

The City of Toronto's Environmental Management System – An Implementation Strategy



Final Report

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1.0 Executive Summary

An Environmental Plan for the City of Toronto was approved by Council on April 12, 2000. The Environmental Plan identified a number of actions to be taken to improve the environmental performance of the City, including the development of an environmental management system (EMS). IndEco was retained in the spring of 2000 to assist the Environmental Planning and Support group (EP&S) of Environmental Services in developing a strategy for the implementation of an EMS for the City. The project was designed to:

- Introduce staff from across the City's departments to environmental management systems, by means of a training workshop held on May 30, 2000.
- Interview a selection of senior staff on what they saw as tasks required to implement an EMS, and priority tasks.
- Conduct a strategic planning session (held on July 11, 2000) with senior staff across City departments to review suggestions for priority actions from the interviews and solicit other views on actions and priorities for implementing an EMS.

Several participants at the planning session suggested that the scope of the project be broadened to include an overall sustainability management system (SMS). At the request of Environmental Services, IndEco developed a sustainability framework (Figure 2) for an SMS into which the EMS would fit, taking into account the existing mandate, roles and responsibilities of departments across the City. The proposed Sustainability Framework includes the City's Vision Statement, Mission Statement, Guiding Principles, and Community Goals as well as the following sustainability objectives:

- Strive for excellence
- Adopt a precautionary approach
- Adopt a systems approach
- Instill an attitude of innovation
- Create new models
- Stage change over time
- Provide education and training
- Monitor and report on progress

These objectives lead to the Sustainability Management System out of which flows the Environmental Management System, The Economic Vitality Management System, and the Social Equity Management System.

Based on the recommendations for priority actions that emerged from the strategic planning session and the sustainability framework that was developed, IndEco identified a set of priority actions to move the City forward on implementing the

EMS (Table 3). Each priority action relates to the preferred state of an EMS for the City and is relevant to the development of an overall SMS. It is recommended that action items be implemented over a three-phase timeline based on the level of priority of the action item.

There are 12 priority actions for the first phase of implementation (January 2001-June 2001):

- Undertake and document an inventory of key environmental aspects
- Identify 3-5 facilities with the most significant potential impacts and risks
- Add a sustainability checklist to the capital and operating budget request forms
- Coordinate and link the Environmental Plan with the EMS
- Coordinate and link the Environmental Plan with the other City plans
- Prepare an inventory of sustainability activities being undertaken
- Develop a "Sustainability Plan" for 2001
- Eliminate the practice of reducing operating budgets by the amount of savings achieved
- Create incentives to achieve efficiency gains and performance improvements
- Increase awareness and understanding at TIE of linkages between the EMS and sustainability
- Provide managers with training and tools for achieving environmental targets and objectives
- Develop an environmental management information system

Institutional structures are required to support the implementation of these action items and the EMS. Figure 5 depicts the proposed organization. The model is based on Corporate, Departmental and Divisional Leads that would coordinate the development and implementation of the system within their mandate.

The Commissioner, Works and Emergency Services, would be the Corporate Lead for the EMS and the Executive Director, Technical Services, would be Departmental Lead. Under the direction of the Divisional Lead, the Director, Environmental Services, EP &S would be responsible for coordinating the development and implementation of the EMS. In order to carry out this new mandate in an efficient and effective manner, EP&S will require significant additional resources in both the immediate and longer term to carry out the initial set of priority actions that have been identified here.

Many of the high priority items that would fall to EP&S for implementation could be carried out with outside assistance and an adequate budget for services. In the longer term, starting in Phase II, new staffing resources will be required in addition to securing outside assistance.

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2.0 Background

In September 1998, the City of Toronto under the auspices of the Environmental Task Force began to prepare an Environmental Plan. The Environmental Plan was submitted for approval in February 2000 and received Council approval of the Plan and the recommendations contained in it on April 12, 2000. The Environmental Plan identified a number of actions to be taken to improve the environmental performance of the City. One of these recommendations was the development of an environmental management system (EMS).

IndEco was retained in the spring of 2000 to assist the Environmental Planning and Support group (EP&S) of Environmental Services in developing a strategy for the implementation of an EMS for the City. The project was designed to:

- Introduce staff from across the City's departments to environmental management systems, by means of a training workshop held on May 30, 2000.¹
- Interview a selection of senior staff on what they saw as tasks required to implement an EMS, and priority tasks².
- Conduct a strategic planning session (held on July 11, 2000) with senior staff across City departments to review suggestions for priority actions from the interviews and solicit other views on actions and priorities for implementing an EMS³.

2.1 Training Workshop

The 2-hour training workshop was designed and delivered by IndEco. Its purpose was to introduce City staff from across the organization to the key concepts involved in an environmental management system, to indicate the components of an EMS that are already in place at the City, and to flag some of the missing components. The benefits of an EMS to industry as well as to the City corporation were described. Participants discussed what could be done within their own departments to develop the City's EMS as well as what they felt were the major issues to address when developing an EMS for the City. Issues such as amalgamation, resource constraints, and whether the EMS should be confined to the operations of the City corporation or take into account the entire City were debated.

Participants were each provided with a training report on EMS that contained the slides presented during the workshop as well as additional slides on ISO 14001. At

¹ Appendix 1 contains "An Introduction to Environmental Management", the training workshop report prepared by IndEco.

² Appendix 2 contains a summary report of the findings of the interviews that IndEco conducted.

³ Appendix 3 contains a list of actions that were reviewed at the strategic planning session.

the end of the workshop, participants were asked to fill out evaluation sheets on the workshop. Overall, the response from participants was very positive.

2.2 Select interviews

Staff of EP&S provided IndEco with a list of City staff to be interviewed from across the organization. The purpose of the interviews was to obtain information on the key issues that should be addressed in trying to develop and implement an EMS for the City, alternatives for addressing these issues, and a set of priorities for action for EMS development. The information obtained from the interviews was used to plan and focus the strategic planning session.

The interviews were conducted during June and early July 2000. IndEco conducted 9 interviews and several follow up meetings. The interview process generated a set of potential action items for discussion and evaluation at the strategic planning session.

2.3 Strategic planning session

The strategic planning session was a ½ day planning session facilitated by IndEco and held on July 13, 2000 with City staff from across the organization. Many staff who had been at the training workshop and participated in the interview process also attended the strategic planning session.

The purpose of the strategic planning session was to:

- develop a set of characteristics that describe what participants felt comprised the preferred EMS for the City;
- identify those characteristics that describe the characteristics of Toronto's current EMS; and
- develop an agreed upon set of priorities for 2001-2003 to move the EMS incrementally from the current state to the preferred state.

The initial set of action items that were generated from the interviews were discussed and modified as required by participants. Some items were eliminated or combined with others and some new items were added, producing a set of actions that were rated by importance and ease of implementation. Importance was judged based on how well the action moved the EMS from the present to the preferred state based on the characteristics identified for them. The final product of the session was a set of rated priorities for 2001-2003.

At the planning session, the relationships between environment and sustainability were raised by participants and discussed. Several participants recommended that EP&S broaden the purview of the EMS to encompass a sustainability management system (SMS). Environmental Services adopted this recommendation and asked

IndEco to broaden the scope of the EMS work to consider how an EMS could be developed within an overall SMS umbrella, taking into account the existing mandates, roles and responsibilities of departments across the City.

IndEco developed a sustainability framework for the SMS into which the EMS would fit. Based on the recommendations for priority actions that emerged from the strategic planning session and the sustainability framework that was developed, IndEco identified a set of priority actions to move the City forward on implementing the EMS.

This report documents the work that was carried out and presents recommended priority steps to be taken to implement the EMS in 2001-2003. The report concentrates on the priorities for immediate action in 2001. It also suggests a role for EP&S in developing and implementing the EMS and the environmental component of the SMS.

3.0 Environment and Sustainability

The concept of sustainability and sustainable development grew out of a recognition that the larger problems of society cannot be dealt with in an isolated way, but are part of an overall system that encompasses environmental, economic and social considerations. There are various views on how these interact (for example whether they are three interconnected, equally important aspects, or whether they are nested systems, with the economic system being part of the social system which in turn is a sub-system of the environmental system), and various types of definitions of sustainability, including political, economic, ecological and systems-based ones⁴.

Whatever definition one takes, or relationships among the component systems that one assumes, there is growing recognition that the component systems interact, and it is unlikely, if not impossible, for one of the systems to be viable if the other two are not, particularly from a human perspective.

3.1 Municipal leadership in sustainability

A number of municipalities in North America have begun to embrace the concept of sustainable development as a framework for the management of community growth and development. Several case studies of municipal sustainability initiatives are detailed below, followed by a brief consideration of their common trends and limitations.

3.1.1 Vision2020, Hamilton-Wentworth, Ontario

In 1992, the Regional Council of Hamilton-Wentworth adopted Vision2020⁵, a document detailing the sustainability goals for the Region. Based on the triple bottom line principle of sustainable development, the vision statement outlines 14 key areas of concern for the Region as determined through a process of public consultation. Specific goals and targets exist for each area of concern.

Vision 2020 related initiatives have included a “Sustainable Community Decision Making Guide” for regional staff, the formation of a Progress Team, and the publication of annual Indicators Report Cards. Additionally, many of the strategies and actions outlined in Vision2020 were included in the Regional Official Plan in 1995.

