

Revised Draft Report For

Environmental Management Plan



Prepared For:
**Corporation of the
Town of Markham**

April 2006

Prepared By:



CH2MHILL

Responsible Solutions for a Sustainable Future®

Executive Summary

Introduction

CH2M HILL has been retained to help develop an Environmental Management Plan (EMP) that will help the Town prioritize environmental goals and commitments, promote interdepartmental collaboration and coordinate environmental management. The EMP will also help the Town to:

- develop an implementation structure to manage and coordinate risks and liabilities related to its operations and responsibilities affecting land, air, water, biodiversity, natural resources and people within its jurisdiction;
- achieve effective and responsible program delivery; and
- develop a corporate strategy to establish a coordinated, integrated approach to environmental management and to guide the delivery of a high standard of environmental performance.

For Markham, the EMP forms a scalable template to develop and implement cross-commission environmental priorities and programs. The EMP is supported by an organizational framework for implementation. The framework, as it has been developed, is focused on the Town's internal organization and responsibilities. The framework can be expanded to include external stakeholder engagement and integration of economic and social well-being priorities as the Town continues to expand on its strategic planning process and move to a Comprehensive Sustainability Plan to engage the community and support the federal gas tax.

The EMP structure is based on the continual improvement model of PLAN, DO, CHECK/ACT, and provides a format to develop action-oriented implementation strategies and to track future performance.

This document presents options only as far as Vision/Policy, Governance, and Planning. It is intended that the Doing and Checking components of the integrated plan will evolve beyond this initial step, with implementation. Once the recommended actions from the first three key plan components are underway, the natural sequential process of implementing, measuring, monitoring, and reporting will evolve in the next phase of the EMP, which is the implementation priorities framework or manual.

Markham's Existing Environmental Profile

It was recognized that the Town is strong in its commitment to the environment. Markham is engaged in many environmental initiatives and generally considers the environment inherently valuable, thereby integrating environmental considerations into a way of work.

The following other areas were considered strengths within the organization:

- Strong, committed, and motivated staff and Council members
- Business Unit Profiles review the Official Plan and monitor the Heritage Act, Greenbelt Plan, Places to Grow Act, Oak Ridges Moraine Conservation Plan, and, Source Water Protection Act
- Compliance is well-established, although can be a challenge
- Internal focus on greening infrastructure, fleet and facilities, waste and energy management, and pesticide use

Some of the identified challenges (gaps), within the organization reflect the difficulty of providing a coordinated approach to environmental management due to a lack of resources, unplanned priorities, or unclear direction.

Expanding the Vision

The Town's Engage 21st Century strategic plan recognizes the environment at both the community vision level – "to protect, enhance and restore Markham's natural features and green spaces as part of a vital and healthy ecosystem" - and within the corporate goal of environmental focus – "preserving natural and built environment; We are a leader in preserving environmental and historic areas. We create plans and policies to support this leadership role". This is a strong foundation on which to build the EMP. In concert with enhancing governance for the EMP at the Council level, to support planning and decision-making by Council, Commissioners and the EMP staff team, and in keeping with emerging best practices, we propose the following additions to the Town's Vision:

"The Town of Markham uses a coordinated approach to environmental management. Markham continues to build on its environmental leadership by integrating environmental considerations and compliance in all aspects of the Town's operations. We recognize the importance of the natural environment in our strategic priorities and during our strategic planning process. Markham will continue to work towards becoming an environmentally sustainable organization."

Governance

A corporate organizational framework structure has been formulated to support the development and implementation of the EMP. EMP oversight at the Council level helps to coordinate and streamline issues, policies and programs between the community and the administration.

Recommendation: The option to establish an Environmental Management Committee (EMC) under the General Committee is recommended as this would ensure a coordinated and integrated approach to implementing, reviewing and reporting on the EMP, as well as providing a one-window approach to emerging environmental issues and priorities.

Recommendation: It is recommended the Town of Markham establish an Office of Environmental Sustainability (OES). The Office of Environmental Sustainability would be charged with the following roles and responsibilities:

- Being the Environmental Sustainability “champion” for the corporation, with the responsibility of advancing Markham’s environmental priorities and enhancing the Town’s record of leading by example
- Providing cross-corporate coordination, integration, monitoring, reviewing and reporting of EMP priorities and initiatives, including setting realistic and measurable targets and objectives and developing performance measures
- Collaborating with Human Resources to provide internal EMP training, education, and communications
- Providing leadership and oversight of EMP implementation
- Developing and oversight of corporate environmental plans, programs and policy related to the implementation of EMP priorities and initiatives (such as climate change, renewable energy, conservation [energy, water, biodiversity], alternative fuels, TDM, community sustainability plan/gas tax, strategic plan) that will improve environmental performance in the Town of Markham
- Providing and facilitating a one-window approach for environmental sustainability initiatives
- Leading intergovernmental relations, including facilitating compliance with federal, provincial, and local environmental regulations

Recommendation: The Office of Environmental Sustainability be located within the Community and Fire Services Commission where much of the groundwork in developing the EMP has been concentrated. The advantage of a Commission-based implementation approach is that organizational change and development is scaled at a level that allows the broader internal EMP stakeholders to evaluate successes, best management practices, and early comparability with other municipalities. In addition, because many of the implementation initiatives would be done within operations, having the Office of Environmental Sustainability within one commission, early successes could be achieved around operational policy and performance measures. Roles and responsibilities for EMP staff, management and Council have been developed as part of this study.

This approach is recommended to permit the Town to achieve early success in the initial stages of EMP implementation. This would help to coordinate the timing around the new strategic planning process, the Official Plan Review and establish the initiation of the community sustainability plan. Once this initial implementation was underway, a review of the support required to continue implementing the EMP could be completed and it could be determined if the OES would be better positioned elsewhere within the corporation, such as within the CAO’s office.

Next Steps for EMP Implementation

The first steps for implementing the initial actions on the EMP include: establishing the organizational framework including the OES and the recommended governance structure, forming the core EMP team and engaging the team in Council and cross-commission activities and initiatives, selecting priorities for implementation and securing funding.

Environmental Priorities

The following suite of environmental priorities will help with immediate implementation of the EMP. Priorities for an internally-focused EMP should be based on factors that would lead to the greatest impact (and which the Town has direct control over) and build upon existing programs.

ENVIRONMENTAL PRIORITIES BY THEME

Air	Land and Biodiversity	Water	Resources and People
<ul style="list-style-type: none"> • Emissions Reduction • Renewable Energy • Energy Management • Green Fleet Transition Plan • Enhance TDM 	<ul style="list-style-type: none"> • Natural Heritage Strategy • High-Performance Buildings • Risk Management for Contaminated Sites 	<ul style="list-style-type: none"> • Pollution Preventions • Stormwater Quality • Drainage Master Plan 	<ul style="list-style-type: none"> • Green Procurement • Compliance/Regulatory Requirements • Training, Education, Promotion, Communication • Performance Measurements/Lifecycle Analysis

Funding Sources

There are various sources of external funding available to the Town of Markham to support programs and initiatives, which can be implemented as part of the EMP. Because there are always new sources of funding and funding proposals are often time-consuming and long-term, it may be worth considering a full-time position to oversee funding proposals in the future.

Performance Reporting

It is recommend the Town consider the GRI standard, ISO 14001 standard, and the Town of Markham's own Performance Measures Document in developing its tracking and reporting processes. The GRI Guidelines are categorized into five main reporting elements and often form the table of contents of reports, including the following:

- Vision and Strategy
- Profile
- Governance Structure and Management Systems
- GRI Content Index
- Actual Performance Indicators

Within each reporting element there are specific indicators. Core indicators are classified as those that are relevant to most reporting organizations and are of interest to most stakeholders.

Conclusion

The EMP is intended to provide the Town of Markham with an understanding of the direction in which the corporation is moving environmentally and of how the Town will realize established EMP goals, objectives, and implementation. The next step for the EMP implementation is providing details around governance, roles and responsibilities and establishing policies and performance measures that will set the direction for the EMP TAC and management. Ultimately, performance measures will lead to monitoring and reporting that describes the tasks and responsibilities for implementing and communicating the EMP over time.

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Contents

1.	Introduction.....	1-1
1.1	How was Markham’s EMP Developed?	1-1
1.2	What Does the Plan Include?	1-2
2.	Markham’s Existing Environmental Profile.....	2-1
2.1	Existing Condition (Where We Are Today).....	2-1
2.2	Gap Analysis Methodology	2-1
2.3	Gap Analysis Summary	2-2
2.3.1	Key Strengths	2-2
2.3.2	Key Challenges.....	2-2
3.	VISION: The Desirable Future.....	3-1
3.1	Drawing from the Municipal Context	3-1
3.2	Common Themes from Municipal Programs.....	3-1
3.2.1	Sustainability Focus Area	3-1
3.2.2	Performance Reporting.....	3-2
3.2.3	Governance Structure	3-2
3.2.4	Funding.....	3-2
3.3	How Does Markham Compare?.....	3-2
3.4	Vision.....	3-2
3.5	Expanding the Vision.....	3-3
4.	GOVERNANCE: Integrated EMP and the Corporate Organizational Framework	4-1
4.1	Council Level – EMP Leadership	4-1
4.1.1	Option #1: Existing Condition – General Committee and Environmental Subcommittees.....	4-2
4.1.2	Option #2: General Committee and New Standing Committee – Environmental Management Committee.....	4-2
4.1.3	Discussion	4-3
4.2	Enhancing Governance.....	4-3
4.2.1	Establishing an Office of Environmental Sustainability	4-3
4.2.2	Roles and Responsibilities of the Office of Environmental Sustainability	4-4
4.2.3	Commission-based EMP Implementation	4-5
4.3	EMP Roles, Responsibilities, and Support.....	4-6
4.3.1	Council Support	4-10
4.3.2	Senior Management Team Support	4-10
4.3.3	TAC Support	4-11
4.3.4	Staff Support.....	4-11
4.4	EMP Planning	4-11
4.5	EMP Evolution	4-12

5.	DOING EMP Implementation – Getting to the Desired State.....	5-1
5.1	Next Steps for EMP Implementation.....	5-1
5.2	Environmental Priorities	5-3
5.2.1	Theme: Air.....	5-3
5.2.2	Theme: Land and Biodiversity	5-4
5.2.3	Theme: Water.....	5-5
5.2.4	Theme: Resources and People.....	5-5
5.3	Beyond Vision, Governance, and Planning.....	5-6
5.4	DOING.....	5-7
5.4.1	Funding Sources	5-7
5.4.2	EMP Performance Reporting.....	5-7
5.5	Phasing EMP Organizational Structure Implementation.....	5-9
5.5.1	Staffing and Costing Implications	5-10
5.5.2	Monitoring and Reporting.....	5-10
6.	Conclusion.....	6-1

Attachments

A-1	Environmental Programs
A-2	Gap Analysis
A-3	Town of Markham Comparison to Municipal Context
A-4	EMP Desired Future Conditions
A-5	Sample Environmental Risk Ranking Formula
A-6	EMP Reporting Guideline
A-7	First Steps for Each EMP Element
A-8	Sample EMP Implementation Work Plan
A-9	Current Environmental Funding Sources
A-10	External Support Costs
A-11	Town of Markham Environmental Management Plan Report – Table of Contents

Appendixes

A	Background on Developing Integrated Plans
B	Interviewee Names and Titles
C	Interview Protocol
D	Workshop Findings
E	Comprehensive Results of Gap Analysis
F	Benchmark Studies

Figures

4-1 Office of Environmental Sustainability within the Community and Fire
Services Commission 4-5

4-2 Town of Markham Environmental Management Program Roles and
Responsibilities Matrix 4-7

1. Introduction

With more than half the world's population now living in cities, environmental stewardship and sustainability issues are taking on increasing prominence. The Town of Markham is one of the fastest-growing municipal jurisdictions in Canada. The community's culture and nature exhibit a propensity toward leadership and innovation on many fronts, including environmental stewardship and sustainable development.

CH2M HILL has been retained to help develop an Environmental Management Plan (EMP) that will help the Town prioritize environmental goals and commitments, promote interdepartmental collaboration and coordinate environmental management. The EMP will also help the Town to:

- develop an implementation structure to manage and coordinate risks and liabilities related to its operations and responsibilities affecting land, air, water, biodiversity, natural resources and people within its jurisdiction;
- achieve effective and responsible program delivery; and
- develop a corporate strategy to establish a coordinated, integrated approach to environmental management and to guide the delivery of a high standard of environmental performance.

For Markham, the EMP forms a scalable template to develop and implement cross-commission environmental priorities and programs. The EMP is supported by an organizational framework for implementation. The framework, as it has been developed, is focused on the Town's internal organization and responsibilities. The framework can be expanded to include external stakeholder engagement and integration of economic and social well-being priorities as the Town continues to expand on its strategic planning process and move to a Comprehensive Sustainability Plan to engage the community and support the federal gas tax. A background on developing integrated plans is presented in Appendix A.

1.1 How was Markham's EMP Developed?

The consulting team began the Markham EMP process with a benchmarking summary, found in Section 3 of selected municipalities to examine the presence and, where possible, the basis of their comprehensive policy, governance in terms of leadership and internal coordinating office functions, and the nature of the organizational framework for implementing the plan. We also highlighted plan goals, priority areas of sustainability focus and funding sources used to help get them started. This benchmarking exercise assisted with developing the Town's vision of a desired future state. The desired future state helped set the direction for the plan's content.

A gap analysis was conducted on the Town of Markham's internal operations. The "gaps" were defined by articulating the differences between the Town's present condition and the

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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Town's desired future condition, which was shaped based on the integrated criteria of the ISO 14001 Environmental Management System Standard and the benchmarking highlights. The gap analysis included a detailed examination of the Town's environmental policy or equivalent statements, process for determining environmental priorities, ensuring regulatory compliance, and setting realistic objectives and measurable targets. We also examined the Town's financial and human resources, designated roles and responsibilities, and internal processes, including controls to achieve implementation of commitments. And we evaluated the Town's processes for tracking, evaluating, and reporting on environmental management performance. We identified gaps and issues, and identified options for closing the gaps and implementing a process to get to Markham's desired future state.

1.2 What Does the Plan Include?

The following chapters of this plan form the basis for the recommended priorities and organizational framework for the Town's integrated EMP. We have summarized the findings in an easy-to-review format that reports where the Town is today and how that current state relates to the Town's desired future and to the broader municipal context. Recommendations and priorities for moving the Town to its desired future condition are identified.

The EMP structure is based on the continual improvement model of PLAN, DO, CHECK/ACT, and provides a format to develop action-oriented implementation strategies and to track future performance.

The plan as presented includes a colour-coded key on each page to provide quick reference to the key plan component areas for an EMP as presented in Appendix A.

Although the colour-coded key includes doing and checking, this document presents options only as far as Vision/Policy, Governance, and Planning. It is intended that the Doing and Checking components of the integrated plan will evolve beyond this initial step, with implementation. Once the recommended actions from the first three key plan components are underway, the natural sequential process of implementing, measuring, monitoring, and reporting will evolve in the next phase of the EMP, which is the implementation priorities framework or manual.

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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2. Markham's Existing Environmental Profile

This section provides a snapshot of where the Town is in terms of its current reality/condition relative to the proposed key plan components (core elements) of an EMP, as described Appendix A.

2.1 Existing Condition (Where We Are Today)

The Town of Markham has, over the years, adopted many policies and programs which contain environmentally sustainable elements. Of note are the Markham Land Acquisition Fund, the Rouge Park North Development Plan, and the Oak Ridges Moraine Initiative. A summary of the Town's Environmental Programs is presented in Attachment A-1. However, the Town has not drawn these initiatives together into a comprehensive way to enhance environmental sustainability. There are no agreed-upon principles to guide sustainability priorities in the Town. There is no process to systematically monitor and improve Markham's progress towards becoming a more sustainable community. Nor is there a plan in place to educate staff and the community about more sustainable actions and practices.

By reviewing the projects and initiatives currently underway in Markham and talking with Council and staff, a gap analysis was assembled to examine how the town can improve its coordination and integration of management practices and decision-making and where these improvements can best be made to achieve improved environmental management.

2.2 Gap Analysis Methodology

The gap analysis was conducted to identify areas of strength and opportunities for improvement within the Town's organization and internal environmental management activities. The results of the gap analysis were used to first create an existing environmental profile for the Town and then to determine priorities for the EMP.

Information was collected through a workshop held with staff and the Technical Advisory Committee (TAC) and through a series of interviews, both in person and by telephone, with senior staff and council members of the Town of Markham, using an established questionnaire. The workshop and interviews were intended to collect information pertaining to the environmental risks and liabilities, decision-making and governance aspects of the Town's operations.

The questionnaire's design was influenced by the core elements for an integrated EMP structure as defined in Appendix A, input from the TAC for this project, and the Plan, Do, Check, Act elements of the ISO 14001 Standard for Environmental Management. This approach was chosen to provide the Town with a recognized methodology that provides accountability and facilitates continual improvement of environmental performance.

