and targets are set, monitored and periodically reviewed for these other parameters.

Yes No

4.1.8 Strategic action plans have been developed to address the above, which include set procedures, schedules and resource and manpower allocations.

Yes No

4.1.9 a) Senior management conducts regular reviews of these strategic plans with a view to continuous improvement.

Yes No

b) Such reviews make use of sustainability indicators.

Yes No

4.2 Environmental Policy

If the EMS section was completed, or there is no municipal environmental policy, mark as n/a and go to next section. n/a

4.2.1 In the absence of a formal EMS, the municipality has developed and published a guiding environmental policy statement.

Yes No

4.2.2 The policy expresses a commitment to energy and resource conservation.

4.2.3 The policy expresses a commitment to general pollution prevention.

4.2.4 The policy specifically expresses a commitment to address:

a. climate change impacts

b. energy efficiency

c. water conservation

d. waste reduction

e. eco-purchasing

f. the risk of hazardous/toxic releases

g. other relevant environmental parameters

Example: _____

4.2.5 The policy expresses a commitment to continual improvement in these areas.

4.2.6 The policy is communicated to staff and the general public.

4.2.7 Senior management or council has approved the environmental policy.

4.3 Monitoring and Targeting

4.3.1 In how many municipal buildings have *energy* audits been undertaken within the last three years?

<10% 10% - 50% 50% - 75% > 75%

4.3.2 In what portion of municipal buildings is energy use being monitored?

<10% 10% - 50% 50% - 75% > 75%

4.3.3 For those buildings being monitored

a. energy saving targets are being set (*note: these are specific to the individual building, as distinct from the municipality's overall energy goals*)

Yes No

b. targets have been met, and new ones set

All buildings Some buildings None

4.3.4 How many buildings have had a *water* audit been done within the last three years?

<10% 10% - 50% 50% - 75% > 75%

4.3.5 How many buildings monitor water usage on an ongoing basis?

<10% 10% - 50% 50% - 75% > 75%

4.3.6 For those buildings being monitored

a. water saving targets are being set (*note: these are specific to the individual building, as distinct from the municipality's overall water goals*)

Yes No

b. targets have been met, and new ones set

All buildings Some buildings None

4.3.7 How many buildings have had a *waste* audit been done within the last three years?

<10% 10% - 50% 50% - 75% >75%

4.3.8 a. waste reduction targets are being set for individual buildings (*note: these are specific to the individual building, distinct from the municipality's overall waste goals*)

Yes No

b. targets have been met, and new ones set

All buildings Some buildings None

4.4 Purchasing Policy

**Many municipalities contract out cleaning, maintenance and/or construction /renovation projects. For the purposes of this assessment, "best practice" requires that the following purchasing measures be specified in such contracts; a box is provided to indicate where a particular practice is contracted.*

4.4.1 There is a formal environmental purchasing policy for products used in municipal buildings.

Yes No

4.4.2 This procurement program includes:

- a) a list of products for housekeeping and building maintenance that have been eco-labeled by third party certification
- b) paper products made from (post-consumer) recycled paper
- c) products made from other recycled materials (glass, rubber, plastic)
- d) the list of products is regularly reviewed and updated

Yes No (Latest update was _____)

4.4.3 Material Safety Data Sheets (MSDS) are reviewed by the purchasing department.

Yes No

4.4.4 The environmental purchasing policy includes a requirement for purchasing energy-saving, high-efficiency equipment (e.g., appliances, motors, furnaces, air conditioners, heat pumps).

Yes No

4.4.5 The policy includes a commitment to purchasing of environmentally-preferable (e.g., low-VOC, non-toxic) cleaning supplies.

Yes (through direct procurement)
Yes (as specified in cleaning contracts)
No

4.4.6 Heating oil contracts specify low-sulfur content (n/a if no buildings use oil)

Yes No N/A

4.4.7 Low-VOC paints and surface coatings are used wherever possible (i.e., replace coatings made with petroleum-based solvents).