⁴ Tibbs, Hardin, “Sustainability”, Deeper News, January 1999.

⁵ Regional Municipality of Hamilton-Wentworth (RMHW). (2000) Vision2020. Accessed online at <http://www.vision2020.hamilton-went.on.ca> [00-10-17].

The Region uses 26 sustainability indicators to track its progress towards achieving the goals of Vision2020. All the indicators are empirically based and their only function is to measure the trends in various aspects of the 14 key theme areas identified in the community's vision statement (Table 1). The indicators range from traditional environmental measurements, such as sulphur dioxide emissions or total loading of nitrogen in the municipal harbour, to more socially oriented indicators, such as the percentage of 18-year-olds graduating from high school or the number of visits annually to historic sites, art venues and museums.

Using comparisons of annual measurements, with 1993 as a benchmark year in most cases, each indicator is rated as illustrating either a positive, negative or indiscernible trend. Specific goals have been determined for each theme area as part of Vision2020, and any significant progress towards that goal is seen as a positive trend.

Since 1995, the Region has published annual Indicator Report Cards showing the community's progress towards sustainable development. In 1998, 31% of the indicators showed a positive trend, 19% indicated a negative trend, and 50% failed to show either.

Hamilton-Wentworth received the Environment Achievement Award in 1994 from Environment Canada for its sustainability program efforts. Currently, a non-profit organization, called Action 2020, is being set up in order to take over the management of Vision2020 programs.

3.1.2 Sustainable City Program, Santa Monica, California

Santa Monica adopted its Sustainable City Program⁶ in 1994. Also based on the need to achieve economic, social and environmental sustainability, the program is driven by 8 guiding principles. The original plan grouped policies into 4 main areas (resource conservation, transportation, pollution prevention and public health, and community economic development), each with specific goals, targets and programs.

A 1996 progress report of the Sustainable City Program indicates that while many sustainability policies have been developed in various city departments, the overall approach has been rather piecemeal. There is a great need for the integration of the Sustainable City Program into the City General Plan and other municipal-wide policies.

⁶ City of Santa Monica. Santa Monica Sustainable City Program. Accessed online at: <http://www.ci.santa-monica.ca.us/environment/policy>. [00-10-17].

Table 1 - Sustainability Indicators used in Hamilton-Wentworth

Theme Area	Indicators
Local Economy	*Participation in the Labour Force
Agriculture and the Rural Economy	*Loss of Agricultural Area due to Official Plan Amendments
Natural Areas and Corridors	*Amount of Significant Natural Areas Protected
Improving the Quality of our Water Resources	*Total Loading of Nitrogen to Hamilton Harbour *Total Loading of Phosphorus to Hamilton Harbour *Water Consumption—All Uses (metered accounts) *Number of All Beaches Open for Swimming Days
Reducing and Managing Waste	*Total Residential Waste Generated Annually
Consuming Less Energy	*Per Capita Residential Electricity Consumption
Improving Air Quality	*Number of Annual Criteria Exceedances for Ozone *Sulphur-dioxide Concentration in Air *Average PM10 Concentration in Air *Number Respiratory Illness Hospital Visits per Year
Changing our Mode of Transportation	*Annual Transit Ridership per Capita *Number of Cars per Capita in Region
Land Use in the Urban Area	*Number of New Housing Starts in the Downtown Core
Arts and Heritage	*Number of Visits Annually to Historic Sites, Arts Venues and Museums
Personal Health and Well-Being	*Low Birth Weight Babies as % of Total Births *Hospitalization rate for Falls by Persons 65+ Years *Mortality due to Heart Disease
Safety and Security	*Robbery Rate *Number of Pedestrians and Cyclists Injured by Motor Vehicles
Education	*% of 18 Year Olds Receiving a High School Diploma *Number of Adult Education High School Diplomas Granted Annually
Community Empowerment	*Annual Shelter Occupancy Rate *Applicants Referred by the Volunteer Centre

(Source: Vision2020. Accessed online at <http://www.vision2020.hamilton-went.on.ca> [00-10-17])

3.1.3 Livable Tucson, Tucson, Arizona

Initiated by the Mayor and Council of Tucson in 1997, 'Livable Tucson'⁷ is a visioning program through which 17 key goals for the region have been developed. The vision is based on the need for a healthy community, economy and environment. Indicators have been developed to track progress towards each goal, and an interdepartmental team of municipal staff has been formulated to address various aspects of implementing the program.

3.1.4 Sustainability Plan, San Francisco, California

In 1997, the City of San Francisco adopted a Sustainability Plan⁸. The Plan, originally drafted through a collaboration of the city and community, adopts the Brundtland Report definition for sustainable development. While this definition implies the need for economic, social and environmental sustainability, the Plan focussed primarily on environmental topics, giving a series of goals, objectives and actions to be pursued.

Currently San Francisco's Sustainability Plan is under the remit of its Department of the Environment. Despite the development of a series of indicators in the original report, it does not appear as though many of the Plan's objectives or targets have been monitored for progress.

3.1.5 Trends in municipal sustainability initiatives

The above case studies are the result of a very brief research exercise and as such should not be taken as representative of all municipal initiatives towards sustainable development. That being said, these examples appear to have several common traits, including 'vision' statements, specific goals and objectives, and a set of indicators for tracking progress.

The major limitation of these sustainability programs or plans seems to be their implementation. While they are developed to include issues relating to all municipal departments, they are most often remitted to a single department (usually the Environment Department or equivalent) for implementation. As seen in the

⁷City of Tucson. (2000). The Livable Tucson Vision Program. Accessed online at: <http://www.ci.tucson.az.us/livable2.html>. [00-10-17].

⁸San Francisco Department of the Environment. (1997). The Sustainability Plan for the City and County of San Francisco. Accessed online at: <http://www.ci.sf.ca.us/environment/sustain/index.htm> [00-10-17].

Santa Monica case study, the result is often a ‘piece-meal’ approach to policy development and a lack of integration of the sustainability plans into other major municipal policies, plans, and programs.

3.2 Toronto’s sustainability roundtable

In December 1999, Toronto City Council adopted the recommendation to create a Sustainability Roundtable that was to be the successor to the Environmental Task Force. This recommendation emerged out of the Task Force’s “Proposed Governance Model for Advanced Environmental Decision Making for the City of Toronto” (July 6, 1999).

The purpose of the Sustainability Roundtable is to “promote actions based on sustainability in the City of Toronto, to advise Council on matters related to sustainability and to issue an annual ‘State of Sustainability Report’ to Council.” The Roundtable is composed of City Councillors, senior City staff, union representatives, and community representatives. The inaugural meeting of the Sustainability Roundtable was held in June 2000.

As described in the July 6, 1999 report, the mandate of the Sustainability Roundtable is to:

- Promote actions based on sustainability within the City of Toronto; sustainability being actions aimed at simultaneously achieving environmental health, economic vitality and social equity;
- Provide a forum to develop and bring sustainability leaders throughout the City and make recommendations about sustainability to City Council and the administration;
- Advise in strategic and sectoral planning;
- Develop methods that encourage public and grassroots input into sustainability planning by the City;
- Facilitate the use of a sustainability approach to achieve Council consensus on contentious issues;
- Support the Sustainability Lead in the development of a monitoring capacity for sustainability outcomes;
- Facilitate education and awareness of sustainability across the entire City; and
- Prepare an annual Roundtable Report on the “state of sustainability” to Council.

The Chief Administrative Officer (CAO) has designated Rosanna Scotti, Director, Strategic & Corporate Policy, as the Sustainability Lead. The Sustainability Lead is charged with the responsibility to coordinate the preparation of a Sustainability Plan and the incorporation of sustainability into the City’s policies, programs and decision-making processes.

3.3 Environmental management systems

3.3.1 What are they

An EMS is defined as: “That part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.”⁹

The EMS is a framework for an overall, strategic approach to an organization’s environmental policy, plans and actions that can be implemented across the whole organization, or in parts of the organization.

Although most organizations, including the City of Toronto and its predecessor municipalities, have components of an environmental management system, in recent years there is growing recognition of what an overall environmental management system ought to encompass. This recognition has been driven in part by the introduction of internationally recognized standards such as ISO 14001, and other comparable ones developed by the Canadian Standards Association (since replaced by ISO 14001), the British Standards Association, and the European Union (EMAS standard).