Interviews were conducted from June 2005 to September 2005. In total, there were twenty staff and five Council members interviewed. The list of interviewees is presented in Appendix B and the interview protocols (questionnaire) are presented in Appendix C.

The information provided insight into Markham's strengths. It also identified areas of weakness or "gaps" in Markham's environmental profile. The gaps led to the identification of opportunities which are presented in Section 3 of this document.

2.3 Gap Analysis Summary

We focused questions on expressed and documented commitment to environmental health through compliance, due diligence and establishing targets and programs to improve air, water, land, natural resources and biodiversity. We also inquired about the application of pollution prevention, life cycle approach, continual improvement (leading to absolute environmental benefit; improved organizational capacity), and individual/employee responsibility. The Town's existing profile, based on the results of the gap analysis is presented in Attachment A-2. Key findings are summarized below.

2.3.1 Key Strengths

Within Markham's strengths, generally, it was recognized that the Town is strong in its commitment to the environment. Markham is engaged in many environmental initiatives and generally considers the environment inherently valuable, thereby integrating environmental considerations into a way of work.

The following other areas were considered strengths within the organization:

- Strong, committed, and motivated staff and Council members
- Business Unit Profiles review the Official Plan and monitor the Heritage Act, Greenbelt Plan, Places to Grow Act, Oak Ridges Moraine Conservation Plan, and, Source Water Protection Act
- Compliance is well-established, although can be a challenge
- Internal focus on greening infrastructure, fleet and facilities, waste and energy management, and pesticide use

2.3.2 Key Challenges

Some of the identified challenges (gaps), within the organization reflect the difficulty of providing a coordinated approach to environmental management due to a lack of resources, unplanned priorities, or unclear direction. These challenges include:

- No established position within the organization that "champions" environmental management and can facilitate cross-corporate coordination and collaboration
- A desire to move from the existing ad hoc decision-making to more coordination between Council and staff through a shared structure for coordinated decision-making but with the lack of a plan or structure to do so
- The Town's Vision and Policy statement lacks specific commitment to priority setting related to environmental objectives and life cycle analysis

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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- A lack of cross-corporate coordination on intergovernmental relations, specifically around compliance, priority setting, implementation and funding opportunities
- A lack of monitoring and reporting on environmental initiatives

Appendix D includes the summary of the workshop and Appendix E presents the findings of the gap analysis, highlighting the Town's strengths and weaknesses between recommended core plan components featured in Appendix A with the Town's current condition.

3. VISION: The Desirable Future

3.1 Drawing from the Municipal Context

The Town of Markham recognizes the importance of understanding its current situation, and its desirable future position within the Canadian municipal setting. An external program benchmarking analysis was conducted to provide the Town with the knowledge and lessons learned from municipalities who have undertaken the development of a corporate level EMP.

The following six municipalities were selected for the benchmark exercise:

- City of Chicago
- City of Seattle
- Town of Newcastle, United Kingdom
- City of Calgary
- Greater Vancouver Regional District
- Portland, Oregon

The analysis considered best practices on scoping, program development, and implementation with a particular focus on the core plan components of governance, accountability, tracking, and reporting. A summary is provided in Appendix F and highlights are provided below.

3.2 Common Themes from Municipal Programs

The review identified several common themes among the selected municipalities, including the following:

- In each of the six examples, the initiatives were generated and championed at the corporate level, whether through a visioning exercise, corporate policy commitment, or principles.
- A central office or business unit was established (in some cases) to hold responsibilities for program development and implementation. In some cases, the designated offices merged the issues of “environment” with “sustainability”.

3.2.1 Sustainability Focus Area

The “Sustainability” focus selected by the benchmark communities also presented common themes, including: energy efficiency and renewability, green procurement, sustainable infrastructure and buildings, clean air and climate protection, solid waste management, and personal and community health and performance benchmarking.

3.2.2 Performance Reporting

Performance reporting practices and protocols are considered important to help inform decision-making exercises. Formal reporting lends more rigour to corporate planning and budget preparation, and the benchmark municipalities found a variety of ways to achieve this rigour. For example, the Cities of Chicago and Seattle have established Environmental Action Agendas. The City of Calgary prepares a State of the Environment Report. Various measurement and reporting systems have been adopted, including ISO 14001 standard and the Global Reporting Initiative (GRI). While formal reporting is commonly practiced, the style of reporting tends to be individually fashioned to respond to the organization-specific flavour.

3.2.3 Governance Structure

When considering governance structures, the theme in the municipal context has been ‘one-size-fits-one’. Each of the benchmark municipalities established a governance structure that was responsive to their respective organizational philosophy and function. Council stewardship is important for establishing new models, regardless of the structure established. Structure variations included designated offices with staff, steering committees with special focus, executive leadership teams, and structures that encourage collaboration with external partners and community groups.

3.2.4 Funding

The majority of initiatives and programs implemented by the plans were funded internally. External funding sources were sought out to enable the implementation of very specific programs and actions to leverage support from environmental programs sponsored by various levels of government as an example.

3.3 How Does Markham Compare?

Before establishing a future condition profile, it was important to understand how the Town of Markham compared to the benchmark municipalities in the key plan components of Vision/Policy, Governance, Doing and Checking. The next step establishes the desired state for Markham and the critical factors required achieving the desired state.

The Comparison of the Town of Markham to the benchmark communities is summarized and presented in Attachment A-3. The Desired future condition for the Town of Markham for each key plan component is presented in Attachment A-4.

3.4 Vision

The Town of Markham has established a substantial foundation for building out the governance to support its Community Vision:

“Markham...the Leading Canadian Municipality – embracing technological innovation, celebrating diversity, characterized by vibrant and healthy communities – preserving the past, building for the future.”

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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The key elements of the overall Strategic Plan vision capture the essence of what Markham wants to be, and include the following:

- Community Excellence
- Integrated Yet Diverse Communities
- Opportunities for All
- Harmony in Diversity
- Preserving Our Natural and Built Environment

The Vision becomes reality through a governance structure that provides the means to develop and implement an integrated structure like the one proposed for the Town's EMP.

3.5 Expanding the Vision

The Town's Engage 21st Century strategic plan recognizes the environment at both the community vision level - "to protect, enhance and restore Markham's natural features and green spaces as part of a vital and healthy ecosystem" - and within the corporate goal of environmental focus - "preserving natural and built environment; We are a leader in preserving environmental and historic areas. We create plans and policies to support this leadership role". This is a strong foundation on which to build the EMP. Creating a more coordinated approach to environmental management will require commitment from Council, senior management and staff. In concert with enhancing governance for the EMP at the Council level, to support planning and decision-making by Council, Commissioners and the EMP staff team, and in keeping with emerging best practices, we propose the following additions to the Town's Vision:

"The Town of Markham uses a coordinated approach to environmental management. Markham continues to build on its environmental leadership by integrating environmental considerations and compliance in all aspects of the Town's operations. We recognize the importance of the natural environment in our strategic priorities and during our strategic planning process. Markham will continue to work towards becoming an environmentally sustainable organization."

As the EMP evolves and the Town moves towards a Community Sustainability Plan, which engages the community and includes goals and objectives beyond corporate initiatives, a broader vision of environmental sustainability may be developed.

4. GOVERNANCE: Integrated EMP and the Corporate Organizational Framework

Based on the findings from the Gap Analysis, Benchmarking and the input from both the CH2M HILL Project Team and Town of Markham TAC, a corporate organizational framework structure has been formulated to support the development and implementation of the EMP.

In this section we suggest a governance structure, based on the integrated model referenced in Sections 1, 2, and 3. We also provide a summary of core EMP roles and responsibilities for key representatives in the organization. In addition, we provide a table with the key components of Appendix A listed against what it would look like in Markham. We then define a planning process on Markham's budget and planning cycle over a one-year cycle. Finally, we discuss a suggested reporting process and methodology.

The framework provides a structure to support governance (appropriate responsibility and authority) for the management of relevant environmental risks and opportunities associated with the Town's owned and operated assets and services. It is important to remember that the scope of this phase of the EMP is internal, whereby the Town has the greatest influence on its own operations and staff.

The framework can be adapted for a broader scope of responsibilities associated with the Town's community-based and outreach-oriented activities and opportunities in the future. To begin, however, we propose an internal accountability or governance structure that focuses on development and implementation of environmental management processes, targeting Town operations and assets.

The EMP roles and responsibilities matrix describe the key EMP responsibilities with existing Town staff roles. One new suggested position, the EMP manager, could be filled by reallocating existing resources. These responsibilities are throughout the City's organization, and allow for the allocation of appropriate strategic/tactical roles and responsibilities to various levels of the Town.

4.1 Council Level – EMP Leadership

When considering governance structures, each of the benchmark municipalities established one that was responsive to their respective organizational philosophy and function. Council stewardship is important for establishing new models regardless of the structure established. Structure variations included designated offices with staff, steering committees with special focus, executive leadership teams, and structures that encourage collaboration with external partners and community groups. The following examples are taken from the benchmark municipalities.

- In 1992, the Mayor of the City of Chicago convened an environmental initiatives committee to coordinate City-wide environmental initiatives.

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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- The City of Seattle environmental policies are fully endorsed by the Mayor and Council and an Office of Environmental Sustainability has been established.
- The Executive Leadership team of the City of Calgary has endorsed their EMS, which is administered by the Environmental Management Unit, comprised of three divisions, including Environmental Policy and Strategic Initiatives, Environmental Assessment and Liabilities, and Environmental Systems and Corporate Services.

In keeping with the benchmarking and emerging best practices across Canada around governance and continuity between successive Councils, we recommend enhancing the EMP's representation and communication between Council, the CAO and the Commissions' senior management. To help achieve, this we suggest two options instituting stronger governance for the EMP at the Council level, which would facilitate cross-corporate coordination and provide an interface between the public and the Town's management and administration.

4.1.1 Option #1: Existing Condition – General Committee and Environmental Subcommittees

The first option would include one Town EMP representative (EMP manager and/or designate) to sit on each of the key environmentally-related EMP committees (such as Environmental Issues; Markham Conservation Committee; Kyoto Task Forces Committee) and the Community Services and Environment Committee at the Council level. This would help to both convey and survey emerging issues and initiatives that would inform the EMP priorities and shape the EMP programs.

This option essentially mirrors the structure that is currently in place at the Town of Markham, where staff from the various environmental portfolios sit on the environmental subcommittees.

4.1.2 Option #2: General Committee and New Standing Committee – Environmental Management Committee

The second option would include a standing Environmental Management Committee formed to leverage the strong interest by council members to table, review, and discuss EMP issues in a coordinated fashion. The Environmental Management Committee, (EMC) could be coordinated through General Committee, since this committee includes every member of Council. The EMP Manager would sit on the EMC as an advisory or consultative resource. Task force subcommittees, with a project- or initiative-specific work plan, clearly defined roles, responsibilities and a results-based deadline, could be established to support the EMC and could, thereby, reduce the number of environmental committees and the demand on Council and staff resources (for example, the Environmental Issues Committee, Kyoto Task Force Committee). This would also serve to better highlight emerging issues and initiatives that would inform the EMP priorities and shape EMP implementation.

As appropriate and required, external stakeholders and the community could advise Council through subcommittees of the EMC. As an example, the City of Toronto has established a Round Table on the Environment where members of council and the community identify issues and make recommendations to council. The Markham

Conservation Committee, an existing advisory committee to Council, could continue to report through the EMC in a similar capacity and topic-specific experts could be invited to attend the relevant meetings. Once again, stakeholder subcommittees and advisory committees would require a specific annual work plan and schedule to ensure that the committees remained relevant, with measurable actions and results. Staff and Council resources on stakeholder/task force subcommittees could be provided “as needed” depending on resources required to facilitate the completion of the task or work plan.

Cities like Calgary, Vancouver, and Kamloops have a centralized Environmental Advisory Committee and specific task-groups or sub-committees are struck to explore particular issues and solutions in greater detail. The City of Portland, Oregon has established the Sustainable Development Commission, a citizens group that acts as advisor to Council.

4.1.3 Discussion

In both options, EMP oversight at the Council level helps to coordinate and streamline issues, policies and programs between the community and the administration. Both options would allow for a review of the Town’s proposed priorities, plans, and results to meet the goals and intentions of the EMP. The EMC option (#2) helps to ensure a coordinated approach to EMP issues and substantially reduces both Council and staff resource demands, while encouraging community involvement through participation in subcommittees.

Recommendation: The option to establish an Environmental Management Committee under the General Committee (Option #2) is recommended as this would ensure a coordinated and integrated approach to implementing, reviewing and reporting on the EMP, as well as providing a one-window approach to emerging environmental issues and priorities.

4.2 Enhancing Governance

In 2003, the Town of Markham hired a Manager, Environmental Leadership to develop green programs and promote Markham’s commitment to the environment. While this position is still relevant, the EMP process has established that the Environmental Leadership portfolio needs to be expanded and enhanced to further advance and promote corporate environmental sustainability, support cross-corporate coordination, and build corporate-wide support for implementing sustainable initiatives and programs. Accordingly, it is recommended the Town of Markham establish an Office of Environmental Sustainability (OES).

4.2.1 Establishing an Office of Environmental Sustainability

The benchmarking communities all established a centralized unit, to coordinate, implement, and report on their EMP. Locating this office at a senior corporate level, such as at the Town’s CAO office would potentially provide the following advantages:

- An established high level profile may facilitate enhanced governance coordination with Council and the Town’s senior management level
- A greater level of intergovernmental relations is possible to coordinate legislative requirements, facilitate networking, and identify and develop strategic partnerships

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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- A corporate level resource would be available to support corporate policy development and help to inform the strategic plan and anticipated Community Sustainability Plan that the Town will need to develop to access funds from the government gas tax revenues.
- The potential for enhanced civic engagement in the Town's environmental portfolio, particularly as the EMP is implemented and evolves to include community sustainability would be possible
- Efficiency would be achieved by providing a one-window approach for addressing Corporate environmental issues

Such an office would address a weakness in the Town's structure which was identified through the interviews and workshop conducted for this project. A "champion" was considered critical to implement the EMP and maintain the vision of the EMP in the future; however, this is what was also identified as a gap in the Town of Markham organization.

4.2.2 Roles and Responsibilities of the Office of Environmental Sustainability

The Office of Environmental Sustainable would be charged with the following roles and responsibilities:

- Being the Environmental Sustainability "champion" for the corporation, with the responsibility of advancing Markham's environmental priorities and enhancing the Town's record of leading by example
- Providing cross-corporate coordination, integration, monitoring, reviewing and reporting of EMP priorities and initiatives, including setting realistic and measurable targets and objectives and developing performance measures
- Collaborating with Human Resources to provide internal EMP training, education, and communications
- Providing leadership and oversight of EMP implementation
- Developing and oversight of corporate environmental plans, programs ,and policy related to the implementation of EMP priorities and initiatives (such as climate change, renewable energy, conservation [energy, water, biodiversity], alternative fuels, TDM, community sustainability plan/ gas tax, strategic plan) that will improve environmental performance in the Town of Markham
- Providing and facilitating a one-window approach for environmental sustainability initiatives
- Leading intergovernmental relations, including facilitating compliance with federal, provincial, and local environmental regulations

Based on the above-noted information, the experience of the benchmarking organizations, along with the workshop, interviews and gap analysis, the following implementation options are discussed.

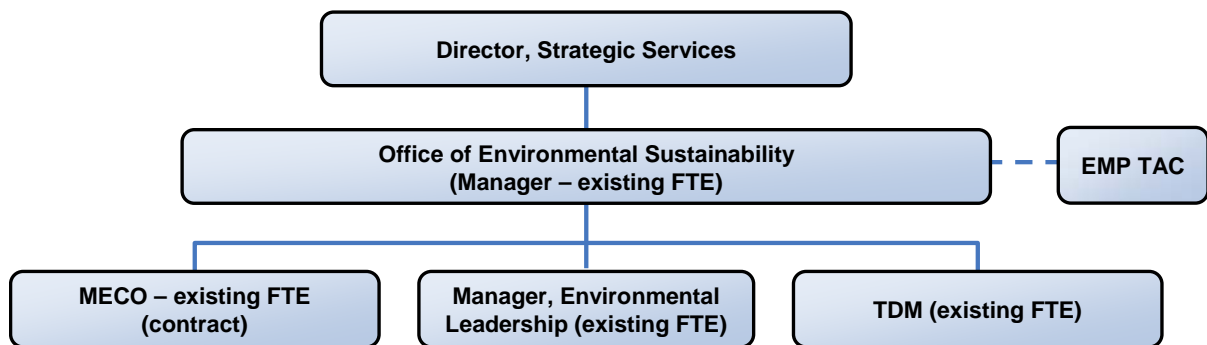
Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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4.2.3 Commission-based EMP Implementation

There are many models for implementing EMPs, from Council through to Town commissions and departments and across commissions or departments. Some smaller towns and cities begin by building a vertically-integrated EMP within one department and expanding as their internal knowledge, experience and expertise develops over time. The Cities of Kamloops and Saskatoon are two such examples of this method of implementation. For the Town of Markham, this would mean locating the Office of Environmental Sustainability within the Community and Fire Services Commission where much of the groundwork in developing the EMP has been concentrated. Figure 4-1 provides a pictorial alignment of the roles and responsibilities contained within Commission of Community and Fire Services.