Yes (through direct procurement)
Yes (as specified in cleaning contracts)
No

4.4.8 Carpets, furnishings, drapes and other interior adornments are specified that do not contain VOC's, heavy metals, formaldehyde or other toxic materials.

Yes (through direct procurement)
Yes (as specified in cleaning contracts)
No

4.4.9 Lumber or other wood products used in building construction/outfitting are obtained as certified sustainable forestry products.

- Yes (through direct procurement)
Yes (as specified in cleaning contracts)
No

4.4.10 Building materials/supplies (wood, stone, etc.) are specified or obtained from local sources (i.e., within 500km*):

- a) At least 50%
b) Over 80%

** "local" means a product that is grown/mined and refined/processed within the specified distance, not just purchased.*

4.4.11 Contracts specify arrangements for take-back/reuse of supplier packaging:

- No Up to three examples more than three examples

Please provide at least one example: _____

5. BUILDING OPERATIONS, INFRASTRUCTURE AND RENOVATIONS

5 a) Energy Management

5.1 Energy Efficient Maintenance Operations

5.1.1 How many buildings have a comprehensive operating manual covering standard control settings and operating instructions for all service equipment that may affect the energy consumption and IAQ?

- <10% 10% - 50% 50% - 75% >75%

5.1.2 How many buildings have a prescribed system maintenance schedule that ensures that HVAC systems are running optimally, including regular tuning and checking of settings?

- <10% 10% - 50% 50% - 75% >75%

5.1.3 In how many buildings are all maintenance tasks recorded on regular basis?

- <10% 10% - 50% 50% - 75% >75%

5.1.4 *How many buildings conduct regular checking of roof and cladding?

- <10% 10% - 50% 50% - 75% >75%

5.1.5 *How many buildings conduct regular checking and replacing of caulking and weather stripping to avoid inappropriate air infiltration and ex-filtration?

- <10% 10% - 50% 50% - 75% >75%

5.1.6 *Does the municipality have a *preventive* maintenance program for mechanical systems, in which major overhaul or replacement of certain components is scheduled, in accordance with their anticipated lifecycles?

Yes No

5.1.7 How many of the ice hockey arenas practice such maintenance practices as ice thickness control or reduced head pressure on compressors?

<10% 10% - 50% 50% - 75% > 75%

5.1.8 How many buildings have installed *separate* electricity/energy metering for different areas of the building and/or specific systems or pieces of equipment?

<10% 10% - 50% 50% - 75% > 75%

5.1.9 Have *real-time demand monitoring* of individual equipment/systems been implemented in any municipal buildings?

None One More than one

Name a building _____

5.2 Efficiency of HVAC Systems

5.2.1 *How many buildings have installed high-efficiency or condensing type boilers or other higher efficiency heating systems (i.e., infrared heating in industrial buildings)?

<10% 10% - 50% 50% - 75% > 75%

5.2.2 *How many buildings have undergone conversion to variable air volume (VAV) ventilation systems with variable speed drives on fans/pumps?

<10% 10% - 50% 50% - 75% > 75%

5.2.3 *How many municipal buildings installed building automation systems for HVAC and boiler control?

<10% 10% - 50% 50% - 75% > 75%

5.2.4 Have any municipal ice hockey arenas have radiant heating and/or cooling ceiling panels installed?

None One More than one

Name a building _____

5.2.5 Have any municipal buildings installed other advanced energy saving HVAC systems or measures such as: heat recovery ventilators or wheels, heat exchangers for space heating and hot water, displacement ventilation, thermal mass storage or ice storage?

None One More than one

Name a building _____

What technology _____

5.3 Building Envelope Upgrades

5.3.1 In how many municipal buildings have air-leakage assessments been conducted?

<10% 10% - 50% 50% - 75% > 75%

5.3.2 *How many municipal buildings have implemented building envelope upgrades (higher insulation and airtightness)?