3.3.2 EMS Components

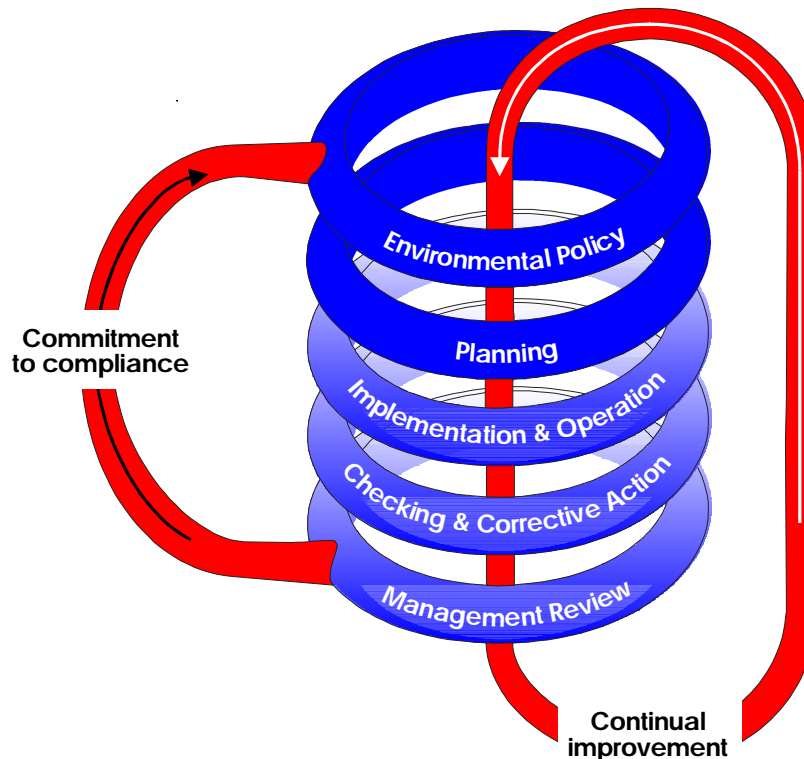
Figure 1- ISO 14001 Planning Framework, depicts a typical EMS planning framework. It is very similar to the common business management framework of “Plan, Do, Check, Advance”. Although there are differences among the various systems, they have much in common, essentially encompassing a formalized system for managing environment-related issues through the following components:

Environmental policy

A central component of an EMS, the environmental policy, is defined and endorsed by the organization’s top management. Typically, it is a public commitment by the organization to compliance with environmental legislation and regulations, to continual improvement, to pollution prevention and to the adoption of a framework for setting and reviewing environmental objectives and targets.

⁹ “Environmental management systems – Specification with guidance for use”, ISO 14001-96, National Standard of Canada, 1996.

Figure 1- ISO 14001 Planning Framework



Planning

There are several components of the planning process of an EMS, including:

- Development of an inventory of activities (environmental aspects) that might cause environmental impacts (positive or negative)

Knowledge of the environmental impacts associated with an organization's activities, products and services is critical to the development of relevant policies, objectives and targets in its EMS. This inventory can be compiled using a variety of methods, such as checklists, interviews, direct measurement, and previous reports. Generally, the potential environmental impacts that are considered include: emissions to air, releases to water, waste management, contamination of land, use of raw materials and natural resources, and other local environmental and community issues.¹⁰

¹⁰ Environmental management systems – Specification with guidance for use”, ISO 14001-96, National Standard of Canada, 1996.

- Development of a process for identifying environmental priorities

As part of the planning stage for an EMS, environmental priorities are developed based on an organization's inventory of environmental aspects, legal requirements, environmental policy and any internal performance criteria. These priorities then help to determine the objectives and targets set out in the EMS.

- Development of a process for setting measurable targets to address the priorities and identify corresponding actions to meet them, and monitor progress

Environmental targets and objectives are developed in line with the commitments in the environmental policy and should take into account the particular environmental impacts of the organization.

- Development of an approach for monitoring and tracking progress

Performance indicators are developed to measure progress towards meeting environmental targets and objectives.

Implementation

Implementation of an EMS includes assigning resources and responsibility for the implementation of the action items and implementing them. It also includes providing training and awareness education of employees and ensuring that employees achieve the level of competence required to perform their functions. In addition, it includes the development and implementation of a procedure for receiving, documenting, and responding to information requests from interested parties.

Checking and Corrective Action

This component is critical to the continual improvement of an EMS. It includes monitoring, measuring and documenting progress toward targets and objectives, establishing periodic audits of the EMS system, and a response system for identifying and rectifying nonconformance.

Management Review

Periodically reviewing the EMS itself, in terms of suitability and effectiveness, is critical to ensuring the continual improvement of the system. The organization's senior management should review the performance of the EMS and assess if there is any need for change in the system. Management can then identify options for improving the EMS and develop and implement an action plan.

A review of policies, objectives and procedures related to the EMS should be undertaken by the level of management that defined them. The review should include results from audits, the extent to which objectives and targets were met, the suitability of the EMS to changing needs, and concerns of relevant interested parties.

The various international systems, including ISO 14001 which has been adopted as the Canadian standard, have requirements relating to how the components of the EMS ought to be carried out, and be demonstrated to have been carried out, including:

- The commitment of senior management is required
- Staff responsible for carrying out actions under the EMS must be properly trained for undertaking these actions
- Priority and target setting ought to be connected to resource allocation
- Components of the EMS ought to be documented, and be made available to persons who need this information
- The public ought to be notified of key aspects of the EMS (which aspects vary across the systems)
- Internal and/or external audits must be conducted to demonstrate that all the components of the EMS are present and adequate.

Of course, many of these EMS requirements might well be seen as characteristics of any management system, and not particularly “environmental”. This is both the strength and the weakness of environmental management systems: on the one hand, they are based on common sense, and are consistent with other management systems (including, broadly, with the Quality Management Systems set out in ISO 9000). On the other hand, critics have argued that both systems fail to demand a high level of environmental performance, and that they are excessively bureaucratic. It is possible for someone to register to the ISO 14001 standard, for example, and still be a source of environmental contamination; the registration process evaluates the *management system* not *environmental performance*.

3.3.3 Benefits of EMS

The intent of these requirements, and the experience of organizations that have implemented compatible EMS systems, is that by requiring an organization to examine its energy and resource use, and its discharges and environmental effects, opportunities for reducing adverse environmental effects and enhancing positive environmental effects will be identified. Many organizations that report substantial economic savings to their organizations, as well as environmental improvements, have emerged from this process. Table 2 – Saving from Sustainability Measures identifies some of the savings achieved from the implementation of sustainability measures.

Other benefits to adopting an EMS include regulatory compliance and improving stakeholder value through good public relations, employee awareness and the adoption of environmental attributes as key values in the organization. Potential benefits to municipalities, such as the City of Toronto, resulting from the adoption of an EMS include:

- Reduction of liabilities and risk
- Financial savings and cost avoidance
- Improvement of the City's image and stakeholder relations
- Attraction of new investment to the City
- Enhancement of City employee morale
- Continual improvements in the City's environmental performance

Table 2 - Savings from Sustainability Measures

Company	Type of Initiative	Money Saved per Year (USD)
Baxter International ¹	Environment, Health & Safety	100.1M
Chicago Convention Centre ²	Energy Saving	1M
Rhone Poulenc ³	EMS Information Systems	>250,000
Ridgehaven Office Building, San Diego ²	Energy Saving	80,000
BlueCross BlueShield Headquarters, Oregon ²	Energy Saving	130,000
Bristol-Meyers Squibb ¹	Design for Environment	200,000
Milan Screw Products, MI ⁴	Pollution Prevention	20,000
Rover suppliers, UK ⁴	Pilot EMS	97,000 - 162,000
ABB Xiamen Switchgear Company, China ⁵	Cleaner Production and EMS	20,000
PT Timah Tbk, Indonesia ⁶	ISO 14001 registration	2M
Wolstenholme International Ltd., UK ⁷	EMS implementation	169,147
Mitsubishi Semiconductor Europe, GmbH ⁷	EMAS registration	107,000 - 317,000 (for selected projects)

¹ Global Environmental Management Initiative (GEMI). (1998) *Environment: A Value to Business*. Washington, DC: GEMI.

² Romm, J. (1999) *Cool Companies*. London, UK: Earthscan Publications Ltd.

³ Dray, Jim and Hepinstall, "Justifying the Costs of EMS: Piloting Lessons from Rhone-Poulenc", *Environmental Quality*, Winter 1996

⁴ *Business and the Environment' s ISO14000 update* February, 1997

⁵ "Cleaner Production reduces costs for Chinese manufacturer", *Business and the Environment' s ISO 14000 update*. Vol.IV. No. 11. November, 1998

⁶ "ISO 14001: Two years into implementation", *Business and the Environment' s ISO 14000 update* Vol.IV. No. 8. August, 1998

⁷ "How much does it cost to implement an EMS?" *Business and the Environment's ISO 14000 Update*. November 1996

3.3.4 How does an EMS relate to other management systems

Environmental Management Systems are intended to be analogous to other organizational systems, such as the financial management system, or the human resources management system. Further, they are intended to promote integration of environmental considerations into other aspects of the organization, just as financial considerations are not solely the domain of the finance department.

Where formal registration of an EMS is sought to conform to an international standard such as ISO 14001, the registrars will be looking for evidence of the integration of the EMS with the more traditional management systems of the organization. For example, they will be looking for evidence that proper hiring or training processes have been implemented (perhaps by the Human Resources department) to ensure staff are properly trained on the environmental policies of the organization, and how they affect their responsibilities. They will be looking for evidence that the resources required (including financial resources) to achieve the environmental targets and that the targets are not just empty promises or wishes.

Where an organization decides not to register to an international standard, the same level of quality as that required for the international standard will still be expected for the EMS by stakeholders. Integration of the Environmental Management System will be expected to make a significant contribution to the management of environmental issues, and not be just window dressing.