FIGURE 4-1

OFFICE OF ENVIRONMENTAL SUSTAINABILITY WITHIN THE COMMUNITY AND FIRE SERVICES COMMISSION



Advantages

The advantage of a Commission-based implementation approach is that organizational change and development is scaled at a level that allows the broader internal EMP stakeholders to evaluate successes, best management practices, and early comparability with other municipalities. In addition, because many of the implementation initiatives would be done within operations, having the Office of Environmental Sustainability within one commission, early successes could be achieved around operational policy and performance measures.

Disadvantages

The disadvantage of this approach includes setting a slower pace for organizational change, as only one department would be initially involved. In addition, having the Office of Environmental Sustainability within one commission would present the following challenges:

- The Office would need to be well profiled and promoted to be positioned to influence the organization cross-commission
- The Office would need corporate authorization to mobilize staff in other commissions
- Staff of the Office must be appropriately engaged at Council or senior management level to achieve real success

- The Office would need to be fully engaged with corporate initiatives, policy, or civic engagement processes (such as a community sustainability plan, strategic plan, Official Plan review)
- The Office would need to be linked to intergovernmental issues including regulatory and compliance issues, networking or funding initiatives

Cross-commission communication and program integration would only be achieved once the whole organization was engaged in the EMP implementation. If a commission-based Office of Environmental Sustainability was established, Council would need to ensure that sufficient influence was granted to overcome the perceived disadvantages listed above.

A Commission-based Office would be supported cross-corporately with EMP representation by staff within each commission. This will facilitate coordination, integration, monitoring and reporting of the EMP, as well as coordinating governance issues, corporate environmental policy and intergovernmental relations and enhance civic engagement if the Town should move to a Community Sustainability Plan. An EMP management office or Office of Environmental Sustainability will also provide a “one-window” approach for Council and the EMC that will support integrated and coordinated governance and sustainability efforts. The Office could be staffed by reallocating existing FTEs.

This approach is recommended to permit the Town to achieve early success in the initial stages of EMP implementation. This approach begins with the OES located within the Community and Fire Services Commission until the EMP is endorsed by Council, the EMC is in place and the first planning cycle is underway. This would help to coordinate the timing around the new strategic planning process, the Official Plan Review and establish the initiation of the community sustainability plan. Once this initial implementation was underway, a review of the support required to continue implementing the EMP could be completed and it could be determined if the OES would be better positioned elsewhere within the corporation, such as within the CAO’s office.

4.3 EMP Roles, Responsibilities, and Support

To support the Office of Environmental Sustainability or EMP Management, staff within each commission should be trained to understand how the EMP informs their responsibilities and a staff lead should be established to coordinate each Commission’s input into EMP priority-setting, reporting, monitoring and implementation.

To compliment the above-recommended structure, we have prepared a roles and responsibilities matrix in Figure 4-2. The matrix provides a tabular summary of the typical EMP roles, responsibilities, and authority for both Council and management. The roles and responsibilities are appropriate to the level and authority held for each suggested position. It should be noted that the matrix includes the roles and responsibilities for all components of the EMP. In this initial stage of the EMP implementation, we are focused on the Vision/Policy Governance and Planning components.

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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FIGURE 4-2
TOWN OF MARKHAM ENVIRONMENTAL MANAGEMENT PROGRAM ROLES AND RESPONSIBILITIES MATRIX

Position	Environmental Management Vision and Leadership	Planning	Implementation and Operation*	Checking and Process Improvement*	Management Review
EMP Representatives on Council's Committees relating to the environment.	<ul style="list-style-type: none">Review EMP performance and make recommendations on EMP Management	<ul style="list-style-type: none">Table emerging environmental risks and opportunities associated with internal impacts to air, land, water, resources, biodiversity, and staff			<ul style="list-style-type: none">Review progress reports of the annual EMP goals, objectives, and targets
Mayor, Council, and CAO	<ul style="list-style-type: none">Establish EMC to oversee environmental management planDemonstrate visible and active leadership and commitment to support Environmental Management and PerformanceReview annually including an external scan with EMP ManagerReview of progress with the EMP, in the context of strategic plan and annual priorities	<ul style="list-style-type: none">Establish environmental long-range strategic plans and annual goals	<ul style="list-style-type: none">Establish Office of Environmental Management/Sustainability as recommendedApprove necessary environmental policy to implement EMP (e.g. green procurement policy)Maintain an organizational culture supporting continual improvementImplement and maintain change management practices to ensure environmental risks are properly considered with operational, new equipment, or procedure changes	<ul style="list-style-type: none">Demonstrate leadership through tours with staff at facilities	<ul style="list-style-type: none">Review progress reports of the annual EMP goals, objectives, and targetsRegularly review the Environmental Management Program and its components to ensure that it is effective, continues to meet the needs of the organization, and drives continuous improvement
Commissioners	<ul style="list-style-type: none">Implement, communicate, and maintain effectiveness of the Policy	<ul style="list-style-type: none">Establish environmental long-range strategic plans and annual goals	<ul style="list-style-type: none">Have an effective reporting system on EMP performance with status information for managementEstablish external communication processes with internal and external stakeholdersEstablish and maintain information that describes the program and linkage to related documentsEstablish and maintain procedures for managing all documentsMaintain the Corporate Environmental Management Program and all related documents.	<ul style="list-style-type: none">Conduct timely Environmental measurement and reporting of activitiesDevelop and implement appropriate indicators to measure progress against EMP goals, objectives and targets, and EMP management performanceDevelop and manage standard reporting calculations and methodologies and roles and responsibilities.Collaborate with the Manager Information and Reporting and the EMP Office on the development of EMP Measurement and Reporting guidelines/ requirementsAct as measurement and reporting advisor/coordinator with other business units, internal committees and external stakeholders to ensure increased accountability, ease of access to information and increased accuracy in numbers	<ul style="list-style-type: none">Follow-up with improvement opportunities by ensuring that action plans, with designated resources and timeline, are implemented to address identified deficienciesRegularly review the EMP Management Program and its components to ensure that it is effective, continues to meet the needs of the organization, and drives continuous improvement
EMP Office	<ul style="list-style-type: none">Implement, communicate, and maintain effectiveness of the Environmental Management PlanEnsure adequate resources are in place to fulfill the expectations set forth in the EMP policiesDemonstrate visible and active leadership and commitment to support Environmental Management and Performance	<ul style="list-style-type: none">Appoint qualified representatives to track and communicate emerging environmental management issuesEstablish environmental long-range strategic plans and annual goals	<ul style="list-style-type: none">Maintain an organizational culture supporting continual improvementMaintains the vision of the EMP/implementationEnhance corporate coordination to achievement EMP implementationmobilize staff in other commissionsGalvanizes support from the staff Technical Advisory Committee, senior management, CCC and CouncilWorks to establish governance of the EMPIntegrating sustainability and environmental values into Town of Markham plans, programs and policiesCivic engagement, promotion and public educationEstablish performance measuresPrepare EMP report card and coordinate reporting effortsMonitor progress on objectivesNetwork with Federal, Provincial, Regional governments, and other municipalities	<ul style="list-style-type: none">Monitor, measure, audit, and report EMP performance	<ul style="list-style-type: none">Coordinate formal review of EMP progress with Environmental Management Committee of Council and the Commissioners

Position	Environmental Management Vision and Leadership	Planning	Implementation and Operation*	Checking and Process Improvement*	Management Review
EMP Manager	<ul style="list-style-type: none">• Cross-corporate coordination, integration, monitoring, reviewing and reporting of EMP, including setting targets and objectives, and developing performance measures• Ensure adequate resources are in place to fulfill the expectations set forth in the EMP policies• Demonstrate visible and active leadership and commitment to support Environmental Management and Performance	<ul style="list-style-type: none">• Work with Council, senior management, and the TAC to track and communicate emerging environmental management issues• Establish environmental long-range strategic plans and annual goals• Annual staff planning session, communications, priority setting	<ul style="list-style-type: none">• Maintain an organizational culture supporting continual improvement• Provide resources essential to the effective implementation and control of the program• Ensure incumbents have appropriate education, training and experience to carry out responsibilities• Performance appraisal process and incentive program will include environmental management performance against goals• Invest and manage use of IT for environmental management-related information (collection, store, process, analyze, and report on EMP information)• Establish, maintain, and review EMP KPIs, objectives, and targets• Benchmark EMP performance with industry players• Maintain an organizational culture supporting continual improvement	<ul style="list-style-type: none">• Develop and implement appropriate indicators to measure progress against EMP goals, objectives and targets, and EMP management performance• Coordinate Tier I assessments every three years to assess the effectiveness of the EMP. Assessment results will be communicated to the Environmental Management Committee and the CCC.• Maintain and implement audit/assessment procedures that cover scope, frequency, methodologies, and responsibilities• Communicate audit results to appropriate levels of management for follow-up actions.• Collaborate with staff managers to define procedures and responsibilities to handle non-conformance and follow-up with corrective and preventive action	<ul style="list-style-type: none">• Coordinate formal review of EMP progress with Environmental Management Committee of Council and the Commissioners• Follow-up with improvement opportunities by ensuring that action plans, with designated resources and timeline, are implemented to address identified deficiencies• Regularly review the Environmental Management Program and its components to ensure that it is effective, continues to meet the needs of the organization, and drives continuous improvement.
EMP Representatives within the Commissions	<ul style="list-style-type: none">• Implement, communicate, and maintain effectiveness of the Policy• Integrate into annual business planning processes• Recognize EMP Management performance in the performance appraisal process• Work with internal stakeholders• Accountable for developing, implementing and assessing program effectiveness	<ul style="list-style-type: none">• Establish and maintain a documented procedure to identify and prioritize EMP risk; maintain aspects information• Establish a process for identifying, tracking, communicating and meeting emerging and applicable EMP issues/legislation• Conduct periodic self-inspections/ assessments for compliance• Establish EMP long-range strategic plans and annual goals• Link capital and expense projects to EMP risks in budgeting/planning processes• Establish, maintain, and review EMP KPIs, objectives, and targets	<ul style="list-style-type: none">• Maintain effective line management accountability for achieving EMP goals• EMP management function reports at a high organizational level and appropriate reporting chain• Clearly define, document, and communicate EMP Management roles and responsibilities• Ensure incumbents have appropriate education, training, and experience to carry out responsibilities• Implement mitigative measures to control EMP risks• Review and address EMP risks associated with new projects, R&D, decommissioning, acquisition, and divestitures, and other operational activities• Have processes in place to identify, prioritize, and prevent adverse EMP impacts• Establish and implement processes to identify employees EMP training needs• Identify and provide training requirements for selected employees• Ensure employees at relevant levels are aware of EMP requirements (i.e. Policy, management program requirements)• Have an effective reporting system on EMP performance with status information for management• Implement and maintain change management practices to ensure EMP risks are properly considered with operational, new equipment or procedure changes• Establish and maintain information that describes the program and linkage to related documents• Business Units develop and maintain selection and evaluation procedures for contractor services to ensure work is performed in a manner consistent with the EMP	<ul style="list-style-type: none">• Conduct planned inspections on critical equipment and identify EMP deficiencies• Communicate all deficiencies and ensure remedial actions are taken• Conduct timely EMP measurement and reporting of activities• Lead the finalization and documentation of Markham's desired EMP M&R requirements and submit to the Manager, EMP Management• Develop and implement appropriate indicators to measure progress against EMP goals, objectives and targets, and EMP management performance• Maintain and implement audit/assessment procedures that cover scope, frequency, methodologies, and responsibilities• Clearly defined procedures and responsibilities to handle non-conformance and follow-up with corrective and preventive action	<ul style="list-style-type: none">• Follow-up with improvement opportunities by ensuring that action plans, with designated resources and timeline, are implemented to address identified deficiencies
City Clerk		<ul style="list-style-type: none">• Assist with EMC/governance	<ul style="list-style-type: none">• Establish central filing structure; policy, and procedure protocols and maintain document and records guidelines• Assist with by-laws, as required		

Position	Environmental Management Vision and Leadership	Planning	Implementation and Operation*	Checking and Process Improvement*	Management Review
Community and Fire Services			<ul style="list-style-type: none">Practice and maintain Emergency Preparedness and Response Plan with City staff and contractorsDevelop or establish operating policies and programs that enhance the EMP		
Legal / Town Solicitor		<ul style="list-style-type: none">In consultation with Town Managers, assess risk from the perspective of current and emerging legal and voluntary requirements associated with current assets, proposed capital projects and acquisition of assets		<ul style="list-style-type: none">Advise on corrective action plans for issues of non-compliance or risk	
Procurement Manager	<ul style="list-style-type: none">Implement, communicate, and maintain effectiveness of the EMP		<ul style="list-style-type: none">Develop and maintain selection and evaluation procedures for contractor services to ensure work is performed in a manner consistent with the Town's Management Program	<ul style="list-style-type: none">Clearly define procedures and responsibilities to handle non-conformance and follow-up with corrective and preventive action	<ul style="list-style-type: none">Regularly review the Environmental Management Program and its components to ensure that it is effective, continues to meet the needs of the organization, and drives continuous improvement
Division/ Operations Manager	<ul style="list-style-type: none">Appoint EMP TAC and lead Representatives with defined roles, responsibilities, and authority to ensure EMP Management Program is implemented	<ul style="list-style-type: none">Link capital and expense projects to EMP risks in budgeting/planning processes	<ul style="list-style-type: none">Develop facility level operational control procedures for significant EMP aspectsMaintain effective line management accountability for achieving EMP goalsEMP standards and procedures will be integrated into general operational controls and work instructionsInvest and manage use of IT for EMP-related information		
Corporate Information Technology and Management Function			<ul style="list-style-type: none">Oversee the integration of the Corporate intranet system with Environmental Management Information SystemManage automation of EMIS including tasks of data gathering, calculation, and reportingImplement softwareProvide training and support		
Manager, MECO	<ul style="list-style-type: none">Implement and maintain effectiveness of the EMP from an energy management and "CAC and carbon" risk management over the present, mid- and long-term.	<ul style="list-style-type: none">Contribute to the development and implementation of target setting, energy management strategies with each business unit and for Corporate	<ul style="list-style-type: none">Track emissions and energy spent	<ul style="list-style-type: none">Track performance of energy conservation program and contractsMonitor and report on program performanceSupport internal and 3rd party audits of EMP activities	<ul style="list-style-type: none">Follow-up with improvement opportunities by ensuring that action plans, with designated resources and timeline, are implemented to address identified deficiencies
Development Services	<ul style="list-style-type: none">Appoint EMP Management Representatives with defined roles, responsibilities and authority to ensure EMP Program is implemented	<ul style="list-style-type: none">Contribute to the development and implementation of a life cycle approach to development and planning	<ul style="list-style-type: none">Establish and maintain procedures that support the EMP		
Director Human Resources			<ul style="list-style-type: none">Support Divisions on the establishment and implementation processes to identify employees EMP training needsProvide support processes to Identify and provide training requirements for selected employeesProvide guidance on how to ensure employees at relevant levels are aware of EMP requirements (i.e. Policy, management program requirements)	<ul style="list-style-type: none">	
* These are future phases of the EMP implementation.					

There is a need for input and support from Human Resources (i.e. to help define roles and responsibilities, establish EMP measures in new job descriptions and EMP training), Legal (i.e. to ensure regulatory compliance), Communications (for internal and external communications on the Town's website, newsletters, etc.) and the City Clerk (i.e. to support changes around governance, the development and maintenance of EMP guidelines, by-laws and documentation and records).

To successfully advance sustainability in a comprehensive and coordinated way requires resources dedicated to this task. As established in the roles and responsibilities matrix in Figure 4-2, the support for EMP implementation would come from Council, senior management, the TAC, and staff.

4.3.1 Council Support

The following key areas would be supported by Council:

- Review EMP performance annually and make recommendations on EMP Management
- Establish EMC to oversee EMP
- Demonstrate visible and active leadership and commitment to support Environmental Management
- Annually include an environmental sustainability scan with the EMP Manager
- Review progress with the EMP in the context of strategic plan and annual priorities

4.3.2 Senior Management Team Support

The support of the senior management group is also instrumental to the success of the EMP. Senior decision makers need to be engaged in the EMP to ensure that staff members are encouraged to participate in cross-corporate collaboration, training, and implementation. This requires dedicated staff resources and time in already busy departments. To achieve this, the EMP needs to be part of each commission's Key Performance Indicators and needs to be built into Business Unit Profiles as well as individual performance plans for staff. In addition, Senior Management would need to:

- Implement, communicate, and maintain relevance of the EMP within their commissions and departments
- Integrate the objectives of the EMP into annual budgets and resource planning
- Maintain effective line management accountability for achieving EMP goals
- Clearly define, document and communicate EMP Management roles and responsibilities

In some benchmarking communities, to engage senior management in the EMP and to facilitate cross-corporate coordination, an executive environment team (EET) was established comprised of senior management staff with responsibilities for the environment. In the City of Toronto, the EET includes senior managers responsible for planning, transportation, public works, emergency services, infrastructure, water, forestry, parks, and corporate policy.