<10% 10% - 50% 50% - 75% > 75%

5.3.3 *How many municipal buildings have
a) undergone higher-efficiency window retrofits (e.g., argon fill, “warm-edge” spacers)?

<10% 10% - 50% 50% - 75% > 75%

b) have had reflective film or “low-e” coatings installed on existing or new windows?

<10% 10% - 50% 50% - 75% > 75%

5.3.4 In how many industrial/institutional buildings are the loadings docks protected by a curtain to prevent heat escape during winter months?

<10% 10% - 50% 50% - 75% > 75%

5.3.5 How many buildings have planted/encourage strategically-located vegetation to provide shading (especially on exterior/rooftop A/C units) and thus reduce cooling loads?

<10% 10% - 50% 50% - 75% > 75%

5.3.6 Have any buildings installed high-albedo (i.e., high-reflectance) materials or surface coatings on roofs and other exterior surfaces to reflect light and thus moderate building temperatures?

No one building more than one building

Name a building _____

5.3.7 Have any buildings installed “Green Roofs” or “walls” (i.e., rooftop landscaping, hanging gardens) to reduce the building’s ecological footprint, absorb runoff and moderate building temperatures?

No one building more than one building

Name a building _____

5.3.8 Does the municipality employ thermal imaging to assess the condition of building envelopes?

Yes (Reports may be requested)

No

5.4 Efficiency of Equipment and Appliances

5.4.1 How many buildings have co-ordinated on/off times of major systems (e.g., daily temperature control, facility lighting, arena chilling cycles, etc.) in order to reduce peak demands?

<10% 10% - 50% 50% - 75% > 75%

5.4.2 How many buildings have improved efficiency of the water heating equipment, and/or thoroughly insulated all hot water pipes?

<10% 10% - 50% 50% - 75% > 75%

5.4.3 How many recreational/residential buildings use timers to cycle swimming pool heaters, hot tubs motors and/or saunas off and on?

<10% 10% - 50% 50% - 75% > 75%

5.4.4 Have any municipal ice hockey arenas implemented refrigeration/ice-making innovations such as brine headers, automated condenser control systems, plate heat exchangers and/or other heat recovery systems?

No one building more than one building

Name a building _____

5.4.5 How many buildings have installed photoelectric cell hand dryers in washrooms?

<10% 10% - 50% 50% - 75% > 75%

5.4.6 For how many recreational swimming pools have advanced technologies been implemented for pool pre-heating and/or space heating purposes (e.g., heat exchangers, Dryatron® systems)?

<10% 10% - 50% 50% - 75% > 75%

5.4.7 How many swimming pools and/or hot tub(s) in recreational buildings are covered when not in use?

<10% 10% - 50% 50% - 75% > 75%

5.4.8 How many of the swimming pools follow the manufacturers' suggested preventive maintenance regime for the pool heater: service and replacement of the filter(s), and checking and cleaning of skimmer and pump strainer baskets?

<10% 10% - 50% 50% - 75% > 75%

Note – energy management scoring “credit” will also be given for buildings with water-saving devices such as low-flow showerheads and faucet aerators (see Question. 5.8.1)

5.5 Lighting /Illumination Systems

**On your Preliminary Surveys, it was reported that*

<10% 10% - 50% 50% - 75% > 75%

of your municipal buildings had implemented a lighting retrofit.

5.5.1 In how many of the municipal buildings have at least 90% of incandescent lamps been replaced with compact fluorescent lamps?

<10% 10% - 50% 50% - 75% > 75%

5.5.2 How many of the municipal buildings have equipped fluorescent lamps with high-efficiency bulbs and electronic ballasts?

<10% 10% - 50% 50% - 75% > 75%

5.5.3 How many of the municipal office buildings have installed task lighting to replace a portion of general room lighting?

<10% 10% - 50% 50% - 75% > 75%

5.5.4 How many of the municipal buildings have exit signs that utilize light emitting diodes (LEDs) or other high-efficiency lamps?