3.3.5 How does an EMS relate to sustainability

Good environmental performance is necessary, but not sufficient to ensure the long term health, or sustainability, of our organizations, our communities and our cities. An emerging ethos, referred to in business literature as "the triple bottom line" has been infiltrating the most environmentally progressive organizations world-wide. In particular, this refers to companies that are designing and implementing strategies to improve their environmental performance, their financial performance as well as social equity within their organizations in an integrated manner. An essential component of the ethos is to monitor and publicly report on an ongoing basis on how well the strategies are working.

From the point of view of this new ethos, an EMS is a necessary component of sustainability, but is not sufficient in order to maintain sustainability. What are also needed are management systems that deal with financial performance and social equity that are integrated with each other and the EMS and into what can be referred to as a Sustainability Management System (SMS). The SMS provides the

overall framework and system into which the sub-systems dealing with the environment, economic vitality and social equity fit.

3.3.6 Municipal leaders in EMS

Based on a brief overview of the literature and our knowledge of the area, there is a dearth of material on case studies of municipalities that are moving forward on the development of an EMS. Some municipalities have initiated EMS programs for certain facilities owned and operated by the municipality.

There are probably fewer examples of municipalities that have embarked on an EMS process for the entire corporation of the City. However, we have been able to track down two examples, in Tokyo, and in Seattle, and present them briefly below.

Tokyo

In 1997 Tokyo embarked on an action plan, the “Eco-Up Plan”, which set quantitative environmental goals for the City. In order to achieve those goals in a more effective manner, in 1998 the City decided to pursue ISO 14001.¹¹ The City expects to obtain ISO 14001 registration this year.

Toyko has identified the following benefits to the City of pursuing ISO 14001 registration¹²:

- To raise environmental awareness of staff members;
- To reduce operational costs of the government office;
- To increase environmental consideration of the activities by the City government;
- To improve the effectiveness of the existing EMS;
- To clearly present the attitude and determination of the government office to actively work for the establishment of a sustainable society;
- To promote environmental consideration by other stakeholders in the Metropolis in their activities; and
- To promote the acquisition of ISO 14001 by ward, city, town, and village offices located in the Metropolis, which would eventually lead to the development of efficient environmental administration by the entire Tokyo municipal government.

Toyko has identified its main barrier to obtaining registration and implementing the ISO 14001 process as being deciding how to apply and interpret the ISO standard requirements within the complex organizational framework of the City.

¹¹ “The ISO 14001 Initiative of Tokyo Metropolitan Government”, August 9, 2000, from <http://www.soc.titec.ac.jp/uem/observatory/iso-3.html>

¹² *ibid.*

Seattle

In 1996, the City of Seattle initiated the Environmental Management Initiative to improve environmental performance in daily operations. In 1999, City Council approved Seattle's Environmental Management Plan (EMP). Modelled on ISO 14001, "the City's EMP is based on the "plan-implement-check-improve" cycle and establishes:

- City-wide environmental and policy objectives based on an evaluation of environmental aspects and legal requirements (plan);
- A management structure and specific policies and procedures for achieving goals and objectives, including clearly defined roles and responsibilities and training and communication requirements (implement);
- Environmental indicators to monitor progress (check); and
- A process for continually improving environmental performance through management review and corrective action (improve)."¹³

The development of Seattle's EMS is taking place in two stages. Stage I is near completion. Stage I involved the development of an environmental policy, and general review of environmental aspects and impacts, and legal requirements. Based on this work, a set of goals and objectives were derived from which a set of issue-specific policies and procedures were developed to provide minimum standards for City operations and to clarify roles and responsibilities. These policies address the following issues:

- Compliance assessment
- Hazardous waste management
- Chemical use
- Hazard communication
- Abandoned waste
- Property transactions
- Site remediation (work not yet complete)
- Sustainable building (work not yet complete)
- Petroleum storage tanks
- Energy and water conservation
- Waste reduction and recycling
- Landscaping and grounds management
- Environmentally responsible purchasing
- Fleet management
- Emergency response (work not yet complete)
- Training (work not yet complete)

¹³ "City of Seattle Environmental Management Program Manual", Version 99-01, February 1998. All material here dealing with Seattle is based on this report.

The City also established environmental performance indicators toward meeting the established objectives. Numeric targets were set in two areas: regulatory compliance and the use of fuels in City fleet vehicles. In addition, the City is planning to collect and analyze data to determine whether the trends in the City's waste stream and use of materials energy, water and chemicals are improving.

The second stage will begin as individual City departments undertake a more thorough review of environmental aspects and impacts and legal requirements specific to their operations and develop procedures to implement the EMP at the departmental level. This review will include how they will meet performance targets. Under this approach, departments retain their existing responsibilities for regulatory compliance and manage their daily operations while the EMP provides a city-wide framework for departments to meet city-wide standards.

As of 1999, the Office of Environmental Management was established to oversee implementation of the EMP. Key responsibilities include assisting individual departments to:

- develop procedures to meet city-wide policies and objectives;
- collect data;
- track environmental trends; and
- manage a program to make City facilities more energy and water efficient.

An Environmental Oversight Committee consisting of elected officials, City department directors, and community representatives will provide policy direction and accountability.

3.3.7 City of Toronto progress on EMS

In developing the City of Toronto's EMS, the City will not be starting from scratch. Many of the components of an EMS have already been developed. For example, the City's Environmental Plan is comprised of a set of approved recommendations for environmental action by the City, eight of which have been approved for implementation this fiscal year. The City also has developed several numeric targets for environmental performance such as a 50% waste diversion target for 2006, a 20% carbon dioxide reduction target for 2005, a 25% green energy procurement target for 1999, and a city-wide energy efficiency target with no set date¹⁴. In addition there are numerous program initiatives across City departments such as:

- Corporate Smog Alert Response Plan
- Bicycle lane networks
- Sustainable transportation initiatives
- Natural Heritage Strategy
- Better Buildings Partnership

¹⁴ This list of targets is not exhaustive, but illustrative of the range of targets that does exist.

- Corporate Purchasing Policy for low sulphur gasoline and diesel fuel

The above list is by no means exhaustive or representative of the myriad of environmental initiatives underway in the City. The City does not have a complete inventory of the environmental initiatives underway and therefore is unable to track, monitor, or report on them in a consistent fashion. This is symptomatic of the way the EMS is currently being developed in the City. While the initiatives may all be worthwhile, they have been developed in a piecemeal, non-integrated fashion and are not tracked in a systematic way.

A more complete picture of the Toronto' current EMS is discussed in the chapter, An EMS for the Corporation of the City of Toronto.

4.0 Sustainability Framework for the City of Toronto

The Sustainability Framework suggested here for the City of Toronto uses the City's existing institutional framework as a foundation. It flows from the City's Mission Statement, Vision, and Goals and respects existing mandates, roles and responsibilities of City departments and divisions. It is also based on a review of some of the leading international sustainability frameworks, to ensure that Toronto can maintain its position as a leader in sustainability matters, as well as the feedback received from the training workshop, interviews and strategic planning session that IndEco carried out with City staff.

4.1 Sustainability frameworks in other jurisdictions

We have carried out an overview of three sustainability frameworks: the Coalition for Environmentally Responsible Economies (CERES), the World Business Council for Sustainable Development, and the President's Council on Sustainable Development.

4.1.1 CERES Principles

The CERES Principles promote environmentally responsible corporations by asking them to support principles of environmental stewardship and "seek profit only in a manner that leaves the Earth healthy and safe".¹⁵ Companies are asked to endorse the following principles and to make consistent, measurable progress toward implementing them¹⁶:

- Protection of the biosphere
- Sustainable use of natural resources
- Reduction and disposal of waste (minimize waste creation, recycle where possible and dispose of remaining waste safely)
- Wise use of energy through use of environmentally safe and sustainable sources
- Risk reduction to minimize health and safety risks to our employees and communities in which we operate
- Marketing safe products and services
- Damage compensation for harm we cause to the environment
- Disclosure to employees and the public

To date the Coalition represents more than 10 million people; the Coalition members manage over US\$ 150 billion in invested assets. Some key members include: Polaroid, Bethlehem Steel, Ben and Jerry's Homemade, and the Sun Company.

¹⁵ "The CERES Principles", <http://iisd.ca/educate/learn/ceres.htm>

¹⁶ Adapted from "The CERES Principles", *ibid.*

4.1.2 The President's Council on Sustainable Development

The President's Council on Sustainable Development is a US multi-stakeholder advisory panel charged with the responsibility of coming up with sustainability action measures for the US. It is the only presidential or federal advisory panel in the United States charged with recommending policies across the full spectrum of economic, environmental and social policy issues. In its first report in 1996, *Sustainable America*, the Council came up with a set of sustainability goals for the country¹⁷:

- Health and the environment – ensure every person enjoys the benefits of clean air, clean water, and a healthy environment at home, at work and at play
- Economic prosperity
- Equity
- Conservation of nature
- Stewardship
- Sustainable communities
- Civic engagement
- Population stabilization
- International responsibility
- Education

The advisory panel reached consensus on a number of strategies for environmental management systems, climate change, sustainable community development in rural and metropolitan areas and on the international scene.