4.3.3 TAC Support

The TAC is an interdepartmental group of staff working on EMP implementation and sustainability initiatives to share information coordinate actions, monitor costs/benefits of sustainability initiatives, and assist in the preparation of a reporting and communications plan for the EMP. In addition, the TAC would:

- Implement, communicate, and maintain effectiveness of the EMP
- Integrate EMP into annual business planning processes
- Recognize EMP performance in the performance appraisal process
- Work with internal stakeholders
- Be accountable for developing, implementing, and assessing program effectiveness

As mentioned in the Governance section above, EMP stakeholders would include those with a vested interest in the EMP from both an internal and external perspective. As the Town's EMP is initially focused on the internal operations, key stakeholders would include the Council, Mayor, CAO, Commissioners, and the core EMP staff involved in implementing the EMP. External stakeholders would still include key representatives of interested parties such as regulators, developers, utility suppliers, and selected community groups.

4.3.4 Staff Support

Beyond the “management” of the EMP, the success of the plan is largely dependent on how staff adopts sustainability as a “Way of Work” (WOW). The goal is to sufficiently integrate sustainability principles across the civic organization so that staff members understand that environmental management is a key priority. To achieve this, the following would need to be done during the “doing” and “checking” phases of EMP implementation:

- Establish and maintain a documented procedure to identify and prioritize EMP risks
- Establish a process for identifying, tracking, communicating, and meeting emerging and applicable EMP issues/legislation
- Conduct periodic self-inspections/assessments for compliance
- Establish EMP long-range strategic plans and annual goals
- Link capital and expense projects to EMP risks in budgeting/planning processes
- Establish, maintain and review EMP KPIs, objectives, and targets

4.4 EMP Planning

EMP planning focuses on considering environmental impacts generated by the Town's assets and services, ranking and prioritizing risks and establishing objectives, targets and programs to address the risks and opportunities. Systematic environmental risk rankings provide confidence in focusing on the right balance of environmental priorities relative to one another. Typically, municipalities employ an environmental risk assessment formula that considers and weights issues of concern such as environmental impacts, consequences (direct such as costs or legal infractions, and indirect consequences such as reputation and public relations), and probability and likelihood (of risks occurring). Risks are evaluated

from the perspective of weighted impacts of an asset or activity (for example, Town fleet vehicles) to air, land, water, biodiversity, resources, and people (quality of life, noise, odour, aesthetics).

The process for evaluating environmental risks and opportunities depends on the scope of the EMP. For an internally focused EMP, a workshop is convened with staff with direct influence over the service and operation of the asset or program under question. A legal or compliance expert is also in attendance.

Environmental prioritization directed at the whole community would include representatives of council and the community (that is, stakeholders). The facilitated workshop would confirm the group's sphere of interest (for example, quality and health around air, land, biodiversity, water, and efficiency around resource use such as procurement of materials and energy use). Attachment A-5 presents an example of a risk ranking (formula).

4.5 EMP Evolution

Ideally, the EMP Planning process should be designed to integrate with Markham's Corporate Planning Process, where the Town's Community Vision (including "Preserving Our Natural and Built Environment"), Corporate Mission, and Corporate Goals inform the Town's Strategic Priorities (for example, Engage 21st Century Markham, the Official Plan review and the Community Sustainability Plan) to influence the establishment of Corporate Objectives with measurable statements of desired outcome, and Business Results.

For subsequent years following initial implementation, EMP plans and updates will be presented in August, approved with funding in October, and performance results will be provided in July of the following year, consistent with the organization's corporation business planning cycle.

5. DOING EMP Implementation – Getting to the Desired State

This final section provides suggestions on the next steps to help the Town of Markham get to its desired future state – implementing an integrated EMP to help coordinate the Town’s decision-making, planning and development and operations of its assets and services. Based on the benchmarking, gap analysis with Town interviewees, and the team’s consultation together, we summarize the next steps, recommend sources of funding to help finance the EMP implementation, and we lay out environmental management priorities under air, land and biodiversity, water, resources and people.

5.1 Next Steps for EMP Implementation

The implementation approach for the EMP is mainly a function of size of the scope of the EMP entity (i.e. a department, a commission, and the entire Town administration), the number of staff concerned and the resources needed to address environmental goals, targets, and programs.

The following steps provide guidance on initiating the implementation of the EMP. These are typical first steps employed by municipalities engaging in this process and they reflect the approach used by the City of Seattle, City of Kamloops and City of Saskatoon. A typical EMP reporting guide is presented in Attachment A-6.

1. **Implement the organizational framework and the Office of Environmental Sustainability** and staff that will oversee the EMP implementation, monitoring and reporting.
2. **Establish the governance structure.** This includes establishing the dedicated Council Environmental Standing Committee, dismantling existing environmental subcommittees to Council, and implementing the recommended approach to establishing and managing environmental subcommittees and task forces based on a clear purpose/focus, work plan, expectations, and deadlines.
3. **Establish EMP representation at Council committees** to enhance and facilitate support, training and communication of the EMP vision, goals and priorities across each commission.
4. **Form a Core staff EMP Team (Technical Advisory Committee/TAC)** to support leadership, implementation, and organizational development initiatives and priorities. We recommend that the TAC team members include representatives from Community and Fire Services, Development Services and Corporate Services Commissions, especially, Procurement, Human Resources, City Clerk, and Legal.
5. **Review and endorse EMP development roles and responsibilities.** The EMP Core team will have the responsibility of implementing the EMP within each commission or

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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department. Typically, roles include the EMP Manager to lead the EMP project team, one to three staff familiar with the particular assets and services within each commission to help identify associated environmental risks and opportunities, a legal representative to help identify relevant internal and external regulatory and voluntary requirements, a human resources representative to help identify roles and responsibilities for the EMP over the long term, training and organizational integration from a people perspective. Finally, the Town Clerk can help to establish EMP governance, EMP documentation and records and assist with any required by-laws that can be easily integrated with the organization's information management processes and structure.

6. **Select priorities for implementing the EMP within** each commission/department or theme. Selection should be based on the potential for greatest success. Influencing factors are readiness and willingness of candidate team(s), ease of implementation, financial resources, and potential to generate positive, measurable environmental benefits.
7. **Draft an EMP "priorities framework".** This framework will provide the "blue print" or "road map" on how the EMP will be implemented, using the insight and expertise of the TAC. The framework will define the specific priorities in enough detail that the EMP team are able to initiate and replicate key steps in the EMP implementation. There are many examples available on municipal websites for adaptation, including the City of Seattle.
8. **Proceed to address first steps for each of the EMP components**, as presented in Attachment A-7, regarding Vision/Policy, Governance, Stakeholders, Planning, Doing, Checking. Using the EMP guideline, implement requirements sequentially.
 - EMP Planning: Evaluate environmental risks and opportunities associated with Town assets, operations and services within the defined scope. Establish environmental priorities and set goals, objectives, targets, and metrics.
 - EMP Doing: Develop action plans addressing training, communications, operational controls, procedure requirements, and task management.
 - EMP Checking and Review: Track and report progress through stated environmental priorities, metrics, and organizational effectiveness. Review overall implementation plan performance and plan for continual improvement with pilot and corporate EMP stakeholders.
 - Evaluate success at the end of the first cycle and select the next "entity" for implementation.
9. **Explore external funding opportunities for support.**

The Core EMP team can leverage key success factors that have proven to support effective implementation of EMPs by other municipalities. These findings were based on the study of 22 municipalities that we conducted in North America in 2001. They include the following:

- Establish shared vision and responsibility by the EMP implementation team
- Confirm Council and Senior Management Commitment

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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- Confirm sufficient Environmental Management Resources (technical, financial, and human resources) to support the EMP
- Establish an EMP Leader whose enthusiasm and leadership supports the team
- Establish good project management (scheduling, resource management, change management, QA/QC)
- Ensure regular communication, feedback, and recognition by the EMP Leader among the team with staff

We have found success through a “learning by doing” approach for each EMP requirement. Typically, a full cycle takes between 12 to 24 months, depending on the availability of internal implementation team resources.

5.2 Environmental Priorities

Environmental priority-setting for EMP implementation on an annual basis would best be identified through the Planning activities associated with systematic environmental evaluation of environmental risks and opportunities. The Planning element of the EMP, in Section 4, provides recommendations on how to do this. The risk ranking focuses on the Town’s impacts on air, land, water, biodiversity, resources, and people associated with capital project planning, operations, and maintenance of civic assets, programs and services. Markham is in a unique position to make holistic and systems-based choices.

The following suite of environmental priorities will help with immediate implementation of the EMP. Priorities for an internally-focused EMP should be based on factors that would lead to the greatest impact (and which the Town has direct control over) and build upon existing programs. To help inform decision-making on targeting environmental priorities and with the guidance of the gap analysis, we suggest the following priorities be immediately addressed by the EMP office and TAC:

5.2.1 Theme: Air

Emissions Reduction: Implement the FCM-ICLEI Partners for Climate Protection Milestones. Using the PCP Milestone process: calculate greenhouse gas (GHG) emissions, create a corporate and community GHG emissions baseline and a target. Once the baseline is established, completing the Milestones within the PCP framework will help the Town reduce its GHG emissions to the targeted numbers and help to influence the Town’s role in climate change mitigation and adaptation. This initiative is linked to the Transportation Demand Management programs being developed by the Town.

Energy Management (to link regulatory requirements with voluntary commitments): For Town-owned and operated facilities, operations and services, direct efforts can be made to invest in process optimization and retrofitting, to reduce the criteria air and greenhouse gas emissions. This is linked with energy management including utilizing energy resources such as fossil fuel-based, clean-based, and renewable-based options. The program can be developed and proven internally and rolled out externally with business case information on the benefits and recommended actions. Finally, benefits associated with the environment, cost effectiveness, and leadership in technology innovation for clean and renewable energy.

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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The Town's responsiveness to climate change and Canada's commitments would also be demonstrated in this sphere.

Renewable Energy: Establishing a renewable energy purchase program for the Town of Markham would help to reduce peak demand, reduce dependency on traditional electricity and demonstrate leadership. This program can be developed and demonstrated internally and rolled out externally with business case information on the benefits and recommended actions. Benefits associated with the environment, cost effectiveness, and leadership in technology innovation for clean and renewable energy. The Town's responsiveness to climate change and Canada's commitments would also be demonstrated in this sphere.

Adopt and Implement the Green Fleet Transition Plan where all new vehicles for the Town's fleet will be hybrids or utilize alternative fuels such as biodiesel. This plan supports the Town's initiative to move towards more green procurement practices.

Enhance TDM: TDM should be considered a corporate initiative with support from the Office of Environmental Sustainability to ensure it remains an important focus for corporate GHG emissions reduction, trip reduction and multi-modal transportation planning. Transportation is identified as the largest contributor of GHG emissions in Southern Ontario. Supporting and enhancing employee trip reduction, carpooling and non-car based travel will help to significantly reduce Council and staff's environmental impact. In addition, reduced car use will create many co-benefits including reduced traffic congestion, improved staff and public health and reduce staff stress due to commuting. Action items for implementation might include a telecommuting policy, cross-corporate staff input on the bicycle master plan and an employee bicycle program where the Town acquires bicycles to facilitate alternative commuting options and improve employee health.

5.2.2 Theme: Land and Biodiversity

Natural heritage Strategy: As a means to mitigate GHG emissions, and address air, land and water issues, both corporately and in the community, a coordinated approach to enhancing and protecting natural heritage will protect biodiversity and assist with the Town's climate protection measures. The environmental policy review and the new provincial legislation around the greenbelt plan and Places to Grow could contribute to a natural heritage strategy that considers more than just the planning and development cycle. The natural heritage strategy might include a corporate commitment to an achievable natural heritage target (for example, 25% forest cover for the Town), methods to reduce the Town's impact on natural heritage such as pesticide reduction or elimination policies, updating natural heritage inventories and increasing or enhancing natural areas within the Town's parks to improve biodiversity. This initiative could be linked to development services and planning approvals and decision-making.

High-Performance Buildings: To improve energy efficiency, reduce GHG emissions, conserve water and reduce waste, the Town of Markham could create a policy to build only high performance facilities within its assets. To establish this as an ongoing program, a standard for high performing buildings would be adopted and used to build all new Town-owned facilities. There are several standards options around high performance buildings, including LEED, Green Globe and Green Leaf. This standard could be adopted once consultation has occurred with Town staff. Building only high-performing facilities will

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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establish the Town as a leader in environmental management and will also substantially reduce the environmental impacts associated with creating new buildings.

Risk management associated with contaminated sites: The town-owned and operated facilities, operations, and services can also include Town-owned and managed real estate. The environmental impacts to land, biodiversity, and water may be at risk across land areas of concern. The legal implications may also be of concern. Assessment of the risks, followed by development and implementation of a remediation program for the sites in question, and development of guidelines, could also be conducted in a way that reflects continual improvement in a graduated way an EMP Program Plan. A brownfields policy or program would assist the Town in understanding the current and potential future risks of both Town-owned and Town-assumed (e.g. through abandonment or tax arrears) real estate.

5.2.3 Theme: Water

Pollution Prevention: A coordinated approach to source protection, spills response and contaminated sites will assist the Town of Markham in strengthening this identified gap (weakness). This area may also include reducing or eliminating pesticide use, considering how to minimize impacts from fleet, operations, and salt management. Including environmental management in training, education and promotion will assist staff with tracking and monitoring current and emerging requirements.

Stormwater Quality: Many of Markham's old stormwater management ponds (SWMPs) mitigate water quantity but not water quality. To improve water quality in Markham's streams, downstream and to improve ecological health, retrofitting SWMPs for quality control is recommended as a long-term goal.

Drainage Master Plan: Markham will continue to develop over the next 20 years and will also, therefore, continue to reduce pervious surfaces that absorb rainfall, snowmelt, and other precipitation. Because this precipitation picks up oil, bacteria, pesticides and other pollutants as it runs into streams, rain storms and other wet weather events require a master plan to consider where the water is going currently and in the future and how to avoid, as much as possible, polluting other water bodies as it travels into them. Programs that may be recommended through a Drainage Master Plan might include downspout disconnection or rain barrel programs, stream rehabilitation, and wetland rehabilitation or storm water treatment wetlands. In addition, the Drainage Master Plan may want to consider water conservation initiatives and climate change adaptation and mitigation strategies that take into account decreased, or, increased and more severe, wet weather events in the future. This initiative may also be linked to urban design guidelines that support maintaining or increasing the amount of permeable services through the use of materials such as porous pavers.

5.2.4 Theme: Resources and People

Green Procurement: As featured in the enhanced EMP policy, green procurement offers an opportunity to eliminate or reduce negative environmental impacts early in the life-cycle of planning and operating Town assets, operations and services. We recommend the Town complete its effort on the current Green Procurement Policy and develop appendix specifications. This will lead to greening the Town's supply chain, reducing pollution and

waste, avoiding negative environmental impacts, and optimizing material and energy consumption. Green Procurement implementation could occur across the three commissions. This theme would provide the Town with an opportunity to be especially proactive, taking a life-cycle approach to materials procurement and management.

Compliance/Regulatory requirements: The Office of Environmental Sustainability would be responsible for coordinating, integrating, monitoring, and reporting on the EMP. It could also provide an intergovernmental relations function to assist with liaison and coordination efforts at the various levels of government. Through this function, the TAC could be assisted with compliance efforts and regulatory affairs and could also develop an approach to tracking current and emerging regulatory requirements and establishing resource requirements. This would include existing provincial requirements around pesticide use, vehicle emissions and spill response, as well as federal requirements such as the salt management plan.

Training, Education, Promotion, and Communication: The TAC would work with HR, Clerks and Corporate Communications to establish a coordinated approach to environmental communications, “branding”, documentation and incorporating environmental management into recruiting effort, and for training and education of staff.

Performance Measures/Life Cycle Analysis: Work with the TAC to establish an approach to life cycle analysis for EMP implementation. This could include developing performance measures, managing and tracking, reporting and supporting environmental management priorities. In addition, this could be how a “sustainability checklist” could be considered within the annual capital and operating budget process.

5.3 Beyond Vision, Governance, and Planning

Looking ahead to the next three to five years, implementation should be considered through the Planning cycle. By 2007, the Town of Markham will undertake a new strategic planning cycle, begin a Community Sustainability Planning process and initiate an Official Plan Review. Each of these planning priorities represents an opportunity to:

- Identify and prioritize key areas for change and improvement;
- Identify new directions, opportunities and future initiatives to establish Markham as an environmental leader;
- Identify any overlap or gaps between various municipal departments for the delivery of environmental initiatives and programs currently in Markham and enact change to reduce the overlaps or gaps;
- Identify priorities, new opportunities, initiatives and “state of the art” practices/ standards around all environmental matters regarding the Town’s organization, mandate and responsibilities; and
- Identify how the Town can encourage investment in the environment and achieve its goals over time.