<10% 10% - 50% 50% - 75% > 75%

5.5.5 How many of the buildings maximize the use of natural light or daylight by use of skylights, optimal window design/placement and/or light shelves?

<10% 10% - 50% 50% - 75% > 75%

Name a building _____

5.5.6 Have any buildings implemented "light-harvesting" systems, such as light sensors to automatically adjust interior lighting to external conditions?

None One More than one

Name a building _____

5.5.7 How many of the municipal buildings use high intensity discharge lamps (e.g., high-pressure sodium or metal halide) on the building's exterior and other appropriate areas (e.g., over arena ice surfaces)?

<10% 10% - 50% 50% - 75% > 75%

5.5.8 How many of the municipal buildings use daylight sensors and/or timers to control exterior lighting?

<10% 10% - 50% 50% - 75% > 75%

5.5.9 How many of the municipal buildings have installed occupancy sensors or timers in low-traffic areas, where appropriate?

<10% 10% - 50% 50% - 75% > 75%

5.5.10 How many buildings have implemented delamping (disconnecting unnecessary ballasts) or dewatting (using lower wattage ballasts) in public areas such as halls, corridors and lobbies to reduce “overlighting” while maintaining appropriate light levels?

<10% 10% - 50% 50% - 75% > 75%

5.5.11 Do any ice hockey arenas have multi-level lighting systems that respond to changing light level requirements for various programming?

none one more than one

Name a building _____

5.5.12 Is there a policy of encouraging/facilitating building tenants (in leased spaces) to convert to efficiency lighting technologies?

No Yes not applicable

5.5.13 How many buildings have a planned schedule of maintenance and cleaning of lighting fixtures?

<10% 10% - 50% 50% - 75% >75%

5.5.14 How many buildings have adopted group re-lamping strategies?

<10% 10% - 50% 50% - 75% >75%

5.6 Renewable Energy

5.6.1 Do any buildings utilize at least one of the following renewable energy technologies for space heating/cooling and/or water heating:

- a) solar (panels)
- b) solar wall
- c) ground-source heat pumps (i.e., ground loop)

none one building more than one building

Name a building _____

5.6.2 Do any buildings utilize at least one of the following renewable energy technologies for on-site electricity generation:

- a) solar (photovoltaics)
- b) wind
- c) geothermal
- d) biomass/biogas

none one building more than one building

Name a building _____

5.6.3 Have any recreational swimming pools installed solar-powered water heating systems?

None One More than one

Name a building _____

5.6.4 What percentage of total municipal energy budget constitutes Green Power?

None 1-5% More than 5%

5.6.5 Has energy/heat cogeneration been implemented in any municipal buildings/facilities?

none one building more than one building

Name a building _____

5.6.6 a) Are any buildings equipped with photovoltaic-powered lighting systems or other major equipment/systems?

none one building more than one building

Name a building _____

b) Are streetlights or other elements of municipal infrastructure powered with photovoltaics?

Yes No Describe _____

5.7 Transportation

5.7.1 How many buildings are within 500 meters of public transportation?

<10% 10% - 50% 50% - 75% >75%

5.7.2 How many buildings have facilities to store bicycles?

<10% 10% - 50% 50% - 75% >75%

5.7.3 How many buildings have shower facilities for those who cycle to work?

<10% 10% - 50% 50% - 75% >75%

5.7.4 How many municipal facilities charge local market rates for parking?

<10% 10% - 50% 50% - 75% >75%

5.7.5 Does the municipality provide other incentives, programs or other forms of explicit support (e.g., bus pass subsidization, preferential carpool parking rates) that encourage staff to utilize alternative commuter transportation options?

Yes No Describe _____

5.7.6 Is telecommuting by municipal staff actively encouraged/promoted?

Yes No

5 b) Water Management

5.8 Water Conservation

5.8.1 How many buildings have installed water-saving devices such as faucet aerators on taps and showers?

<10% 10% - 50% 50% - 75% > 75%

5.8.2 How many buildings have either installed low-flow toilets, or have equipped existing toilets with water-saving devices (e.g., tank fill diverters)?