4.1.3 World Business Council for Sustainable Development

The World Business Council for Sustainable Development (WBCSD) is a coalition of some 140 international companies united by a shared commitment to sustainable development which it defines as environmental protection, social equity and economic growth.¹⁸ The WBCSD has developed a set of objectives to be met in order for a company to become 'eco-efficient'. "A company wanting to be eco-efficient should strive to:

- reduce the material intensity of its good and services
- reduce the energy intensity of its goods and services
- reduce the dispersion of any toxic materials
- enhance the recyclability of its materials
- maximize sustainable use of renewable resources

¹⁷ Adapted from "Towards a Sustainable America: Advancing Prosperity, Opportunity, and a Healthy Environment for the 21st Century Final Report of the President's Council on Sustainable Development", The President's Council on Sustainable Development, May 1999.

¹⁸ <http://www.wbcd.ch/whatis.htm>

- extend the durability of its products
- increase the service intensity of its goods and services.”¹⁹

The WBCSD has undertaken to develop a set of eco-efficiency indicators to measure and monitor progress. Work is ongoing.

4.2 Proposed Sustainability Framework for Toronto

The Sustainability Framework that we are proposing the City of Toronto adopt is shown in Figure 2. This framework identifies the placement of the proposed sustainability management system, in the context of other municipal initiatives and systems. The sustainability framework illustrates that the Sustainability Management System (SMS) is led by a series of sustainability objectives, which are themselves derived from the community’s goals, the municipal government’s guiding principles and mission statement, and ultimately, the City of Toronto’s vision statement.

The framework includes and flows sequentially from Toronto City Council’s Strategic Plan – Part I. From the work that the City has already done on sustainability, a definition of sustainability has been implied. However, it is suggested that Toronto adopt a formal and explicit definition of sustainability, namely that of the Brundtland Commission²⁰, as a starting point for its sustainability framework. The definition is:

“Sustainable development is development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs.”

The Sustainability Framework that we are proposing also includes and is consistent with the City of Toronto’s Vision statement which is:

“Toronto is a caring and friendly City.
Toronto is a clean, green and sustainable City.
Toronto is a dynamic City.
Toronto invests in quality of life.”

The Sustainability Framework also includes and flows from Toronto’s Mission Statement that states that the government of the City of Toronto “champions the

¹⁹ *ibid.*

²⁰ Harlem Brundtland, the Prime Minister of Norway, chaired the World Commission on Environment and Development, created by the United Nations in 1983. The Commission’s landmark report, *Our Common Future*, published in 1987, often referred to as the Brundtland report, introduced the concept of sustainability into public debate and the definition of sustainable development in the report has been widely adopted around the world.

economic, social and environmental vitality of the City.” In addition it includes and flows from the principles that will be used to guide the Mission Statement²¹:

- Advocacy
- Community participation
- Equity
- Effectiveness – set and accomplish objectives, pursue innovative approaches, safeguard public assets, and make efficient use of resources
- Leadership
- Partnerships
- Sustainability – integrate environmental, social, economic and fiscal perspectives into our actions

Of note are the principles of effectiveness and sustainability since they provide clear direction on what the sustainability framework should be and what the key components of Toronto’s EMS should be.

As well, the Sustainability Framework encompasses and flows from the set of community goals that have been derived by the City based on the Mission Statement²²:

- Social development
- Economic vitality
- Environmental sustainability – “environmental balance and integration of environmental considerations into our social and economic activity”
- Good governance
- City building

Based on the above, the feedback we received from the training workshop, interviews and planning session and our knowledge of sustainability principles, we have developed the following set of Sustainability Objectives for the City of Toronto:

- Strive for excellence in environmental, social and economic practice
- Adopt a “precautionary approach” to decision-making
- Adopt a systems approach
- Instill an attitude of innovation
- Create new models
- Stage change over time
- Provide education and training
- Monitor and report on progress

²¹ Adapted from Toronto City Council’s Strategic Plan –Part I;
http://www.city.toronto.on.ca/strategic_plan/strategic_plan.htm

²² *ibid.*

Below we discuss each of the objectives and focus on its environmental component. Work on the social and economic components of each objective was outside the scope of this report.

4.2.1 Strive for excellence in environmental, social and economic practice

Toronto adopts an approach to performance that goes beyond compliance and involves continual improvement, and demonstration of measurable progress.

4.2.2 Adopt a “precautionary approach” to decision-making

The precautionary approach is an approach to policy that has been adopted by the European Commission and has the support of many environmental organizations. “It holds that the environment should not be left to show harm before action is taken to protect it, because by then irreparable damage may have been done - as a precaution, it’s safer to behave as if the problem is real and serious from the outset.”²³

In order to implement this approach, Toronto recognizes in all its decision-making that sustainability has intrinsic value and therefore, the Corporation will seriously consider initiatives dealing with environmental, social and economic practice that move the City closer to sustainability even where complete data and scientific certainty are not available.

4.2.3 Adopt a systems approach

The City views its environmental, social and economic mandates as going beyond “keeping its own house in order”. It includes the overall interests of its citizens and make use of its influence with its stakeholders to promote sustainability in the City.

4.2.4 Instill an attitude of innovation

Toronto will create an appropriate environment within the City organization to motivate all staff to continually improve environmental, social and economic performance within their own departments, within the entire organization and in the City itself.

4.2.5 Create new models

Creating new models involves creating pilots and demonstrations of new approaches, programs and activities that may not be economic in today’s existing business or political climate. This is a form of insurance against major unforeseen

²³Tibbs, Hardin, “Sustainability”, Deeper News, Global Business Network, January 1999.

environmental, social or economic problems enabling the City to respond more quickly. It provides valuable learning and training tools and stimulates further innovation for continual improvement.

4.2.6 Stage change over time

Staging change over time removes the necessity to accomplish everything at once. There are resource and time constraints and competing priorities. A transition to sustainability will be a change that occurs progressively over time. The City can continue to operate in a traditional way while it invests in and steadily introduces new sustainable approaches to its operations and spheres of influence.

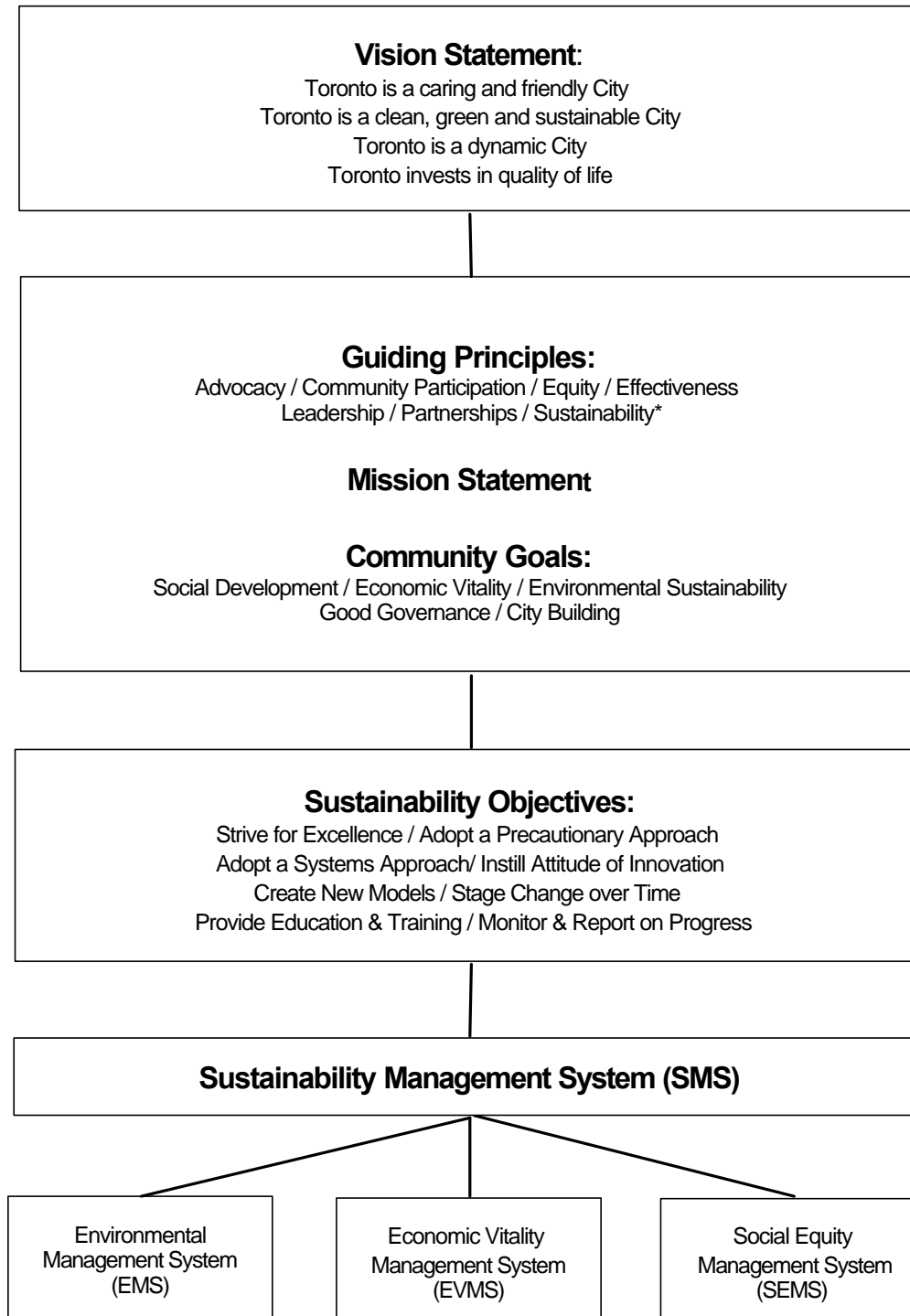
4.2.7 Provide education and training

In order to achieve continual improvement and progress toward sustainability, ongoing staff education and training will be important. Staff need to have opportunities to upgrade skills and knowledge related to sustainability.