To ensure a coordinated approach, a work plan that identifies the resources, methodology and approach to the EMP implementation would be an important first step for the Office of

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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Environmental Sustainability once established and has begun establishing the Next Steps identified in Section 5.1.

A brief example of how this work plan would inform and guide EMP implementation is provided below in Attachment A-8.

5.4 DOING

To implement the plans and initiatives developed based on the EMP priorities, the Town of Markham should explore funding opportunities, develop a structured reporting mechanism to assist decision-makers, and implement the governance structure and associated staffing requirements.

5.4.1 Funding Sources

The majority of EMP initiatives and programs implemented by the benchmark communities, discussed earlier in this report, were funded internally. External funding sources were sought out to enable implementation of very specific programs and actions to leverage support from environmental programs sponsored by various levels of government as an example.

There are various sources of external funding available to the Town of Markham to support programs and initiatives, which can be implemented as part of the EMP. Because there are always new sources of funding and funding proposals are often time-consuming and long-term, it may be worth considering a full-time position to oversee funding proposals in the future. Attachment A-9 summarizes current environmental funding sources.

5.4.2 EMP Performance Reporting

Performance reporting practices and protocols are considered important to help inform decision-making exercises. Formal reporting lends more rigour to corporate planning and budget preparation, and the benchmark municipalities found a variety of ways to achieve this rigour. For example, the Cities of Chicago and Seattle have established Environmental Action Agendas. The City of Calgary prepares a State of the Environment Report. Various measurement and reporting systems have been adopted, including ISO 14001 standard and the Global Reporting Initiative (GRI). While formal reporting is commonly practiced, the style of reporting tends to be individually fashioned to respond to the organization-specific flavour.

Performance reporting provides a basis for future decision-making and it is based on both the environmental health of the Town in absolute terms and the effectiveness of the EMP, in terms of organizational capacity. Together, these two types of measurement help to evaluate the overall performance of the EMP. By declaring the scope of the EMP (i.e. an internal commission or the Town's administration as a whole), the Town is better able to provide interested stakeholders (both internal and external) with an objective tool to report on progress, identify trends, and assist in decision-making, budgeting, and programming.

While the focus of this project is on developing an internally-focused EMP, the EMP performance reporting activities would be established to be efficient, effective, and scalable

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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for identifying, tracking, and reporting. In the future, the Town may also want to have a reporting process that is also auditable and verifiable.

In light of this, the EMP staff involved in the EMP Planning and Checking and Review activities would consider absolute and organizational capacity metrics that have the following attributes:

- i) **Consistency:** within and across commissions on measurement and reporting methodologies to ensure comparability.
- ii) **Completeness/Relevance:** Report on pre-defined metrics as they relate to direct and significant environmental risks associated with the Town's operation of assets and services.
- iii) **Accuracy:** The information reflects quality and credibility and the process of generating environmental information is controlled and documented.
- iv) **Transparency/Verifiability:** All measurement methodologies, assumptions, and methodologies are documented and communicated so that they can be duplicated in the future, as well as audited.

In setting up reporting templates, it is recommend the Town consider the GRI standard, ISO 14001 standard, and the Town of Markham's own Performance Measures Document in developing its tracking and reporting processes. This would provide the flexibility, adaptability, and comparability for environmental reporting across commissions internally, as well as comparability between other municipal entities. This would establish a basis from which to expand reporting across subsequent commissions and/or departments, internal and external environmental management reporting and expansion of reporting content to include broader sustainability content such as socio-economic information.

The GRI is an international, multi-stakeholder process and independent institution whose mission is to develop and disseminate globally applicable sustainability reporting guidelines. The GRI was created to address the growing need to standardize reporting measures and to increase the level of disclosure so that the information is transparent, credible, and comparable. GRI guidelines are voluntary and used by organizations to report on the economic, environmental, and social performance of their activities.

The GRI Guidelines are categorized into five main reporting elements and often form the table of contents of reports, including the following:

- Vision and Strategy
- Profile
- Governance Structure and Management Systems
- GRI Content Index
- Actual Performance Indicators

Within each reporting element there are specific indicators. Core indicators are classified as those that are relevant to most reporting organizations and are of interest to most stakeholders.

Below are the five main reporting elements and descriptions of the GRI.

- **Vision and Strategy** – Description of the Town’s strategy with regard to environment and sustainability, including a statement from the Mayor.
- **Profile** – Overview of the Town’s structure and operations in general terms.
- **Governance Structure and Management Systems** – Description of the Town’s EMP structure, policies, and input from Stakeholders and explanation of the Planning, Doing, and Checking.
- **GRI Content Index** – As a cross-reference, a table supplied by the Town identifying where the information listed in Part C of the GRI Guidelines is located within the Town’s actual report. The Town is only obliged to report on GRI indicators and metrics that are relevant to its own organization.
- **Performance Indicators** – Measures of the impact or effect of the reporting organization divided into integrated economic, environmental, and social performance indicators.

As the Town is just beginning with environmental reporting and focusing on internal operations and assets, a focus would be made on Environmental Performance Indicators and metrics-both absolute and those relating to organizational capacity would be profiled.

5.5 Phasing EMP Organizational Structure Implementation

Internally-focused EMPs usually focus on city operations that pose the most environmental risk such as solid waste, water and wastewater infrastructure, and transportation services. Typically, these operations pose the greatest risks directly to the environment.

With this in mind, it is suggested that the EMP organizational structure implementation be phased with the Office of Environmental Sustainability being established initially within the Fire and Community Services Commission in 2006. This organizational structure should be reviewed as part of the strategic plan review, community sustainability planning process and the Official Plan review, all expected to be completed by 2007. The Manager of the Office of Environmental Sustainability should be prepared to report on the progress of the initial steps of the EMP implementation, along with performance reporting, and should also be prepared to propose modifications or changes to the organization structure to ensure the EMP continues to full implementation. Phasing needs to coincide with the Town’s annual budget and planning cycle to ensure that resources and staff are in place to support the Manager and Office of Environmental Sustainability.

The advantage of this approach ensures organizational change and development scaled at a level that allows the broader internal EMP stakeholders to evaluate successes, best management practices, and early comparability with other municipalities.

The disadvantage of this approach involves setting the pace for organizational change, as only one department would be involved. Cross-commission communication and program integration would only be achieved once the whole organization is engaged in the EMP implementation.

Vision/Policy	Governance	Stakeholders	Planning	Doing	Checking
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5.5.1 Staffing and Costing Implications

To help the Town estimate staffing and financial costs, we have drawn from our previous experience, the experiences of the benchmarking organizations, and the experience of others. Estimating resources are a function of the scope of the EMP and the availability of internal EMP team members.

Staffing for an Office of Environmental Sustainability would require a dedicated position by a professional with program planning, communications, management, and environmental program expertise. This does not mean that the Town of Markham would need to hire new staff to resource the EMP office. Markham currently has two Environmental Leadership Managers, one of whom could be reallocated to an Office of Environmental Sustainability, thereby reducing the FTE impact on the Town. Reallocating a FTE is beneficial because the resource already has the internal knowledge of the environmental portfolio, understands the culture of the organization, and will have an established office/location within the organization.

In addition to the Manager, staff resources would be required within each commission to sit on the TAC and coordinate and support EMP implementation cross-commission. This would require the support of senior management to ensure that the time necessary to implement the EMP is understood and acknowledged in day-to-day operations. As the cycle of plan, do, check, act is underway, involvement and commitment from the TAC will vary. The amount of time required to resource EMP implementation would also vary by commission and also by initiative but would generally require part-time support in each commission.

Beyond staffing the TAC and coordinating within each commission, other staff resources will be required on a part-time basis to support EMP implementation, coordination and integration. This part-time support can vary in scale. Input and coordination with the following staff would be required by the EMP Manager and/or TAC:

- Legal – for assistance on identifying compliance, legal issues and other requirements.
- City Clerk – for assistance with governance, by-laws, central files, document control and records keeping. Ultimately, Clerk support would be necessary, should the EMP become a community plan, and to support civic engagement, intergovernmental relations.
- Human Resources – for assistance on recruiting, training, performance evaluation, and recognition activities.
- Corporate Communications – for assistance on internal communications such publications production and dissemination.
- Task managers – as required, drawn from focal commissions and departments to assist in environmental risk ranking, defining operational requirements, implementing specific programs and activities, and engaging in future EMP budgeting, planning.

Estimated external support costs are provided in Attachment A-10.

5.5.2 Monitoring and Reporting

For context and methodology on the environmental performance measures, the Town should leverage the substantive work already outlined in its “Performance Measures

Document” (January 2004). Environmental measures and indicators associated with planning and management of internal operations, assets, and services would include: Green Lands, Built Form, Green Infrastructure, Open Spaces, and Transportation as they related to Town owned and managed assets and operations. Proposed EMP reporting guidelines are presented in Attachment A-6.

In summary, with the three guidelines mentioned, the EMP report structure would integrate the GRI standard for overall structure, the Markham Performance Measures for specificity on relevant indicators, and the ISO 14001 standard on effectiveness of the management system components of the EMP. Once the Town has selected its preferred Implementation Scenario, a refined reporting guideline would be developed in detail. In the interim, a preliminary format is provided in Attachment A-11.

6. Conclusion

The EMP is intended to provide the Town of Markham with an understanding of the direction in which the corporation is moving environmentally and of how the Town will realize established EMP goals, objectives, and implementation. The next step for the EMP implementation is providing details around governance, roles and responsibilities and establishing policies and performance measures that will set the direction for the EMP TAC and management. Ultimately, performance measures will lead to monitoring and reporting that describes the tasks and responsibilities for implementing and communicating the EMP over time.



ATTACHMENTS

Attachment A-1 Environmental Programs	Community & Fire Services Commission	Development Services Commission	Corporate Services Commission	Administration & Legal (CAO Office)	Markham Energy Conservation Office (MECO)	External Stakeholders
Environmental Management Plan	X	X	X	X	X	X
Markham Environmental Sustainability Fund	X					X
Criteria Air Contaminants / GHG						
Anti-Idling Bylaw and Education	X		X			X
Green Fleet Research Program	X					
Smog Alerts	X					
Kyoto Committee	X	X	X	X	X	
GTA Clean Air Committee	X	X	X	X		
Energy Conservation & Alternatives						
Solar Thermal Project		X			X	
Transportation Demand Management		X				X
Bike Paths and Trail Systems		X				X
Land Use Planning						
Pesticide By-Law and Education	X		X			X
West Nile Virus Fund	X					X
Water						
Markham Small Streams Study		X				
Ground Water Report		X				
Storm Water Management		X				
Green Buildings						
Green Buildings Program					X	
Green roof program					X	
Better Building Partnership					X	
High Performance Buildings					X	
Cool Shops Program					X	
Combined Utility Metering Pilot	X		X		X	X
At Work Energy Conservation Program	X	X	X	X	X	
Energy and Environmental Software System	X					
Waste Management						
"Mission Green" Municipal Recycling Program	X					X
Public Space recycling (95 locations)	X					X
3 Bag Limit/Bag Tag Curbside Refuse Collection	X					X
Curbside Leaf & yard material collection	X					X
Recycling receptable purchase program	X					X
Apartment recycling program	X					X
Electronic Equipment Recycling Depots	X					X
Compost and wood chip mulch give-aways	X					X
Green Procurement						
Green Procurement Policy		X	X			
Biodiversity Conservation / Restoration						
Communities in Bloom / Markham Blooms	X					X
Adopt-A-Park Program	X					X
Greenlands Master Plan						
Rouge Park North Development Plan		X				
Markham Conservation Committee		X				X
Markham Environmental Land Acquisition Fund		X				
Rouge Park North Development Plan		X				
Oak Ridges Moraine Initiative		X				
Provincial Green Belt Plan		X				

X - Participating Commisions, Departments, and Stakeholders

**Attachment A-2
Gap Analysis**

Integrated Environmental Management Plan Components	Strengths	Gaps
Vision and Policy Commitment to environmental health <ul style="list-style-type: none"> • Environmental compliance • Targets and programs established to improve air, water, land, natural resources, biodiversity 	<ul style="list-style-type: none"> • Genuine commitment • Special committee • Part of business planning 	<ul style="list-style-type: none"> • Lack of specific commitment to compliance, prevention and continual improvement
Senior Management Commitment / Governance Visible Leadership at Council and Senior Administration Level Resources (time, money, people)	<ul style="list-style-type: none"> • Council commitment • Council and staff motivated 	<ul style="list-style-type: none"> • No linked governance, roles, responsibilities documented • Ad hoc decision-making • A number of environmental champions that work in different commissions and lack a coordinated approach • Lack of resources to implement council initiatives • No Environmental Engineer • Short staffed in Legal • No senior level position responsible for environmental management or sustainability
Stakeholder Input Internally Focus on Internal Operations (direct influence) Internal and External Focus for Operations and the Community (direct and indirect influence)	<ul style="list-style-type: none"> • Council involved in committees of staff and community stakeholders 	<ul style="list-style-type: none"> • Council alone defines much of Town policy • Difficulty dealing with external stakeholders Need an action plan for internal efforts that can inform an external plan for stakeholder engagement
Planning Establish Objectives, Targets, Programs	<ul style="list-style-type: none"> • Committees focus on external issues – air quality, green space, natural heritage and features, growth • Internal focus on greening infrastructure, fleet and facilities, waste and energy management and pesticide use • Considers return on investment 	<ul style="list-style-type: none"> • No systematic process for evaluating and prioritizing • No approach to track current or emerging legislation, or aging infrastructure • No process to establish environmental performance targets, objectives, and metrics • No risk management process

Attachment A-2
Gap Analysis

Integrated Environmental Management Plan Components	Strengths	Gaps
Doing Team Development with Defined Roles and Responsibilities	<ul style="list-style-type: none"> • Paperless Agendas • Strong energy conservation ethic • Mission Green Smog Alert Response plan, West Nile Virus program, green fleet initiatives, alternative fuels 	<ul style="list-style-type: none"> • No defined roles and responsibilities for staff or council related to environmental management • No internal communication plan
Action Plans and Programs Guidelines, Policies, and Procedures Training Communication Working with Suppliers and Contractors	<ul style="list-style-type: none"> • Maintenance Manual for Stormwater • EPR plan established • New full-time staff receive orientation • Annual staff reviews • Town has Manager of Internal Communications • Video news broadcasts • Fairly good internal website 	<ul style="list-style-type: none"> • No central filing • No process to manage and track specifications • Few staff trained for EPR • Environmental management not included in training or reviews •External website difficult and confusing • Commission silos • Green Procurement • No policy for current suppliers and contractors
Checking and Reporting Tracking Performance Corrective Action/Mid-Course Correction/Adaptive Management Reporting Internally and Externally Third Party Verification Annual Review	<ul style="list-style-type: none"> • Individual performance reviews • “Way of Work” culture emerging • Annual reviews occur to some extent 	<ul style="list-style-type: none"> • Little reporting to staff and council • No systematic tracking of performance • Reviews are not integrated • No long term reporting • Lack of records • No comparative benchmarking

ATTACHMENT A-3

TOWN OF MARKHAM COMPARISON TO MUNICIPAL CONTEXT

Key Component	Municipal Context	Is it Desired by Markham? Yes/No?	Is Markham Doing that Now? Yes/No?	Critical Factor for future success in Markham Specific commitments
Vision/Policy	Corporate Vision and Policy Commitment Established, documented and endorsed	Yes	No	Corporate Level and Council Champions
Governance	Single Department/Business Unit with designated Responsibility Committee of Council Executive Leadership team	Yes	No	Single or centralized Business Unit with EMP responsibility
Doing	Formal Plans and Priorities established Energy Management, Pollution Prevention, climate protection, community health as priorities	Yes	Yes	Establish environmental agenda and performance Scale up programs to all areas of Markhams operations
Checking	Formal reporting on annual basis – Action Agenda and State of the Environment are common tools	Yes	No	Governance and Reporting structure built into business planning cycle

ATTACHMENT A-4
EMP DESIRED FUTURE CONDITIONS

Integrated EMP Key Component	Desired Future Condition for Town of Markham
Vision /Policy	<ul style="list-style-type: none"> • An ENGAGE document that articulates the inter-linkage between “human and environmental health” and “create a healthy ecosystem.” • The Town’s Environmental Vision and Policy that incorporates: <ul style="list-style-type: none"> From the Natural Step: Avoid concentrations of substances <ul style="list-style-type: none"> – from the Earth's crust and burning of fossil fuels – substances produced by society such as persistent organic pollutants – degradation by physical means through physical destruction of the regenerative capacity of the biosphere From the Melbourne Principles: <ul style="list-style-type: none"> – Principle 3: Recognize the intrinsic value of biodiversity and natural ecosystems, and protect and restore them – Principle 4: Enable communities to minimize their ecological footprint – Principle 5: Build on the characteristics of ecosystems in the development and nurturing of healthy and sustainable cities – Principle 6: Recognize and build on the distinctive characteristics of cities, including their human and cultural values, history and natural systems – Principle 7: Empower people and foster participation – Principle 8: Expand and enable cooperative networks to work towards a common sustainable future – Principle 9: Promote sustainable production and consumption, through appropriate use of environmentally sound technologies and effective demand management. – Principle 10: Enable continual improvement, based on accountability, transparency and good governance <p>And finally, from ISO 14001</p> <ul style="list-style-type: none"> – A commitment to pollution prevention, regulatory compliance and continual improvement – The organization shall provide a process for implementation and improvement – Each staff member has a responsibility to assist in the implementation
Governance	<ul style="list-style-type: none"> • An integrated environment and sustainability advisory group of core Council and City with specific-themed sub-committees • Improved and integrated decision-making for environment and sustainability issues • An office of environment (or Sustainability) established in Corporate Services with staff and defined roles and responsibilities with matrix to commission leaders • Structure could see corporate level focused externally and commission level focused internally; a matrix structure to foster cross commission communication • Defined roles between Council and Staff and Commissioners and linked definitions of roles and responsibilities