<10% 10% - 50% 50% - 75% > 75%

5.8.3 In how many buildings do maintenance personnel routinely check for plumbing leaks, and repair them within 3 days?

<10% 10% - 50% 50% - 75% > 75%

5.8.4 How many buildings reduce their watering requirements for landscaping*, by:

a) adoption of conservation *practices* (e.g., evening watering, mulching, maximized use of indigenous or hardy species)

<10% 10% - 50% 50% - 75% > 75%

b) installation of conserving *equipment* (e.g., soaker hoses, soil humidity sensors)

<10% 10% - 50% 50% - 75% > 75%

* If landscaping/turf maintenance is contracted out, the answer should indicate whether the contractor is employing these practices.

5.9 Grey- and Storm-water Management Systems

5.9.1 How many buildings have installed a system to detain or recover stormwater runoff for subsequent reuse (cisterns, rain-barrels, stormwater filtering systems, bio-retention basins, etc.) ?

<10% 10% - 50% 50% - 75% > 75%

5.9.2 Have any buildings have installed a system to recover and reuse “grey” water (shower effluent, final dishwashing/laundry rinse, etc.) ?

none one building more than one

if yes, name building and describe system: _____

Note – water management scoring “credit” will also be given for buildings with green roofs (see Question. 5.3.7)

5.10 Black-water/Sewage Treatment and Disposal

5.10.1 Have any buildings installed composting toilets to reduce sewage output?

none one building more than one

Name a building: _____

5.10.2 Have “living machines,” constructed wetlands, or other ecological waste water treatment facilities been incorporated into any municipal buildings?

No 1 building > 1 building, or large centralized system

Name a building: _____

5 c) Waste Management

5.11 Waste Reduction Policy / Reduction of Material Inputs

5.11.1 How many buildings have a communications plan to occupants and staff to encourage reduction, re-use and recycling?

<10% 10% - 50% 50% - 75% > 75%

5.11.2 Does the municipality have a construction and renovation waste management plan (alternatively, do contracts or RFPs for these works include a requirement for this measure)?

Yes No

5.11.3 The design stage of new capital projects takes into account:

a) *durability* of material and equipment being purchased (and/or specifies this in contracts)

Yes No

b) *reusability* of material and equipment being purchased (and/or specifies this in contracts) (e.g., maximize use of bolts vs. welding).

Yes No

5.11.4 During renovation projects, materials and/or parts are salvaged for reuse or recycled

Yes No

5.11.5 Provide up to five example of paper reuse measures being actively encouraged and employed in municipal buildings (e.g., double-sided copying, email vs. paper memos):

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____

5.11.6 Provide up to three example of active reuse/donation of old/outdated products/materials undertaken in municipal buildings:

- i. _____
- ii. _____
- iii. _____

5.12 Recycling/Reuse Programs and Strategies

5.12.1 How many buildings have separate storage/handling facilities for recyclable waste?

- <10% 10% - 50% 50% - 75% > 75%

5.12.2 The following materials are being recycled from municipal buildings:

- a) newsprint
- b) fine paper
- c) cardboard
- d) glass
- e) aluminum cans
- f) other metals
- g) plastics
- h) other materials – describe: _____

5.12.3 How many buildings provide recycle collection bins for separate offices, workstations, etc.

- <10% 10% - 50% 50% - 75% > 75%

5.12.4 In how many applicable buildings is organic waste (food scraps, leaf/yard waste, old flowers, etc.) separated from the waste stream and composted (either on-site or sent to central facility)?

- <10% 10% - 50% 50% - 75% > 75%

5.12.5 Do Food Services contracts contain a commitment to:

- a) compost food scraps
- b) ensure appropriate removal and disposal of waste oil and grease

5.12.6 Does the municipality offer compost to citizens for their own garden use?

- Yes No

5 d) Hazardous Materials Use and Disposal

5.13 Inventory/Inspections Relating to Hazardous Materials

5.13.1 Has the municipality designated someone (individual staff position or committee) who is responsible for hazardous materials in municipal buildings, including legal compliance, maintenance, documentation, and emergency preparedness?

