

Region of Waterloo

Environmental Management System



The Region of Waterloo's Waste Management Centre (WMC), was registered to ISO 14001 standard on June 24, 1998, making it the first municipal waste management facility in North America with such a designation.

Our [Environmental Policy](#) was established to include our commitment to continual improvement and prevention of pollution; to comply with relevant environmental legislation and regulations and to setting environmental objectives and targets.

The Environmental Management System (EMS) was implemented at the Waste Management Centre using a 'fence-line' approach and includes over ten programs and operations conducted at the site including:

- engineered landfill
- materials recycling facility
- small vehicle transfer station
- centralized composting
- household hazardous waste
- other waste diversion programs

WHY ISO14001?

To continuously improve our administration and environmental performance for these programs and operations, the main objectives were to:

- manage environmental impacts;
- ensure compliance with regulatory requirements;
- improve record-keeping, corporate memory, and relations with the community and Council;
- gain competitive edge and increase market-share; and
- better establish due diligence.

HOW DID WE IMPLEMENT OUR ENVIRONMENTAL MANAGEMENT SYSTEM?

Implementation and registration of the EMS took 19 months (from December, 1996 to June, 1998). There was a core team of four staff responsible for implementing the EMS - Administrative Support Personnel, Waste Management Coordinator, Programs Supervisor, and Manager of Engineering and Programs (the designated Environmental Management Representative - EMR). The Coordinator was primarily responsible for identifying, action-planning, and following up on the needs of the EMS, contracting the services of and working with consultants, and training staff. Supervisors and other Management staff were involved in the process only when some need was identified for their operational area. The team coordinated efforts with other Regional departments (e.g., Legal, Finance, Computer Services) and networked with associations and organizations developing their own EMSs.

The basic steps taken in implementation were:

- **Obtaining approval from Regional Council:** This approval was necessary to secure financial and other resources, start developing staff knowledge of the standard and its benefits, set realistic implementation scope and timelines, and finalize decision-making regarding whether to

register (via third party) or self-declare.

- **Completing a Compliance Audit:** The audit was completed by a consultant to review all regulatory requirements of the WMC and to identify any non-compliance issues.
- **Completing a Gap Analysis:** This analysis was completed by a consultant to provide information on how the current operations, documentation and records compared with the requirements of the standard.
- **Participating in a "Group Program":** The WMC participated in this Provincially-subsidized program throughout 1997. This program involved monthly meetings attended by representatives of other companies interested in getting ISO 14001 registered. The meetings were facilitated by a consultant and the consultant provided support on site for one-half day each month for each of the participants.
- **Developing EMS & Related Procedures:** These procedures related to the 18 elements of the standard, and relevant operating and emergency response plans. Monitoring activities and associated records were established. A software package, ISOsoft, a product of [InteleX Technologies Inc.](#), was purchased to track all documentation and activities related to the EMS.
- **Setting Environmental Policy, Objectives and Targets, and Environmental Management Programs:** The [environmental policy](#) was established by the Director of Waste Management. Environmental aspects were identified and evaluated for significance. The objectives and environmental management programs were established by the Environmental Management Representative.
- **Contracting Registration and Auditing Services:** A proposal went out to contract services for registration and annual surveillance audits. The proposal included information about the scope of the EMS, qualifications and evaluation of bidders, scope of work. KPMG was the successful bidder.
- **Communicating and Training Staff:** A multi-faceted promotional/educational campaign was delivered and included: specialized management brainstorming and training sessions, general awareness training sessions for all staff, newsletters, "ISO" bulletin boards in all main buildings on site, contests, posters, and banners. Neighbours of the Waste Management Centre were informed of the EMS through regularly scheduled meetings.
- **Identifying and Correcting Weaknesses:** Over 20 nonconformances dealing with gaps in EMS communications, processes, procedures and performance were identified, documented and followed up on prior to registration.
- **Arranging and Following up from Pre-assessments:** Two separate assessments of the EMS were conducted prior to registration to determine whether it was ready for the registration audit.
- **Registering to Standard:** The registration audit was conducted by KPMG. The audit was three days in length and was completed on June 24, 1998.
- **Informing Council, Staff Celebration:** In September, 1998, a formal presentation including a framed copy of the certificate of registration, was delivered to Regional Council. A news release was sent out to all local media.

FINANCING & RESOURCES USE

The Region implemented and has maintained the EMS with existing staff and monies.

(A) Implementation

Personnel:

No additional permanent full-time staff were hired. One Coordinator and half of a Administrative Support Personnel's time were dedicated to implementation for 19 months. Other Management staff and support staff were involved as needed.

Expenses:

"Out-of-pocket" expenses included consultants for the compliance audit and gap analysis, group program, software, auditor training, and registration & surveillance audits which totaled approximately \$50,000 (Cdn). When accounting for Regional staff time in drafting procedures, producing and organizing new documents and records, and attending training and meetings, the total cost of implementation would approximate \$210,000 (Cdn).

(B) Maintenance

It has required more resources than originally anticipated to maintain the EMS.

Personnel:

It was originally anticipated that by 6 months after registration, a Coordinator and an Administrative Support Person would each work half-time to complete necessary maintenance activities. However, for approximately one year after registration, the Coordinator worked full time on the EMS. Also, for the 6 months leading up to re-registration, one Coordinator and one Administrative Support Person worked full-time on the EMS.