ATTACHMENT A-4
EMP DESIRED FUTURE CONDITIONS

Integrated EMP Key Component	Desired Future Condition for Town of Markham
Stakeholders	<ul style="list-style-type: none"> • Environmental performance is a “Way of Work (WOW)” and distinct projects are recognized • Internal and external stakeholder groups are engaged in consultation and input in decision-making around internal (initially) and external (eventually) decision-making • Stakeholder engagement is linked with the long-term strategic planning process and updating of the Official Community Plan
Planning	<ul style="list-style-type: none"> • Due diligence, legal compliance, accountability, and prioritization is emphasized and supported by a risk management policy and plan • Development standards support conservation or rehabilitation of ecosystem health and biodiversity and support Markham's growth • The EMP becomes a standing element of the Town's Official Plan • Decision-making is systems-based, adaptive and proactive • Current and emerging legal requirements are tracked in a coordinated process • There is a defined process for integrating Corporate goals, objectives, and targets (as per recommended standard) • Environmental Management responsibilities are aligned to the appropriate functional area of the Town's operations • Return on Investment is evaluated in terms of quantitative measures (financial input for environmental result/benefit) and qualitative measures in terms of benefits to people (human health) and biodiversity • Development approvals are linked with capital project programs including retrofits, inspections of new development, and capital projects and, consider tax base implications • An Environmental Fund is available to support initial action on new Town priorities and initiatives • A 100 year Asset Management Plan has been developed to help achieve urban sustainability • Risks and Liabilities are better identified and linked with decision-making • Cross Commission communication is increased and results in more streamlined planning
Doing	<ul style="list-style-type: none"> • Staff and Resources are in place to support the EMP programs and initiatives • Environmental management and performance is linked to training, and communication • Environmental Management orientation and training is established and focuses on: <ul style="list-style-type: none"> – A Way of Work (WOW) culture – The EMP, related environmental policies and the process for delivering on them – Environmental risks associated with roles and responsibilities

ATTACHMENT A-4
EMP DESIRED FUTURE CONDITIONS

Integrated EMP Key Component	Desired Future Condition for Town of Markham
	<p>Communications</p> <ul style="list-style-type: none"> • Regular reports and updates form the CAO and Council • Environmental Champions are in every commission • The Town has adopted a Municipal Code that provides guidance for communications and filing • External communications plan is established and improved interaction with governmental agencies is the norm <p>Operational and Controls</p> <ul style="list-style-type: none"> • Operational controls address environmental issues in current operations and maintenance • MECO has provided specifications on energy conservation across Commissions <p>Contractors and Suppliers</p> <ul style="list-style-type: none"> • Green Procurement Policy is linked with RFPs and Contracting and demonstrates consideration of life-cycle analysis and cradle-to-cradle principles <p>Emergency Preparedness</p> <ul style="list-style-type: none"> • The EPR includes an internal and external community communications component • Regular emergency drills are conducted and evaluated • EPR is a WOW
Checking	<ul style="list-style-type: none"> • A risk management process is in place and enforced • Environmental performance progress is documented in inventories and records • Environmental performance information is in BUP reports • EMP is a regular topic at CCC retreats • Incidents and corrective actions are reviewed through the Business Plan to ensure continual improvement • CAOs Strategy Group is considered an option for internal auditing • A Management Review is conducted once a year and report card issued

A-5 Sample Environmental Risk Ranking Formula

Risk Score =(Envl Effects + Direct Effects + Indirect Effects)/3 x (Likelihood % + Past History)/2 x (Control)

Score	Effects			Likelihood	Past History	Control
	Environmental	Direct	Indirect			
20	Catastrophic, irreparable	Jail, bankruptcy; Very high burden, penalty or vitally important to firm	National headlines, disastrous public relations	85-100% probability of effects; has occurred daily	Monthly	Direct control over scope and intensity of aspect
15	Major, extensive, long-lasting	Large fines, High liability, High costs, corporate concern; High burden, penalty or importance to strategic goal	Local headlines, bad community public relations	50-85% probability of effects; has occurred monthly	Quarterly	Influence over scope and intensity of aspect through contract or purchasing power
10	Reportable, regional	Average fines, liability, costs, departmental concern; Average burden, penalty or importance to strategic goal	Some media attention, bad local public relations	15-50% probability of effects; has occurred quarterly	Once/Year	Influence over scope and intensity of aspect through policy, company culture or training
5	Minor, localized	Low liability, Low costs, Within existing budgets; Low burden, penalty or importance to strategic goal	Effect on directly affected individuals only	2-15% probability of effects; has occurred annually	Once/3 years	Some ability to influence scope and intensity through incentive, disincentive programs
1	Insignificant	None / Insignificant	Insignificant	Less than 2% probability of effects; has never occurred in past	Never	No influence or control

Attachment A-6
EMP Reporting Guideline

EMP Element	Specific Management System Requirements as They May Apply to the EMP	Metric and Reporting Content
Vision/Policy	Senior Management define, endorse, communicate, and document the Environmental Management Policy and Plan.	<p>Metric: Senior management awareness and commitment for EMP and their role in it.</p> <p>Reporting Content: Senior Management reported commitment and endorsement on a regular basis. Appears on internal and external Town communications.</p>
Governance	<p>Define the Roles, Responsibilities, and Authority and inter-action between and across decision-makers in the organization, including:</p> <ul style="list-style-type: none"> • Single Department/Business Unit or Cross Enterprise with designated Responsibility • Committee of Council • Executive Leadership Team. 	<p>Metric: staff awareness for their EMP roles and responsibilities.</p> <p>Report Content: Summary of documented roles and responsibilities at a high level manner.</p>
Stakeholders	Identify key representatives within the organization to contribute to the EMP's policy, prioritization of environmental risks, opportunities and programs, and for feedback on the success of EMP initiatives.	<p>Metric: Relevant management and staff are familiar with the process of obtaining input from key audiences.</p> <p>Reporting Content: Identification of key representatives through internal consultation and external/community survey. Summary of roles for Council, Mayor and Commissioners, and the EMP manager and EMP Core Team.</p>
Planning	<p>Aspects Identification:</p> <ul style="list-style-type: none"> • Establish and subsequently review Markham's stated and documented method to identify environmental aspects (sources of emissions, pollutants), prioritize risks and opportunities and assess appropriateness given policy, operations and legal and other requirements. <p>Identification of legal and other requirements:</p> <ul style="list-style-type: none"> • Both required and voluntary. <p>Establish environmental goals, objectives, targets and programs:</p> <ul style="list-style-type: none"> • With the input of key internal stakeholders and consensus on the mechanism or formula for evaluating environmental risks, issues and opportunities, a prioritization exercise can occur. Objectives targets and program details would support address the key priorities. Many towns and cities use the ISO 14001 Planning procedure standard. Still, there is a wide and diverse basis for including identifying priorities. <p>Under the banner of environment however, the Town would want to focus on opportunities to improve air and water quality, reduce GHG emissions, improve biodiversity</p>	<p>Metrics: Can be defined in both Absolute measures and EMP Organizational Capacity measures.</p> <p>Absolute Metrics would reflect direct measures of environmental quality impacted by the Commission or entire Town management. Absolute metrics examples include: annual average water turbidity, GHG reduction, percentage of tree coverage, percent waste to landfill vs. percent waste diverted.</p> <p>EMP Organizational Capacity Metrics would include: regulatory compliance, per cent staff engaged in EMP training.</p> <p>See City of Calgary and City of Seattle websites for examples.</p>

Attachment A-6
EMP Reporting Guideline

EMP Element	Specific Management System Requirements as They May Apply to the EMP	Metric and Reporting Content
	<p>and habitats in absolute terms. Objectives and targets could also be established to ensure continual improvement for the Town's organizational ability or capacity to improve environmental performance. This would include training, awareness and integration with organizational procedures to deliver civic services and pollution prevention.</p> <ul style="list-style-type: none"> The Town would also want to measure progress over time and this would require some ground-truthing of baseline metrics and conditions. 	<p>Reporting Content: Initially the EMP report would describe the initiation of the EMP process, the planning and prioritization and perhaps initial baseline or benchmarking.</p> <p>Future reports would track progress against goals and targets using selected metrics.</p>
Doing	<p>Confirm appropriate resources for establishment and maintenance of EMP:</p> <ul style="list-style-type: none"> Confirm appropriate level of resources (for example, staff, money, time, and technical resources) to support the EMP Manager, coordinating functions and individual program initiatives. This may also include funding for training and reporting. <p>Documentation:</p> <ul style="list-style-type: none"> A guidance document or manual is often used to define the EMP and improvement of it. The guidance document would define each element in sufficient detail for the EMP Manager and key EMP representatives to conduct their work and implement the EMP. The scope and magnitude of the document varies in complexity across municipalities. Several cities use electronic and web-based information management on a shared server site. <p>EMP Program Development and Implementation:</p> <ul style="list-style-type: none"> EMP program plan articulates goals, objectives, approach, resource requirements, budget and schedule. <p>Communications:</p> <ul style="list-style-type: none"> Evaluate internal and external communication reporting requirements, current practices for effectiveness and efficiency and possible information solutions. Typically this includes use of internal newsletters and websites for EMP information and progress. It can also include open-houses, community meetings and internal reports. <p>Training:</p> <ul style="list-style-type: none"> Ensure staff is appropriately trained in EMP requirements as they relate to their job, roles, and responsibilities. Evaluate awareness, knowledge, and behaviour over time. The Human Resources department would be best able to help to formalize an EMP training process. Internal EMP basic training is often used as part of new hire's orientation and staff refresher courses. Specific training is developed for specific roles and can be both formal and informal. 	<p>Reporting Content would track progress toward implementing programs, development of an EMP.</p> <p>Documentation: Reporting content on the development and application of the EMP guidance manual.</p> <p>EMP Program: Reporting content would summarize action taken and results achieved (in absolute metrics and organizational capacity terms).</p> <p>Communication: Reporting content would define new EMP information developed to raise awareness, improve decision-making to meet the EMP goals and objectives.</p> <p>Training Metrics: Summary of training needs assessments and subsequent on the job performance improvement as a result of training.</p>

Attachment A-6
EMP Reporting Guideline

EMP Element	Specific Management System Requirements as They May Apply to the EMP	Metric and Reporting Content
	<p>Working with Contractors and Suppliers:</p> <ul style="list-style-type: none"> Through the Green Procurement Policy, provide guidance, specifications, training and/or communications on the EMP and its relevance to contractors and suppliers. Specifications on RFP's and procurement for large contracts can include environmental requirements to help fulfill the intent of the policy. <p>Emergency Preparedness and Response:</p> <ul style="list-style-type: none"> Establish, practice and maintain Emergency Preparedness and Response Plan with City staff and contractors. Communicate the purpose and value of the EPR and the responses outlined within the EPR 	<p>Contractor and Supplier Metric: Metrics would include reduction in purchase of products and services that may have led to pollution. For the annual EMP Report, stories can also capture local business development with preference for contracting of environmentally friendly-products and services.</p> <p>Emergency Preparedness and Response: Frequency and results of drills, lessons learned from major incidents should be reflected in the annual EMP report. Number of communications to staff and public on value, purpose and how to participate in the EPR report.</p>
Checking and Review	<p>Monitoring, Measurement, and Reporting:</p> <ul style="list-style-type: none"> The Town would choose a schedule and process for tracking and reporting progress over time. The objectives, targets and metrics would form the basis for this information, as well as defining methods for tracking and reporting activities. Canadian municipalities are beginning to advance the nature and sophistication of reporting. It is recommended to focus the exercise on generating information that is most pertinent to the EMP management, Mayor, Commissions and Council and eventually the public. Review progress regularly. <p>Corrective (Improved) Action:</p> <ul style="list-style-type: none"> To help improve the organizations capacity or ability to manage environmental priorities and programs, a culture and/or process can be encouraged to invite suggestions for improvement, provide feedback on lessons learned. The Town's Way of Work mentality is an excellent foundation on which to build the environmental ethos more deeply in the organization. 	<p>See Table X for a sample of CH2M HILL's EMP goals, programs and metrics.</p> <p>Corrective Action metrics tend to reflect EMP Organizational Capacity including: Number of noteworthy corrective actions that may become "Ways of Work" (WOW).</p>
	<p>Audit and Management Review:</p> <ul style="list-style-type: none"> The Town will want to evaluate its progress and experimentation with the EMP. A regular and systematic process will help to inform future decision-making. At a minimum it would include an annual review with key internal stakeholders of EMP continual improvement, subsequent planning, and implementation. CH2M HILL recommends building in an EMP review session with the Commissioners and CAO on an annual basis. This should occur in advance of final budgeting and planning. 	<p>Audit and Review Program:</p> <p>Reporting Content would summarize any internal audit activity or management review.</p> <p>Typical reporting requirements are minutes from a standing agenda that reviews programs, initiatives and environmental improvements. Legal compliance performance, incidents and corrective actions and any feedback from internal evaluations and audits.</p>

ATTACHMENT A-7
FIRST STEPS FOR EACH EMP ELEMENT

EMP Component	First Steps for Each EMP Component	Internal Stakeholder(s)
Vision / Policy	Refine, endorse, document, and communicate an enhanced Environmental Management Policy.	EMP Manager with Senior Management and Council.
Governance	Review, refine and adopt EMP roles, responsibilities, and authority for the EMP by one single commission or the chosen entity. Seek input and guidance by the EMP Core Team and Human Resources.	EMP Manager, CAO and Commissioner(s) and Human Resources Representative.
Stakeholders	Select EMP Core Team and key representatives within the organization to contribute to the EMP's policy, prioritization of environmental risks, opportunities and programs, and for feedback on the success of EMP initiatives.	Potential Core EMP Team members: Vicky McGrath, Mavis Urquhart, Stu Taylor, Lily Duoba, the Senior Engineer, and Lorenzo X and (the woman from MECO). Plus, part-time input from Human Resources, Legal and City Clerk.
Planning	Aspects Identification: List assets and services and environmental regulatory requirements associated with the pilot EMP as part of the environmental management risk ranking prioritization. Set objectives, targets, and metrics for the FY 2006-2007.	EMP Manager and EMP Core Team.
Doing	Documentation: Write the EMP guidance document/manual in sufficient detail for the EMP Manager and key EMP representatives to conduct their work and implement the EMP. Program Implementation: Based on the priorities established in Planning, develop program plans for the year. Working with Contractors and Suppliers: Finalize Green Procurement Policy, provide guidance, specifications, training, and/or communications on the EMP and its relevance to contractors and suppliers. Specifications on RFP's and procurement for large contracts can include environmental requirements to help fulfill the intent of the policy.	EMP Manager and EMP Core Team potentially with an external advisor.
Checking and Review	Monitoring, Measurement and Reporting: Develop tracking and reporting process for pilot EMP.	EMP Manager and EMP Core Team potentially with an external advisor.