4.2.8 Monitor and report on progress

Regular monitoring and public reporting on progress is important for the City to keep its stakeholders informed on how well the City is meeting its sustainability objectives and targets. It creates an opportunity for involvement of community groups and citizens in dealing with sustainability issues. It helps to assess the status of achievements and create opportunities to discuss ways to improve. The development of sustainability indicators can help to simplify the monitoring and reporting process.

Figure 2—Proposed Sustainability Framework for City of Toronto



*Sustainability is defined as meeting the needs of the present generations without compromising the ability of future generations to meet their own needs.

5.0 An EMS for the Corporation of the City of Toronto

The City of Toronto is a world leader in environmental protection. However, the City lacks a coordinated and integrated approach to the management of its environmental affairs. While possessing many of the necessary components of an EMS, the corporation of the City does not have a functional environmental management system.

A well functioning environmental management system would provide the organizational tools and help to free up the necessary resources to improve the environmental performance and health of the City. It would reduce potential environmental liabilities and risks and City operating costs, facilitate compliance with laws and regulations, and assist in attracting local and international investment to Toronto.²⁴

5.1 Environmental organizational structure of the City corporation

Responsibility for environmental matters is delegated to a number of environmental departments across the City structure. Some examples of departmental responsibilities include:

- Community and Neighbourhood Services - Toronto Public Health
- Works and Emergency Services - Solid Waste, Environmental Services, Water and Wastewater
- Urban Development Services - environmental aspects of the Official Plan;
- Economic Development, Culture and Tourism - Parks and Recreation, green tourism and green economy matters
- Corporate Services – environmental aspects of facilities and real estate, incidents and accidents tracking, and fleet management
- Finance – accounting and budgeting related to environmental expenditures

There are also a number of Council Committees that deal with related environmental matters (e.g., Sustainability Roundtable, Works Committee, Planning and Transportation Committee, Economic Development and Parks Committee) As well, there are several organizations that provide overall direction to City departments. For example the CAO's Office is charged with overall responsibility for sustainability and the Healthy City Office. The Toronto Inter-departmental Environmental Team (TIE) is responsible for developing and overseeing the cycle of environmental planning and management of the Corporation and serves as a review body for bringing forward environmental initiatives to the senior management of the Corporation.

²⁴ For a detailed discussion on benefits to the City of Toronto in having an integrated EMS, see section 3.3.

The Environmental Planning and Support group (EP&S) of the Environmental Services department in the Technical Services Division of Works and Emergency Services is charged with the responsibility of developing an implementation strategy for an EMS for the City. This coordinating and integrating task is a challenging one for a small line function group embedded within a division of the Corporation’s organizational structure.

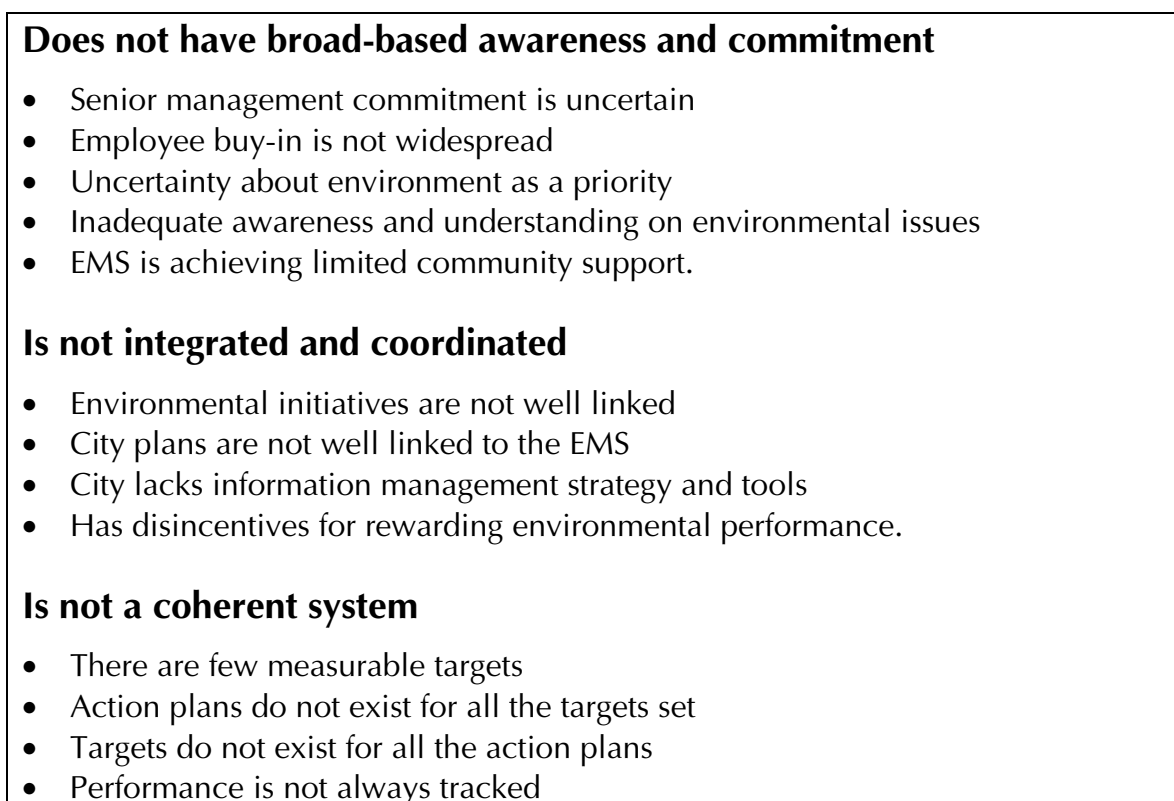
5.2 Present State of Toronto’s EMS

Based on the feedback received from the training workshop, the interviews and the follow up meetings from the interviews, IndEco developed a draft statement on the Present State of the City of Toronto’s EMS. This draft statement was discussed and reviewed at the strategic planning session and adopted at the session by participants as a reasonable snapshot of the current state of Toronto’s EMS.

As indicated in Figure 3, Toronto’s current EMS has the following general characteristics:

- It does not have broad-based awareness of or commitment to it
- It is not integrated, coordinated or coherent
- It underachieves in improving environmental performance and in using resources efficiently.

Figure 3 – The Present State of Toronto’s EMS



- There is incomplete and inconsistent data
- No consensus on EMS extending beyond the City as a corporation.

Underachieves in improving environmental performance

- There are variable or unknown levels of compliance
- The EMS is not a major contributor to compliance, limiting liability exposure, reasonable care or due diligence
- Environmental initiatives do not always include a business case.

Underachieves in encouraging efficient resource use

- There are inadequate resources to invest in efficiency and conservation
- The EMS is underachieving in contributing to operational efficiencies and cost savings
- The EMS is not making a direct contribution to increasing the City's credit worthiness.

5.3 City of Toronto's Preferred State for the EMS

Based on the feedback received from the training workshop, the interviews and the follow up meetings from the interviews, and good EMS design principles (e.g., ISO 14001), IndEco developed a draft statement on the Preferred State of the City of Toronto's EMS. This draft statement was discussed and reviewed at the strategic planning session and adopted at the session by participants as a reasonable starting point for the preferred state of Toronto's EMS. The preferred state represents the ideal situation – the set of broad goals to achieve. It sets the overall direction for the development of the EMS.

As indicated in Figure 4, Toronto's preferred EMS has the following general characteristics:

- It has broad-based awareness of or commitment to it
- It is integrated, coordinated and coherent
- It improves environmental performance effectively and uses resources efficiently.

Figure 4 - The Preferred State

Broad-based awareness and commitment

- Provides adequate staff training
- Has senior management commitment
- Has broad employee buy-in
- Garners widespread external support
- Enhances community involvement and corporate image
- Provides support for Toronto as a world leader.

Integrated and coordinated

- Has clear links to the City's other plans: Strategic Plan, Official Plan, Environmental Plan, Economic Plan and Social Plan.
- Has clear links to all major departments, TIE, CAO and Sustainability Roundtable
- Has clear links to annual budgeting process and MYBP
- Helps to recognize City staff for excellence in environmental performance.

Coherent system

- Has an environmental policy
- Has measurable targets that flow from the policy
- Identifies, monitors and tracks specific actions and training to achieve targets
- Identifies all environmental activities (aspects) and their impacts
- Eliminates disincentives to improving performance
- Improves environmental and overall EMS performance continually
- Meets international standards for EMS.

Improves environmental performance

- Is directed to City's environmental priorities
- Limits liability exposure
- Demonstrates reasonable care and due diligence
- Helps to ensure compliance with environmental laws/regulations
- Improves health of individuals who live, work and play in Toronto.