No Yes : Identify: _____

5.13.2 Ozone-depleting substances (ODS)

a) Does the municipality have a plan to phase out ozone-depleting refrigerants?

Yes No

b) In how many municipal buildings have all *conventional* ODSs (e.g., CFCs or halons with an ozone-depleting potential less than 0.06) been completely eliminated?

<10% 10% - 50% 50% - 75% > 75%

c) Have any buildings eliminated *all* ODSs (i.e., including HFCs, HCFCs)?

none one building more than one

d) Does the management plan for refrigerants, include keeping an inventory of refrigerants (with service records showing the amounts of refrigerant that are added) for *all* buildings (if contracted out, contractors must also comply)?

Yes No

5.13.3 Asbestos

a) How many buildings have an asbestos management plan that calls for periodic inspections (that ensure compete and secure encapsulation)?

<10% 10% - 50% 50% - 75% > 75%

b) In how many municipal buildings has asbestos been completely eliminated?

<10% 10% - 50% 50% - 75% > 75%

c) There is a municipal policy requiring that contractors and staff working on/in buildings be informed of asbestos presence.

Yes No

d) The municipality requires that any work done in municipal buildings that could potentially disturb asbestos-containing materials will be done only by qualified contractors in accordance with applicable regulatory requirements.

Yes No

5.13.4 *Polychlorinated Biphenyls (PCB's)*

a) Does the municipality have a plan to phase-out and dispose of the PCB-containing equipment?

Yes No

b) How many municipal buildings have removed all PCBs or stored them securely in designated spaces?

<10% 10% - 50% 50% - 75% > 75%

5.13.5 How many buildings keep a complete inventory of all other hazardous materials?

<10% 10% - 50% 50% - 75% > 75%

5.14 Storage and Handling of On-site Materials

5.14.1 *Fuel Storage Tanks*

a) How many of the buildings with fuel storage tanks conduct regular inspections for compliance to guidelines and for leak tests, for which records are kept?

<10% 10% - 50% 50% - 75% > 75%

b) How many buildings with storage tanks conduct regular leak tests, for which records are kept?

<10% 10% - 50% 50% - 75% > 75%

c) How many storage tanks in municipal buildings have overfill protection devices (i.e., alarms)?

<10% 10% - 50% 50% - 75% > 75%

d) How many tanks are provided with spill containment?

<10% 10% - 50% 50% - 75% > 75%

5.14.2 How many buildings have a secure storage space for hazardous materials and wastes used in building operations with measures to prevent spills entering the drains (i.e., floor drain protection and materials' containment)?

<10% 10% - 50% 50% - 75% > 75%

5.14.3 *Mercury*

a) Municipal policy requires that fluorescent light bulbs from municipal buildings are diverted from the waste stream and sequestered as hazardous waste

Yes No

b) Policy requires the diversion of other mercury-containing devices (e.g., thermostats and other specialized switches) from the waste stream

Yes No

c) Arrangements are in place to send mercury waste to a mercury retorting company

Yes

No

d) Use of low mercury fluorescent lamps is specified in municipal buildings.

Yes

No

5.14.4 *Pesticides/Fertilizers*

Landscaping contracts are with certified contractors who use environmentally-benign maintenance techniques (e.g., integrated pest control) (if not contracted out, municipal staff commits to same measures). They commit to either:

a) minimizing the need for synthetic chemical pesticides; when such pesticides are used, the reason for use must be documented;

or

b) the complete elimination of pesticides, regardless of circumstances

5.14.5 Have any municipal swimming pools replaced chlorine use with a less toxic alternative or a non-toxic ionization system, such as

- a. Ozone/superoxidation
- b. Hydrogen peroxide
- c. Ionization
- d. UV radiation treatment

None

One

More than one

Name a building _____

5.14.6 Do any municipal swimming pools have addition of chemicals to water automatically dosed, according to monitored needs?