ATTACHMENT A-8

SAMPLE EMP IMPLEMENTATION WORK PLAN

SAMPLE EMP IMPLEMENTATION WORK PLAN	TIMING	CHALLENGES	CHAMPION/RESOURCES
Endorsement of EMP by Council – endorsement of governance, organizational structure, EMP document, objectives, vision, priorities, staff roles and responsibilities	2006 Q2	Education and promotion of EMP to Council members; Election year	Council, CCC, Senior Management Team (commissioners, directors), Victoria McGrath, Manager Environmental Leadership
Governance – Establish Environmental Management Committee reporting to General Committee	2006-07	Election, New Council, New Year, New Strategic Priorities	Council, CCC/Senior Management Team, EMP Manager
Office of Environmental Management/Sustainability – Within Fire & Community Services Commission, initially, reallocate FTE to Manager, Environmental Sustainability Office to: establish governance, champion and coordinate EMP vision, implementation, performance measures, monitoring, reporting and communications Establish Office of Environmental Sustainability, with Manager, Environmental Sustainability, and supporting conservation efforts, MECO and TDM, within CAO's Office; Expand role of Office to include environmental intergovernmental relations and civic engagement	2006 Q1 2007-08	No new FTEs – FTE reallocation; Start-up; Communication Plan	CCC/Senior Management Team, EMP Manager
Assemble TAC – EMP staff Leads for each commission who will be responsible for priority setting, implementation, coordinating, measuring and disseminating the EMP information within their commission and reporting this information to the EMP Manager. This includes needs assessment for resource requests, job impacts, regular meetings and meaningful input into the EMP process.	2006 Q3	Mobilizing core staff with already busy jobs, training, communications, promotion and education	Senior Management Team, EMP Manager, TAC
Priority – setting for EMP Phase II – Working through the planning cycle, what EMP priorities will be implemented, develop a work plan and schedule for implementation. Will include EMP structure, responsibilities, oversight, performance indicators and measures, monitoring, corrective action, biennial reporting. Will include compliance issues, and will also include education, training, communications and budgets.	2007 Q1/2	New Council, New Year, new strategic priorities, Strategic Plan, Official Plan Review	Senior Management Team, EMP Manager, TAC

ATTACHMENT A-8

SAMPLE EMP IMPLEMENTATION WORK PLAN

SAMPLE EMP IMPLEMENTATION WORK PLAN	TIMING	CHALLENGES	CHAMPION/RESOURCES
Policy initiatives – Establish “quick start” policies, such as Green Procurement, Pesticides and Green Fleet Transition Plan that will provide early successes and allow the opportunity to develop performance measures and indicators, establish a process around life-cycle analysis and monitor outcomes	2007 Q2/3	Coordination around Strategic Plan, Official Plan Review, Community Sustainability Plan	Council, Senior Management Team, EMP Manager, staff
Performance Measures Develop indicators and performance measures around priority policies, programs or projects	2007	Establishing measurable targets and setting appropriate objectives	TAC, EMP Manager
Reporting and Communication Plan Establish a regular reporting schedule and develop a process for coordinating information and efforts	2007/8	Community Sustainability Plan, Strategic Plan, Official Plan Review	Senior Management, TAC, EMP Manager

ATTACHMENT A-9
CURRENT ENVIRONMENTAL FUNDING SOURCES

Program	Funding Source	Description
Green Municipal Enabling Fund (GMEF)	The Federation of Canadian Municipalities	<p>GMEF is a \$50M fund that provides grants for cost-shared feasibility studies and field tests to improve the quality of air, water, and soil through greater energy efficiency; the sustainable use of renewable and non-renewable resources and more efficient water, waste, and wastewater management; as well as sustainable transportation services and technologies and sustainable community planning.</p> <p>For feasibility studies, applications can be up to \$350,000, with matching funds from other supporting agencies at 50 cents to the dollar. FCM is open to "pushing the envelopes" with senior staff and elected officials. Example: Queen's Park, Toronto.</p>
Green Municipal Investment Fund (GMIF)	The Federation of Canadian Municipalities	<p>GMIF is a \$200M permanent revolving fund that supports the implementation of highly innovative environmental projects. Through GMIF, a municipal government can borrow at preferred interest rates of 1.5 percent below the Bank of Canada bond rate. Partners are also eligible for loans at attractive rates. The Fund also provides grant funding for pilot projects for initiatives with significant environmental impact and replication on a regional or national basis. In addition to the categories above, the GMIF also includes integrated community projects such as community energy systems.</p> <p>Brownfield RFP's have closed for this year; however, RFPs for Planning and Energy will be out in spring 2006.</p>
Renewable Energy Technologies Program	Government of Canada Action Plan 2000 on Climate Change	<p>Supports Canadian industry efforts to develop renewable energy technologies, including active solar, wind energy, small hydro (less than 20 megawatts) and bioenergy. Activities also include technology development and laboratory services for bioenergy technologies and the transfer of renewable technologies abroad. Eligibility includes stakeholders in the energy industry, such as manufacturers, developers, consultants, utilities, provincial governments, and other federal departments.</p>
The Sustainable Development Technology Fund	Government of Canada Action Plan 2000 on Climate Change	<p>Sustainable Development Technology Canada (www.sdtc.ca) is a foundation created by the Government of Canada that operates a \$550M fund to support the development and demonstration of clean technologies — solutions that address issues of climate change, clean air, water quality, and soil to deliver environmental, economic, and health benefits to Canadians.</p> <p>SDTC encourages collaboration among private, financial, academic, and public sector partners, and with the Government of Canada and all levels of government to build a sustainable development technology infrastructure in Canada.</p>
Technology Early Action Measures (TEAM)	Government of Canada Action Plan 2000 on Climate Change	<p>TEAM supports late-stage development projects and first-time demonstration projects designed to reduce GHG emissions nationally and internationally, at the same time sustaining economic and social development. The TEAM</p>

ATTACHMENT A-9
CURRENT ENVIRONMENTAL FUNDING SOURCES

Program	Funding Source	Description
		<p>program follows a unique approach that is built on incremental financing and extensive networking, and brings together industry, community, and international partners to encourage additional investment.</p> <p>Funding for TEAM Phases 1 and 2 has been provided by the Climate Change Action Fund. Funding for TEAM Phase 3 will come under the Technology and Innovation component announced in the federal budget for 2003.</p>
Renewable Energy Deployment Initiative	Government of Canada Action Plan 2000 on Climate Change	Designed to stimulate market demand for renewable energy for space/water heating and cooling. Eligible businesses and corporations can receive a 25 percent contribution (to a maximum of \$50,000) toward the purchase and installation costs of qualifying renewable energy systems, including solar air, solar hot water and high efficiency, low-emissions biomass combustion systems.
Ontario Strategic Infrastructure Financing Authority (OSIFA)	Government of Ontario	The new Ontario Strategic Infrastructure Financing Authority (OSIFA) recently replaced the Ontario Municipal Economic Infrastructure Financing Authority (OMEIFA). From 2004-05, OSIFA's infrastructure renewal loan program will be focused on offering affordable infrastructure financing to municipalities for five key priorities: clean water infrastructure, sewage treatment facilities, waste management infrastructure, municipal roads and bridges, and public transit. OSIFA will raise capital from individual and institutional investors to form a pool that provides loans to broader public sector partners. All borrowers will receive the same low interest rate.
Eco Action	Environment Canada	Eco Action provides financial support to groups to undertake projects in their communities that will result in positive, measurable impacts on the environment. Youth involvement is encouraged. The program focuses on three of Environment Canada's priorities: clean air and climate change, clean water, and nature projects.
Communities for Wildlife	The Canadian Wildlife Foundation	The goal of Communities for Wildlife is to foster grass-roots wildlife conservation in cities, suburbs, and rural areas. The program provides guidance and resources (up to \$10,000) to community organizations undertaking wildlife habitat projects.
TD Friends of the Environment Foundation	TD Canada Trust	The Foundation's Community Fund provides up to \$10,000 to projects that protect the environment, involve and benefit the community, provides awareness and makes a positive difference to the environment. The Canada Fund is available for up to \$100,000 for larger projects.
Green Streets Canada	Tree Canada Foundation	The Green Streets Canada program is designed for municipalities to improve their urban forests and provide an appreciation of how trees contribute to the environment, the economy and improved quality of life. Winners of the competition receive financial assistance on a matching basis along with promotional materials.

ATTACHMENT A-9
CURRENT ENVIRONMENTAL FUNDING SOURCES

Program	Funding Source	Description
Tree Planting Sponsors	Tree Canada Foundation	Working with regional partners the Foundation assists tree planting projects secure funding from corporate donors. These donors offer funding or in-kind services for park trails, arboretums, schoolyards, educational forests, windbreaks, soil conservation, and habitat restoration.
Shell Environment Fund	Shell Canada Ltd.	Launched in 1990, the Shell Environmental Fund has granted over \$11M to almost 4,000 environmental projects across the country. Individuals, schools, community associations, service clubs and environmental groups apply for project funding of up to \$5,000. Projects can include habitat restoration, beach clean-ups, waste reduction and recycling programs, trail restoration, educational initiatives, and other innovative environmental projects. Five regional panels across Canada review applications and decide the grants.
Greening School Grounds	Tree Canada Foundation	This national program provides workshop facilitation, landscape planning, information, and funding to select school communities that are improving or creating educational school landscapes.
The Environmental Youth Corps	ECO Canada, Environment Canada, Human Resources and Skills Development Canada	The EYC program is designed to bridge the gap between recent graduates and environmental employers. The program offers up to \$12,000 in wage subsidies to organizations with an environmental position to fill. The internship must last between 6 to 12 months. The EYC is divided into two programs, the National Environmental Youth Corp (NEYC) and the International Environmental Youth Corp (IEYC). The NEYC provides a wage subsidy of 33% to a maximum of \$8,000 while the IEYC provides a wage subsidy of 40% to a maximum of \$12,000.
Green Grants	Wal-Mart Canada Evergreen	Green Grants will provide community and local groups with funding up to \$10,000 to transform degraded open spaces into healthy, dynamic natural areas. Project must focus on restoration and stewardship of urban habitats such as woodlands, meadows, wetlands and ravines through the use of native plants. This grant will also support community gardening projects that involve native plants.

ATTACHMENT A-10
EXTERNAL SUPPORT COSTS

Estimating External Support Costs are based on the experience of cities with a population of 90,000 to 300,000 residents. The schedule ranges between a 12- to 18-month period. Once again, cost estimates are a function of scope and with more scope definition, the Town can make a more informed decision.

Scope	External advisory and coaching fees
Draft EMP guideline or manual document	\$30,000
Coaching an internal EMP implementation team for one department (i.e. solid waste, water, or wastewater)	\$65,000 and higher.
A theme-based EMP with a cross-commission internal implementation team	In the range of \$65,000 - 80,000

1.	Vision & Strategy
2.	Profile
3.	Governance Structure and Management Systems
Annual EMP Performance	
4.	Summary of Town-wide EMP Goals, Objectives, Targets
	<ul style="list-style-type: none">— Roll up— Air Goals (Criteria Air Contaminants and GHGs, compliance from facilities and fleets)— Water Goals (Water Quality, Water Supply, Water Resources, Compliance)— Land and Biodiversity Goals (Riparian Zone, Pesticide Reduction, Endemic Species, Green Space)— Resource Use Goals (Energy Efficiency, Materials Management, Green Procurement, Compliance)
5.	Others – To be defined
	<ul style="list-style-type: none">— Organizational Development Goals (Governance, Training, Communications, Program Management, etc.)
6.	Commission EMP Goals, Objectives, Programs, and Indicators
	<ul style="list-style-type: none">— Air Goals (Criteria Air Contaminants and GHGs, Compliance from Facilities and Fleets)— Water Goals (Water Quality, Water Supply, Water Resources, Compliance)— Land and Biodiversity Goals (Riparian Zone, Pesticide Reduction, Endemic Species, Green Space)— Resource Use Goals (Energy Efficiency, Materials Management, Green Procurement, Compliance)
7.	Others – To be defined
	<ul style="list-style-type: none">— Organizational Development Goals (Governance, Training, Communications, Program Management, etc.)
Appendix	
i.	GRI Content Index – Cross-reference



APPENDIX A
BACKGROUND ON
DEVELOPING INTEGRATED
PLANS

Background on Developing Integrated Plans

A.1 The Impetus to Begin

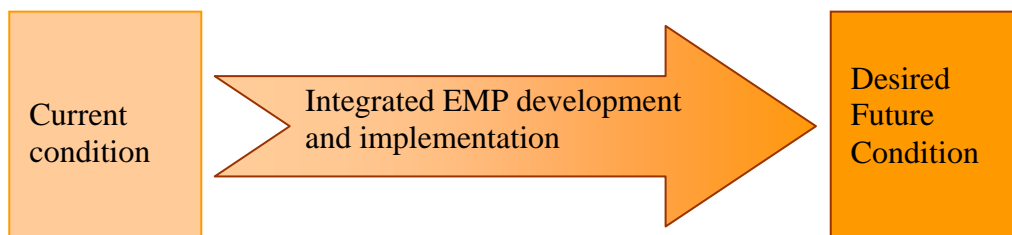
This work parallels a national trend among several tens of Canadian municipalities embarking on new journeys toward integrated environmental management plans and more comprehensive sustainability plans. Cities across Canada appreciate the links between decision-making for new asset and infrastructure development, protection and enhancement of environmental resources, and corporate social responsibility. At the same time, pressure to demonstrate due diligence, fiduciary accountability, cost-effective asset management, meaningful stakeholder engagement and regulatory compliance is ever-increasing.

Early developments associated with integrated planning for long-term urban sustainability have occurred in the last few years-most notably by Canadian local governments, including the City of Vancouver and the Greater Vancouver Regional District (GVRD), The Resort Municipality of Whistler and The City of Calgary. Finally, a greater proportion of the public are aware and educated on the link between human health, quality of life and liveable cities. People are interested and concerned with their community's development and want to have a voice in the decision-making.

A.1.1 Developing Integrated Plans

The development and implementation of comprehensive or enterprise-wide strategies, plans and processes combine disciplines associated with environmental stewardship, conservation, urban and community planning, management and organizational development. A simple way to imagine this is to consider an organization's current state; specifically, the issues, concerns, and realities of the present organization. As a juxtaposition, one can imagine a desired future where healthy communities prosper. In between are the organization's leverage points or the existing opportunities it has available to the enterprise to influence change (Figure A-1). This can include committed leadership, staff, and the public, or financial incentives to facilitate innovation and new approaches. For the Town of Markham the incentive to begin leveraging the Town's opportunities has been generated by its commitment to develop and implement an integrated Environmental Management Plan.

FIGURE A-1
FROM CURRENT REALITY TO OUR DESIRED FUTURE STATE



Early adopters of integrated environmental or sustainability plans have responded to a variety of drivers. For example, the City of Vancouver and the GVRD were motivated by the pressures of increased urbanization and the World Gas Union's international competition. It was a one-year effort to recognize a winning long-term urban sustainability plan. Others, like the Resort Municipality of Whistler, have experienced the conflicting pressures associated with rapid resort development in a pristine sub-alpine terrain. Still others, like the City of Calgary, responded to an environmental incident in which their response led to expansion of an environmental management system to a long-term sustainability plan. The Town of Markham's drivers included a desire to develop a corporate strategy to guide the delivery of a high standard of environmental performance.

A.2 Defining a Comprehensive Sustainability Plan

Comprehensive sustainability plans (CSPs) address integrated risks and opportunities associated with environmental stewardship, economic prosperity and social well-being – both internally in the city's administration and operations, and externally in the community. Additional attributes and components include opportunities and expectations for stakeholder input on goals, priorities and implementation; a systematic approach toward cultivating and communicating leadership and internal governance with associated roles, responsibilities, authority; and transparent tracking and reporting.

CSPs articulate environmental priorities associated with clean air, water, and land, along with restoration or enhancement of biodiversity. Economic prosperity priorities focus on local business development, employment, partnerships and innovation for financing new initiatives. Social well-being focuses on community safety, aesthetic treatment for public art, recreation, accessibility for the public, and transparent tracking and reporting of public funds spending and performance. These plans are comprehensive to address the complete complement of an organization's roles, responsibilities and functions.

Many cities and towns across Canada have initiated the process of developing integrated or comprehensive sustainability plans as a natural continuation of their integrated environmental management plans. Others have developed CSPs and leveraged the EMS framework as the organizational structure and framework for implementing the overall plan. The development of a plan and the development and implementation of organizational capacity are critical for ongoing success, instilling desired behaviours, and deepening an environmental and/or sustainability ethic among leaders, managers, staff, and the community. They also form the basis for informed decision-making, implementing elements of programs comprehensively across an organization, tracking progress, and undertaking continual improvement.

A.3 Setting the Bar

Templates for creating a vision, policy and plan for the future can be informed by best practices experienced in both the public and private sector. The plans are, in turn, informed by a variety of sources including stakeholders' particular needs and interests, the thinking and practice of early adopters and implementers in other jurisdictions, and the work of

international UN agencies and NGOs. Some common sources for informing the context and content of plans are featured below.

The Natural Step Framework (TNS) is similar a framework developed by leading scientists, which is based on the scientific laws of thermodynamics, and principles of natural cycles and which focuses on four system conditions. The system conditions exist in a sustainable society where nature is not subject to systematically increasing the following:

1. Concentrations of substances from the Earth's crust and burning of fossil fuels and build-up in nature of scarce metals
2. Concentrations of substances produced by society such as persistent organic pollutants
3. Degradation by physical means through physical destruction of the regenerative capacity of the biosphere
4. Human needs are met worldwide

The Resort Municipality of Whistler and The Town of Canmore are two communities who have based their plans on The Natural Step. Tens of communities have used TNS to inform environmental strategies and official community plans worldwide.

The Melbourne Principles are another source for guidance for policy development. They were scripted in Melbourne at a United Nations-sponsored workshop and later tabled and discussed in September 2002 at the Earth Summit in Johannesburg, South Africa. They explain how a sustainable city might function, and provide a framework for action.