Encourages efficient resource use

- Helps achieve operational efficiencies and cost savings
- Contributes to achieving a high credit rating for the City
- Adequate resources are provided to maintain and enhance performance

5.4 Actions and priorities

5.4.1 The EMS Model

The type of EMS model to adopt was discussed during the training workshop, the interviews and the strategic planning session. While complete agreement was not reached, there was a leaning toward an EMS model with the following characteristics:

- **A formal corporate EMS is necessary** - The corporate EMS requires a process for identifying environmental priorities, setting targets, identifying actions to meet those targets, monitoring, tracking and reporting on progress toward achievement of targets, and a formalized Environmental Management Information System to facilitate tracking, reporting and continual improvement
- **The EMS needs to be accommodating and flexible** - The requirement to monitor and measure the overall performance of the EMS, while maintaining the existing flexibility and autonomy of departments to continue to implement environmental components of the corporate EMS and to develop their own EMS (e.g., for specific facilities) to meet their respective mandates, needs to be built into the corporate EMS
- **The EMS should help to set corporate environmental priorities** – The EMS should enhance the justification for environmental action by the Corporation through better tracking of data, information and performance

After the planning session the above model was discussed with Environmental Services and was adopted by Environmental Services as the basis for developing priority actions for the EMS.

5.4.2 ISO 14001 Registration

There was some limited discussion on whether or not the City should pursue ISO 14001 registration for the EMS during the training workshop, interview process, and strategic planning session.

There are both pros and cons to seeking registration. The pros include²⁵:

- International recognition for excellence in environmental management
- Enhancement of Toronto's reputation as an environmental leader
- A city government can, from a position of strength, promote replication of ISO 14001 registration to other stakeholders in the city, particularly the private sector where an effective EMS can have far-reaching and long-term impacts

²⁵ See "Why ISO?" at <http://www.soc.titech.acjp/uem/iso14001/why.html> for a discussion of ISO 14001 registration benefits.

- It helps to motivate and provide a focal point for environmental action by the City, providing a basis for setting and monitor progress toward achievement of priorities and allocating resources for environmental action

The cons include:

- The need to provide extensive documentation and document management on all aspects of the EMS and to keep the documents current on an ongoing basis
- ISO 14001 requirements can be or perceived to be highly bureaucratic
- It is more costly and time consuming to obtain registration than to have an EMS that meets ISO 14001 requirements or their spirit and intent
- A long term commitment to 14001 is required in order to maintain the registration certificate, which expires every 2-3 years

No consensus was reached on the pursuit of 14001 registration and Environmental Services has decided not to pursue ISO 14001 registration at this time.

5.4.3 The planning process for setting action priorities

IndEco developed a set of proposed actions for the development of the EMS based on the suggested actions that emerged as a result of the interviews and follow up meetings. These items were tabled for discussion at the strategic planning session where participants reviewed and modified them, as required, and rated each proposed action based on its importance in achieving the preferred state for the EMS and the ease of implementation of the action. The actions, while having merit as environmental actions in and of themselves, were evaluated strictly for the purpose of assisting in the development and implementation of the EMS. Appendix 3 contains the original ratings conducted at the strategic planning session.

The results of the rating from the strategic planning session were reviewed and updated. This was necessary to reflect the adoption of the recommendation from the session that the Corporation develop a sustainability management system (SMS) and the subsequent work that was done by IndEco to place the EMS within the context of the larger SMS. As well, the update was necessary to reflect changing City priorities. The same evaluation process, as was used in the strategic planning process as described above, was employed in the review and update of the priorities for EMS implementation.

5.4.4 Priorities for action

Based on the review and updating of the priorities for action that emerged from the strategic planning session, a revised set of priorities was generated. The revised set of recommended priority actions for developing and implementing the EMS is displayed in Table 3.

Table 3 groups the priority actions according to the sustainability objectives that they will help to achieve. The table also shows what characteristics of the preferred state of the EMS the action is designed to achieve and the relevance of the action to EMS development. In addition, the table shows who is responsible for implementing or coordinating the implementation of the priority action.

The priority of the action is shown by the start of the implementation. An action whose implementation starts in Phase I of EMS implementation (Jan2000 - Jun2001) is a high priority; an action that starts in Phase II of EMS implementation (Jul2001- Jun2002) is a medium priority; and an action that starts in Phase III of EMS implementation (Jul2002-Dec 2003) is a low priority.

The priority actions depicted here are not fully comprehensive or exhaustive; they represent a good starting point for Toronto to begin to implement an EMS over time. These priorities should be tracked and reviewed on an ongoing basis, and modified and updated as required. This is consistent with a system for continual improvement.

For simplicity only two groups within the City corporation were assigned responsibility for implementing priority actions: "EP&S", and "other departments". "Other departments" refers to any other group within the corporation other than EP&S. Being assigned the responsibility means that the responsibility will either be carrying out the action required, or in most instances, coordinating the implementation of the action across one or more departments of the City. In cases where EP&S is not assigned responsibility, EP&S may be involved in providing input, especially where there is data or information that must be fed into the EMS monitoring, tracking or reporting systems.

Some priority actions relate to the implementation of the Sustainability Management System. However, only the environmental component of that work is considered part of the EMS. The economic vitality and social equity components²⁶ have been excluded from the EMS.

²⁶ See the economic vitality and social equity components discussed in chapter 4.

Table 3 – Recommended Priority Actions for Developing and implementing an EMS

	Phase 1	Phase 2	Phase 3	Relevance topreferred state	Relevance to SMS development	Responsibility	
	Jan 2001- Jun 2001	Jul 2001 – Jun 2002	Jul 2002 – Dec 2003			EP&S	Other depts.
Strive for excellence in environmental and social practice							
Undertake and document inventory of key environmental aspects (PCBs, asbestos, underground storage tanks)	X			Coherent System	A high importance item that prototypes how to document aspects		X
Inventory and document aspects and impacts of City-owned contaminated lands on property by property basis		X	X	Coherent System	A medium importance item that prototypes how document impacts		X
Identify 3-5 City facilities with most significant potential impacts and risks	X			Coherent system; improve environmental performance	Demonstrate how to evaluate and set priorities		X
Conduct compliance audit of 3-5 facilities		X		Coherent system	Prototype compliance audit process on major facilities		X
Develop compliance measures and compliance tracking system		X	X	Improves environmental performance	Prototype development of targets and measures		X
Implement compliance measures and compliance tracking system		X	X	Improves environmental performance	Prototype tracking systems		
Develop and action plan for the existing City CO ₂ reduction target		X		Coherent system	Demonstrate connection between targets and plans and resource commitments		X
Adopt a “precautionary approach” to decision making							
Add sustainability checklist to capital and operating budget request forms	X			Integrated & coordinated	Demonstrate integration of environmental considerations into larger corporate function	Env. Comp- onent	X
Include sustainability considerations in MYBP		X		Integrated & coordinated	Demonstrate integration of environmental considerations into larger corporate function	Env. Comp- onent	X

Table 3 Continued on following page.

Table 3 – Continued

	Phase 1	Phase 2	Phase 3	Relevance to preferred state	Relevance to SMS development	Responsibility	
	Jan 2001- Jun 2001	Jul 2001 – Jun 2002	July 2002 – Dec 2003			EP&S	Other depts.
Adopt a systems approach							
Coordinate and link the Environmental Plan with the EMS	X			Integrated & coordinated	Demonstrate integration of environmental activities and tracking and monitoring of actions	X	
Coordinate and link the EMS with other City Plans	X			Integrated & coordinated	Essential to formal articulation of environmental policy	X	
Prepare an inventory of sustainability activities being undertaken	X			Coherent system	Essential to inventory of aspects and priority setting	Env. Component	X
Add sustainability considerations to the high priority consideration of dealing with immediate safety issues for capital expenditures			X	Integrated & coordinated	Lower priority issue addressed as part of overall implementation	Env. Component	X
Develop “Sustainability Plan” for 2001	X	X		Integrated & coordinated	Implement actions of the SMS plan	Env. Component	X
Develop an Environmental Management Information System	X	X	X	Broad-based awareness and commitment, integrated & coordinated, coherent system	Essential to monitoring, tracking and continually improving performance	X	
Instill an attitude of innovation							
Eliminate the practice of reducing operating budgets by the amount of savings achieved	X			Coherent system	Assist in connection between environment policy and job responsibilities		X
Create incentives to achieve efficiency gains and performance improvements	X			Broad-based awareness & commitment; integrated & coordinated	Assist in connection between environmental policy and job responsibilities		X
Increase awareness and understanding of linkages between EMS, sustainability, and TIE	X			Broad-based awareness & commitment	Build senior management commitment	X	
Education and outreach							
Develop communication plan for reaching employees		X		Broad-based awareness & commitment	Essential to achieving continual improvement		X
Develop awareness initiatives for employees		X		Broad-based awareness & commitment	Addresses training requirements		X
Training and tools for managers	X			Broad-based awareness & commitment	Addresses training requirements		X

5.4.5 Priorities for immediate action

Table 4 contains the list of 12 priorities for immediate action for implementation during the period of January 1, 2001 to June 30, 2001. The priorities in the table are not presented in order of importance.

Undertake and document an inventory of key environmental aspects

This priority involves undertaking an inventory of key environmental aspects in all City-owned or operated facilities. The key environmental aspects include PCBs, asbestos, and underground storage tanks. Discussion of this priority at the strategic planning session revealed that this action is relatively easy to do; the work has already begun; and there are resources available. This priority contributes to the coherence of the EMS and prototypes how to document environmental aspects.