Expenses:

In an average year, maintenance costs of the EMS approximates \$40,000 per year. This includes staff time, software support, consultant audit fees, office supplies, and promotion and education.

RESULTS & IMPACTS

Most of the original objectives for implementing the EMS have been realized. However, as of yet the Waste Management Centre has not realized an increase in market share. Few local companies are currently registered to ISO 14001. It is still anticipated that as more companies become registered, market share will rise.

Some benefits realized to date of the Environmental Management System at the Waste Management Centre include:

1. Systems are in place to ensure compliance to legal and other requirements;
2. Documentation related to staff's responsibilities have been established to minimize environmental issues related to changes in staffing;
3. Monitoring and measurement activities have been formalized;
4. Staff awareness of relevant procedures has been heightened;
5. Commitment to and resources dedicated for environmentally-responsible practices have been demonstrated and communicated;
6. Documentation is readily accessible, available, and current;
7. Systemic checks are in place to ensure that the Environmental Management System is reviewed, corrected and maintained;

In addition, other outcomes include:

- Sharing of Environmental Management System information with a variety of public and private organizations including touring international delegates;
- Selling of data through ISOsoft 14001 computer system.

As can be determined from the foregoing list, the benefits to date have been mostly related to 'intangibles'. A cost-benefit analysis to quantify specific economic and environmental advantages of having an Environmental Management System has not been undertaken at this time.

BARRIERS & CONFLICTS

Regional Council, Senior Management, staff of the Waste Management Division, and other Regional departments have, on the whole, been very supportive of the EMS. Few conflicts or barriers arose during implementation.

In late 2000/early 2001 in preparation for re-registration scheduled for June, 2001, there were numerous management discussions concerning the true intent of the Environmental Management System, whether the scope should be restricted or broadened, and documentation needs. The Waste Management Centre wanted to improve the effectiveness and efficiency of the Environmental Management System prior to re-registration.

A consultant that had extensive experience in implementing and auditing Environmental Management Systems, was hired to provide an objective evaluation and list of recommendations on how to streamline our current system. From January to May, 2001, sweeping changes occurred as a result of the consultant's report and recommendations. These changes included revising the evaluation process for environmental impacts, adding more objectives and targets to capture more of the environmentally-responsible work being completed at the site, removing documentation and monitoring activities that were being controlled by the system but not related to the scope nor required by the standard, devising a new system to control documentation that required frequent updating, etc.

The majority of these improvements were completed by the time of re-registration in June, 2001.

The Waste Management Centre, with these improvements and considering the maturity of the existing system, is expecting the Environmental Management System to be an even more powerful tool and resource for staff to use ensuring meaningful environmental protection and performance.

LESSONS LEARNED & TRANSFERABILITY

Over the years of implementing and maintaining the Environmental Management System, the following lessons have been learned:

Group programs are beneficial and synergistic: By participating in a group that consists of representatives of other companies implementing the standard, valuable ideas, knowledge and procedures are gained;

Investment in a computerized tracking and document control system is valuable: The system triggers timely completion of maintenance activities and provides dependable document control;

Representatives from each functional area should be involved early in the process: It is important to broaden the number of people involved in implementation early in the process to ensure completeness of environmental impacts, relevant monitoring work, etc.

Training should be executed early: The Waste Management Centre's staff were trained late in the

process, just a few months prior to registration. There is a benefit to start training earlier to ensure better awareness;

Training of sufficient internal auditors is important: At the time of registration, only the Program Coordinator and Environmental Management Representative were trained auditors. It is imperative that a number of staff (possibly from same or different departments) be trained to provide flexibility in organizing audit teams and better objectivity in conducting audits.

Training is constant: Resources need to be dedicated to and procedures need to be clear on training of new staff - both departmental, inter-departmental and contracted staff.

Fence-line Implementation works: Even though there are numerous programs and operations located at the Waste Management Centre, having a definite border - 925 Erb St. West, Waterloo - helped to focus the Environmental Management System.

Third Party Registration is preferred: While registering through a registrar and contracting surveillance audits through a third party is more costly than self-declaration, it provides more credibility to the public that the Environmental Management System is maintained in good order.

Document that which is necessary: Document what you must as per the standard. Recognize the resources it takes to maintain the 'extra' controlled documents and related work.

Variety in promotional/educational campaigns helps: Using a variety of mediums and events on an ongoing basis helps to remind staff of proper environmental management practices and benefits of the Environmental Management System.

Use Consultants: Qualified, experienced Environmental Management System consultants can provide a wealth of knowledge, a range of services, and be a tremendous help and resource to you and the Environmental Management System. Many provide on-site training courses for auditors, management, etc.

Re-think your Environmental Management System prior to re-registration: It is expected that the Environmental Management System implemented 3 years ago is not as good as what it could be today. By re-examining and implementing changes to the Environmental Management System prior to re-registration it provides an opportunity to have sweeping changes completed and 'approved', and kick-starts improved environmental performance for the next 3 years. The registrar for the Waste Management Centre was impressed to see that the Environmental Management System had been "shook" up prior to re-registration.

Want to learn more about the [ISO14000 series of standards](#)?

If you have additional questions regarding our environmental management system, please contact [Deanna Dakin](#)