None

One

More than one

Name a building _____

5.14.7 The application of chemical agents for snow removal (e.g., urea, salt) to control ice hazards is minimized in favour of inert materials (e.g., sand, grit), wherever possible (applies whether by municipal staff or contracted snow removal service).

Yes

No

5.15 Management of Air Emissions

5.15.1 a) Does the municipality have a policy in place regarding indoor air quality (IAQ), including such measures as regular air monitoring and complaint response procedures?

Yes No

b) Have any specific IAQ monitoring technologies (e.g., automated CO or CO₂ monitors) been installed in any municipal buildings?

None One More than one

Name a building and describe technology: _____

5.15.2 a) Does the municipality have a regulation in place prohibiting smoking in all municipal buildings?

Yes No

b) if no, how many individual municipal buildings prohibit smoking?

<10% 10% - 50% 50% - 75% > 75%

5.15.3 How many buildings keep records of cleaning of burners, monitoring of controls, and analysis of flue gas?

<10% 10% - 50% 50% - 75% >75%

5.15.4 a) How many buildings with central chillers have automatic refrigerant leak detectors and/or refrigerant capture systems?

<10% 10% - 50% 50% - 75% > 75%

b) Staff/contractors have had training to deal with leaks, and can readily provide all the necessary contacts to report a leak and obtain prompt assistance.

Yes No

5.15.5 How many municipal arenas use electric ice resurfaces (e.g., Zambonis®) in place of combustion-powered machines?

<10% 10% - 50% 50% - 75% > 75%

5.16 Emergency Response

5.16.1 An emergency response plan (beyond fire) has been developed by the municipality.

Yes No

5.16.2 The emergency response plan includes:

- a) equipment to deal with environmental emergencies (such as spills etc).
- b) site maps showing the location of each building's environmentally significant features such as storage tanks
- c) appropriate reference to local, provincial and federal legislation regarding emergency procedures (chemical/fuel spills, CFC release, etc.)
- d) contingency plans for both short-term and long-term power failures
- e) posting in each municipal building and/or staff training

5.16.3 How many buildings have spill clean-up kits and safety equipment such as eyewash stations located in accessible places near the storage areas of hazardous materials?

<10% 10% - 50% 50% - 75% > 75%

5 e) Planning and Design

5.17 Planning/Design of New Buildings and Re-design of Existing Ones

5.17.1 *Site Selection*

a) How many existing municipal buildings are located on sites that are known to be uncontaminated?

<10% 10% - 50% 50% - 75% > 75%

b) Does the site selection process for new municipal buildings specifically avoid or prohibit development on sensitive or problematical sites such as wetlands, significant habitats, prime agricultural land, areas known to be especially prone to floods/earthquakes and known (unrehabilitated) contaminated sites?

Yes No n/a (no new buildings in foreseeable future)

c) Does the site selection process give preference to previously developed urban sites over pristine areas?

Yes No n/a (no new buildings in foreseeable future)

d) Are any buildings located on rehabilitated brownfield sites?

none one building more than one

Name a building: _____

5.17.2 Do all new buildings comply with the *Model National Energy Code for Buildings*?

Yes No n/a (no new buildings)

5.17.3 Do any new buildings incorporate energy-efficient technologies or practices specified in the Commercial Buildings Incentive Program (CBIP)?

Yes

No

n/a (no new buildings)

5.17.4 Has the municipality investigated space-use optimization (e.g., consolidation of spaces, adopting multi-function space usage) within individual buildings or the entire portfolio?

Yes

No

5.17.5 Are all new buildings in the municipality required to undergo a formal environmental assessment before building permits and approval is granted?

Yes

No

5.17.6 Are site sedimentation and erosion control plans required for new buildings, in order to address loss of topsoil during construction from water/wind erosion and potential sedimentation of adjacent water bodies?

Yes

No