Identify 3-5 facilities with the most significant potential impacts and risks

This priority involves City staff reviewing City-owned or operated facilities and selecting 3-5 facilities from among them that would best exemplify significant potential impacts and risks. This process would prototype how to evaluate and set environmental priorities and contributes to the coherence of the EMS and improvements in environmental performance.

Add a sustainability checklist to the capital and operating budget request forms

This priority involves the development of an easy to fill out checklist to be added to the existing capital and operating budget request forms. The checklist would cover economic vitality, social equity and environmental impact implications. In the case of the environmental component, the checklist, for example, could simply be one question with a "yes" or "no" box, asking whether the expenditure would have potential environmental impacts, and space below to indicate briefly what the impacts were expected to be. The environmental component of the sustainability checklist would form part of the EMS. This priority contributes to the integration and coordination objective of the preferred EMS and demonstrates the integration of environmental considerations into the larger corporate function.

Coordinate and link the Environmental Plan with the EMS

This priority involves developing an environmental action monitoring and tracking system for the Environmental Plan recommendations that were approved for implementation in 2000 as well as those that would subsequently be approved. This priority contributes to the achievement of a coordinated and integrated EMS and prototypes a monitoring and tracking system for environmental actions. This priority is to be led by Environmental Planning & Support.

Coordinate and link the Environmental Plan with the other City plans

This priority involves linking the Environmental Plan with the other City Plans (Strategic Plan, Social Plan, Economic Plan, Official Plan). This will help to ensure that the EMS is integrated and coordinated with other mainstream City activities and is essential for the articulation of formal environmental policy.

Prepare an inventory of sustainability activities being undertaken

This priority involves undertaking an inventory across all City departments to identify the sustainability activities being undertaken by the City. The inventory would be documented and made available to all City staff over the Intranet. The inventory of environmental activities would form the list of action items in the EMS. The environmental component of the inventory contributes to the coherence of the EMS and is essential to the inventory of aspects, and priority setting, and is to be led by EP&S.

Develop an environmental management information system

Especially in a large corporation such as the City of Toronto, a formalized, computerized Environmental Management Information System (EMIS) that is accessible across departments is essential to the effective functioning of the EMS. It will simplify coordination, documentation, communication and reporting across departments and divisions and at the corporate level. This priority helps to achieve broad-based awareness and commitment, integration and coordination and a coherent EMS. It is essential to continually improving performance and to setting and achieving realizable targets and objectives. The EMIS should start off small, addressing the other 11 priorities for immediate action, and then build organically and incrementally over time as the EMS moves from Phase II to Phase III implementation. This priority should be led by EP&S.

Develop a “Sustainability Plan” for 2001

The Sustainability Roundtable has a mandate to prepare a Sustainability Plan and an annual Roundtable Report on the state of sustainability across the entire City. This priority will involve setting out the framework, goals, objectives and content of the plan and the Report and the linkages with the other City plans and systems. The environmental component of the Plan for 2001 would be coordinated by EP&S. This priority contributes to the development of an integrated and coordinated EMS and helps to implement the SMS.

Eliminate the practice of reducing operating budgets by the amount of savings achieved

This priority involves eliminating the disincentive to reduce operating budgets by the savings achieved so that staff are not penalized for efficiency gains. This will encourage savings and reinvestment back into the areas that achieve improvements. This priority contributes to a coherent EMS and makes a clear

connection between environmental policy, and job responsibilities and performance.

Create incentives to achieve efficiency gains and performance improvements

The achievement of this priority will involve the design and implementation of incentives to achieve efficiency gains and performance improvements that also enhance environmental performance. This priority contributes to broad-based awareness and commitment, and an integrated and coordinated EMS. It helps to provide a clear link between environmental policy, and job responsibilities and performance.

Increase awareness and understanding at TIE of linkages between the EMS and sustainability

TIE is comprised of senior management from across the corporation that review environmental matters. It is therefore important for this group of managers to be aware of and have a clear understanding of the linkages between the EMS and sustainability. This priority will involve, at minimum, briefing TIE on the linkages and could also involve the development of a strategy for coordination between TIE and the SMS. This priority contributes to broad-based awareness and helps to build senior management commitment to the EMS. EP&S would lead the coordination of this priority.

Provide training and tools for managers

In order to set and meet appropriate environmental objectives and targets, and achieve continual improvement in environmental performance, it is essential to provide proper training and tools for managers. This priority takes a first step forward to provide such training, and contributes to broad-based awareness and commitment. It would involve increasing awareness and understanding across the organization of the implementation of the priorities for immediate action.

Table 4 – Priorities for immediate action

	Relevance to preferred state	Relevance to SMS development	Responsibility	
			EP&S	Other depts.
Strive for excellence in environmental and social practice				
Undertake and document inventory of key environmental aspects (PCBs, asbestos, underground storage tanks)	Coherent System	A high importance item that prototypes how to document aspects		X
Identify 3-5 City facilities with most significant potential impacts and risks	Coherent system; improve environmental performance	Demonstrate how to evaluate and set priorities		X
Adopt a “precautionary approach” to decision making				
Add sustainability checklist to capital and operating budget request forms	Integrated & coordinated	Demonstrate integration of environmental considerations into larger corporate function	Env. Component	X
Adopt a systems approach				
Coordinate and link the Environmental Plan with the EMS	Integrated & coordinated	Demonstrate integration of environmental activities and tracking and monitoring of actions	X	
Coordinate and link the EMS with other City Plans	Integrated & coordinated	Essential to formal articulation of environmental policy	X	
Prepare an inventory of sustainability activities being undertaken	Coherent system	Essential to inventory of aspects and priority setting	Env. Component	X
Develop “Sustainability Plan” for 2001	Integrated & coordinated	Implement actions of the SMS plan	Env. Component	X
Develop an Environmental Management Information System	Broad-based awareness and commitment, integrated & coordinated, coherent system	Essential to monitoring, tracking and continually improving performance	X	
Instill an attitude of innovation				
Eliminate the practice of reducing operating budgets by the amount of savings achieved	Coherent system	Assist in connection between environment policy and job responsibilities		X
Create incentives to achieve efficiency gains and performance improvements	Broad-based awareness & commitment; integrated & coordinated	Assist in connection between environmental policy and job responsibilities		X
Increase awareness and understanding of linkages between EMS, sustainability, and TIE	Broad-based awareness & commitment	Build senior management commitment	X	
Education and outreach				
Training and tools for managers	Broad-based awareness & commitment	Addresses training requirements		X

5.5 Institutional structures for implementation

5.5.1 Structures for implementing the SMS, EMS, EVMS, and SEMS

The Sustainability Lead from the CAO's Office is responsible for the development and implementation of the SMS. The SMS results from three systems that feed into it referred to as: the Environmental Management Systems (EMS), the Economic Vitality System (EVMS) and the Social Equity Management Systems (SEMS).

Figure 5 depicts the proposed organization for the development and implementation of each of the three systems, the EMS, the EVMS and the SEMS, flowing from the overall responsibility of the CAO. The model is based on Corporate, Departmental and Divisional Leads that would coordinate the development and implementation of the plans within their mandate.

To oversee each of these three systems at the corporate level, we propose the appointment of a Corporate Lead for each one, analogous to the function of the Sustainability Lead. These three Leads will work with each other to ensure that the three systems are developed in an integrated manner with sustainability as an underlying principle. As well, the Leads will ensure that the policies and activities of one do not negatively affect those of the other two systems. The main function of the Lead is to coordinate the activities of each of the affected departments in developing and implementing the system.

Since each of the three systems is at a corporate level, each will affect each of the corporation's six departments. Because each department has a different mandate, provides different services and has different requirements, each department would have a Departmental Lead for each of the three systems, for the EMS, the EVMS, and the SEMS. The function of the Departmental Lead will be to coordinate the activities of each of the divisions in the department in implementing the system. In addition, the Departmental Leads will communicate to the Corporate Lead departmental specific feedback on the development and implementation of the system.

Finally, each department will have a lead for each of its divisions, referred to as the Divisional Leads. The Divisional Leads will report to the Departmental Lead and will be responsible for the implementation of the system and will communicate to the Departmental Leads specific feedback on the development and implementation of the system.



With regard to the EMS, the Commissioner, Works and Emergency Services, would be the Corporate Lead; the Executive Director, Technical Services, would be the Departmental Lead; and the Director, Environmental Services, would be the Divisional Lead.

5.5.2 Role of EP&S

Under the direction of the Divisional Lead, EP&S in the Environmental Services Division will be responsible for coordinating the development of the implementation of the EMS. In order to carry out this new mandate in an efficient and effective manner, EP&S will require significant additional resources in both the immediate and longer term to carry out the initial set of priority actions that have been identified here.

Many of the high priority actions that would fall to EP&S for implementation in the short term could be carried out with outside assistance and an adequate budget for services to be obtained. There are funds available from the Environmental Plan's corporate account that should be used to develop the EMS in accordance with the priorities for immediate actions listed in Table 4 and discussed in section 5.4.5.

In the longer term, starting in Phase II, new staffing resources will be required in addition to securing outside assistance. The amount of internal resources required will depend on how much external assistance the corporation wishes to obtain.