- Principle 1: Provide a long-term vision for cities based on sustainability; intergenerational, social, economic and political equity; and their individuality.
- Principle 2: Achieve long-term economic and social security.
- Principle 3: Recognize the intrinsic value of biodiversity and natural ecosystems, and protect and restore them.
- Principle 4: Enable communities to minimize their ecological footprint.
- Principle 5: Build on the characteristics of ecosystems in the development and nurturing of healthy and sustainable cities.
- Principle 6: Recognize and build on the distinctive characteristics of cities, including their human and cultural values, history and natural systems.
- Principle 7: Empower people and foster participation.
- Principle 8: Expand and enable cooperative networks to work towards a common sustainable future.
- Principle 9: Promote sustainable production and consumption, through appropriate use of environmentally sound technologies and effective demand management.
- Principle 10: Enable continual improvement, based on accountability, transparency and good governance.

In Canada, The City of Calgary and the Regional Municipality of Niagara developed their integrated sustainability policy on The Melbourne Principles, which are used to help decision-making processes and guide decisions.

The Triple Bottom Line (TBL) is an approach developed from financial performance management. It expands decision making to include economic (and financial), social and environmental issues in a comprehensive, systematic and integrated way.

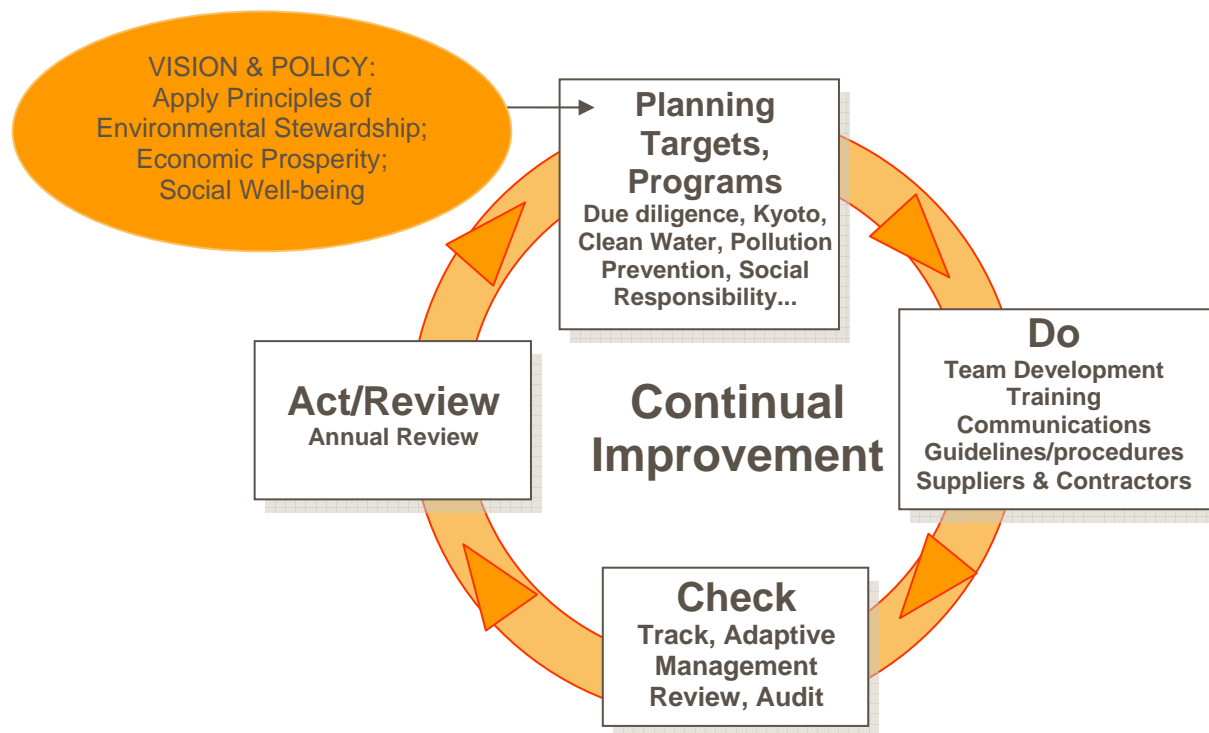
The City of Seattle has integrated a TBL approach with an ISO 14001 Environmental Management Standard.

A.3.1 ISO 14001 – Environmental Management System Standard

Finally, an internationally recognized and commonly-used mechanism for implementing these principles, system-conditions, and priorities is a standard for environmental management – ISO 14001. The standard defines key components for planning, implementing, checking and improving environmental management performance. It features processes to help organizations reduce and prevent pollution, ensure regulatory compliance, support continual improvement and link with organization’s management and operational functions. Figure A-2 illustrates the Canadian cities and towns implementing EMS.

Over time, the City of Calgary has integrated its sustainability plan based on a combination of ISO 14001, The Melbourne Principles and the TBL. Many Canadian cities have adopted the ISO 14001 standard to initiate the process of environmental impact reduction with organizational development.

FIGURE A-2
EMS IMPLEMENTATION BY CANADIAN CITIES AND TOWNS



If one were to select the most relevant principles and themes to inform a Comprehensive Environmental Management Plan, they would include the following:

From the Natural Step: Avoid concentrations of substances

- From the Earth's crust and burning of fossil fuels
- Substances produced by society such as persistent organic pollutants
- Degradation by physical means through physical destruction of the regenerative capacity of the biosphere

From the Melbourne Principles:

- Principle 3: Recognize the intrinsic value of biodiversity and natural ecosystems, and protect and restore them.
- Principle 4: Enable communities to minimize their ecological footprint.
- Principle 5: Build on the characteristics of ecosystems in the development and nurturing of healthy and sustainable cities.
- Principle 6: Recognize and build on the distinctive characteristics of cities, including their human and cultural values, history and natural systems.
- Principle 7: Empower people and foster participation.
- Principle 8: Expand and enable cooperative networks to work towards a common sustainable future.
- Principle 9: Promote sustainable production and consumption, through appropriate use of environmentally sound technologies and effective demand management.
- Principle 10: Enable continual improvement, based on accountability, transparency and good governance.

And finally, from ISO 14001:

- A commitment to pollution prevention, regulatory compliance and continual improvement.
- The organization shall provide a process for implementation and improvement
- Each staff member has a responsibility to assist in the implementation.

A.4 Beginning the Process

Many communities mentioned have developed ad-hoc and informal gatherings to solicit input and the development and implementation of stakeholder engagement strategies and processes have ensued.

All of the communities mentioned above have established internal offices or a centralized unit to initiate and coordinate planning, implementation, and reporting on their jurisdiction's sustainability or environmental performance.

The following image conveys the consideration of key stakeholders; views and interests on vision and policy issues such as environmental stewardship, economic prosperity and/or social well-being. The desired future state will vary depending on the make up of the audience. Once consensus is reached, the management system in the PLAN, DO, CHECK and ACT provide the organizational means to address goals and objectives.

The following table, Table A.1, distinguishes between core elements of Comprehensive Sustainability Plans and Integrated Environmental Management Plans.

TABLE A.1
COMPREHENSIVE SUSTAINABILITY PLANS AND INTEGRATED ENVIRONMENTAL MANAGEMENT PLANS

Key Plan Components	Comprehensive Sustainability Plans	Integrated Environmental Management Plans
Vision and Policy		
Commitment to environmental health <ul style="list-style-type: none"> Environmental compliance Targets and programs established to improve air, water, land, natural resources, biodiversity 	✓	✓
Targets and programs established to improve economic prosperity <ul style="list-style-type: none"> Focus on local suppliers where possible Opportunities for employment, training. Local economic development 	✓	
Targets and programs established to improve social well-being <ul style="list-style-type: none"> Health, wellness Transparency Diversity, human rights 	✓	
Senior Management Commitment / Governance		
Visible leadership at Council and Senior Administration Level	✓	✓
Resources (time, money, people)	✓	✓
Integrated decision-making environmental, economic prosperity, and social well being	✓	
Stakeholder Input		
Internally focus on internal operations (direct influence)	✓	✓
Internal and external focus for operations and the community (direct and indirect influence)	✓	✓
Planning		

Key Plan Components	Comprehensive Sustainability Plans	Integrated Environmental Management Plans
Establish objectives, targets, and programs	✓	✓
Establish integrated objectives, targets, and programs (environmental, economic and social)	✓	
Doing Management System / Consistent Process for Implementation		
Team development with defined roles and responsibilities	✓	✓
Action Plans and Programs	✓	✓
Guidelines, policies, and procedures	✓	✓
Training	✓	✓
Communication	✓	✓
Working with Suppliers and Contractors	✓	✓
Checking and Reporting		
Tracking performance	✓	✓
Corrective action/mid-course correction/adaptive management	✓	✓
Reporting internally and externally	✓	✓
Third party verification	✓	✓
Annual Review	✓	✓

Development and implementation of an integrated Environmental Management goes a long way toward the development and implementation of a Comprehensive Sustainability Plan.



APPENDIX B
INTERVIEWEE
NAMES AND TITLES

APPENDIX B

Interviewee Names and Titles

1. John Livey, CAO
2. Alan Brown, Manager of Engineering Services
3. Stu Taylor, Director of Strategic Services
4. Kevin Newson, Purchasing
5. Paul Ingham, Operations
6. Melissa VanBerkum, Assistant Town Solicitor
7. Bob Nicholson, Facilities Manager
8. Lilli Duoba, Senior Project Coordinator, Environmental Planning
9. Mavis Urquhart, Acting Manager Environmental Leadership
10. Councilor Jack Heath, Regional Councilor
11. Councilor Frank Scarpitti, Deputy Mayor, Regional Councilor
12. Councilor John Webster, Councilor, Ward 5
13. Andy Taylor, Commissioner of Corporate Services
14. Councilor Erin Shapero, Councilor Ward 2
15. Councilor Stan Daurio, Councilor Ward 1
16. Jim Baird, Commissioner of Development Services
17. Lorenzo Mele, TDM Coordinator, Engineering Department
18. Glen Taylor, Manager of Community Centre Operations
19. Barb Roth, Director, Recreation and Culture Services
20. Bruce Ander, President and CEO, Markham District Energy
21. Mona Nazif, Manager, Human Resources – Client Services
22. Sheila Birrell, Town Clerk
23. Vicki McGrath, Manager of Environmental Leadership
24. David Clark, Town Architect, Urban Designer
25. Jim Sales, Commissioner of Community & Fire Services



APPENDIX C
INTERVIEW PROTOCOL



Town of Markham

Contact:

Department:

4.2 Environmental Policy

1	Has top management defined the organization's environmental policy?
2	Does top management ensure that the policy:
a)	includes a commitment to continual improvement and prevention of pollution;
b)	includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;
3	How did the Town come to develop its environmental policy?
4	What do you see as the main environmental priorities?

Comments

4.3 Planning

4.3.2 Legal and Other Requirements

1	Has the organization established and maintained a procedure(s) to identify legal, and other requirements to which the organization subscribes and that are directly applicable to the environmental impacts of its activities, products or services?
2	Is this centralized? Does the Town's Legal / Risk Department get involved?
3	Who keeps track of legal changes?
4	Which regulators do you interact with the most?

Comments



4.3 Planning

4.3.3 Objectives and Targets

1	Has the Town of Markham established and does it maintain documented environmental priorities, commitments, objectives and targets, at each relevant function and level within the organization?
2	Are the objectives and targets consistent with the environmental policy, including legal commitments and the prevention of pollution?
3	What in your opinion is the best way to determine environmental priorities, both internally and externally?
4	Which key community, business or government agencies do you think are the most interested in the town's EMS goals and commitments?

Comments

4.4 Implementation and Operation

4.4.1 Structure, Roles and Responsibility

1	Are roles, responsibilities and authorities defined, documented and communicated to facilitate environmental programs?
2	Does management provide resources essential to the implementation and control of environmental programs?
3	Has the organization's top management appointed a specific management representative(s) who, irrespective of other responsibilities, has defined roles, responsibilities and authority for managing Markham's environmental programs?
4	Does that management representative report on the performance of the environmental programs to top management for review and recommendations for improvement?

Comments



4.5 Checking and Corrective Action

4.5.1 Reporting, Monitoring and Measurement

1	Has the organization established and does it maintain, documented procedures to monitor, measure and report on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment?
2	Do these documented procedures include the recording of information to track performance, relevant operational controls and conformance with the organization's objectives and targets?
3	Has the organization established and does it maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations?
4	Who do you think will be/are interested in environmental reports (internally + externally)?

Comments

4.5 Checking and Corrective Action

4.5.4 Environmental Management System Audit

1	Has the Town or Markham established, planned and implemented programs to periodically audit its environmental performance?
2	Are the results of environmental audits communicated to management?
3	Is the audit program, including any schedule, based on the environmental importance of the activity concerned and the results of previous audits?

Comments



Town of Markham

Contact:

Department:

Environmental Management System Requirements

4.2 Environmental Policy

1	Has top management defined the organization's environmental policy?
2	Does top management ensure that the policy:
a)	includes a commitment to continual improvement and prevention of pollution;
b)	includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;
3	How did the Town come to develop its environmental policy?
4	What do you see as the main environmental priorities?

Comments

4.3 Planning

4.3.1 Environmental Priorities

1	What are your departments major environmental risks & opportunities (air, land, water, biodiversity, energy etc.)
2	Has the Town of Markham established and does it maintain a procedure to identify the environmental impacts related to its activities, products or services that it can control or influence, in order to determine environmental priorities?
3	Does the organization keep this information up-to-date?

Comments



4.3 Planning

4.3.2 Legal and Other Requirements

1	Has the organization established and maintained a procedure(s) to identify legal, and other requirements to which the organization subscribes and that are directly applicable to the environmental impacts of its activities, products or services?
2	Is this centralized? Does the Town's Legal / Risk Department get involved?
3	Who keeps track of legal changes?
4	Which regulators do you interact with the most?

Comments

4.3 Planning

4.3.3 Objectives and Targets

1	Has the Town of Markham established and does it maintain documented environmental priorities, commitments, objectives and targets, at each relevant function and level within the organization?
2	Are the objectives and targets consistent with the environmental policy, including legal commitments and the prevention of pollution?
3	What in your opinion is the best way to determine environmental priorities, both internally and externally?
4	Which key community, business or government agencies do you think are the most interested in the town's EMS goals and commitments?

Comments



4.3 Planning

4.3.4 Environmental Management Program(s)

1	Has the Town of Markham established and does it maintain (a) program(s) for achieving its environmental objectives and targets?
2	Does it include designation of responsibility and authority for achieving objectives and targets at each relevant function and level of the organization?

Comments

4.4 Implementation and Operation

4.4.1 Structure and Responsibility

1	Are roles, responsibilities and authorities defined, documented and communicated to facilitate environmental programs?
2	Does management provide resources essential to the implementation and control of environmental programs?
3	Has the organization's top management appointed a specific management representative(s) who, irrespective of other responsibilities, has defined roles, responsibilities and authority for managing Markham's environmental programs?
4	Does that management representative reporting on the performance of the environmental programs to top management for review and recommendations for improvement?

Comments



4.4 Implementation and Operation

4.4.2 Training, Awareness and Competence

1	Does the organization identify environmental training needs?
2	Are personnel performing tasks which can cause significant environmental impacts competent on the basis of appropriate education, training and/or experience?
3	Does the organization require that all personnel performing tasks that may create a significant impact upon the environment, received appropriate training?
4	Has the organization established and does it maintain procedures to make its employees or members at each relevant function and level aware of:
b)	environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;
c)	their roles and responsibilities, including emergency preparedness and response requirements; and
d)	the potential consequences of departure from specific operating procedures?
5	What are the most effective training programs you have seen that would be useful here?

Comments

4.4 Implementation and Operation

4.4.3 Communication

1	Has the Town of Markham established, implemented and maintained procedures for <u>internal</u> communication of environmental priorities between various levels and functions of the organization?
2	How does the Town of Markham receive, document and respond to relevant communication from <u>external</u> interested parties?

Comments

**4.4 Implementation and Operation****4.4.4 Environmental Documentation**

1	Has the Town of Markham established and does it maintain information, in paper or electronic form, to:
a)	describe the core elements of the its environmental priorities and their interactions; and
b)	provide reference to related documents and records?
2	Does the Town have a centralized filing system (web based, electronic, paper etc.)?

Comments**4.4 Implementation and Operation****4.4.5 Document Control**

1	Has the Town of Markham established and does it maintain, procedures for controlling all documents to ensure that they can be located, reviewed, revised and approved by authorized personnel?
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Comments



4.4 Implementation and Operation

4.4.6 Operational Control

1	Does the Town of Markham establish, implement and maintain documented procedures to control operations and situations where their absence could lead to environmental impacts?
2	Does the Town of Markham establish, implement and maintain procedures related to goods and services used by the organization where their absence could lead to environmental impacts?
3	Are these procedures communicated to suppliers and contractors?

Comments

4.4 Implementation and Operation

4.4.7 Emergency Preparedness and Response

1	Has the Town of Markham established and maintained procedures to identify the potential for, and response to, accidents and emergency situations that may harm the environment?
2	Does the organization review and revise, as necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations?
3	Does the organization also periodically test such procedures where practicable?

Comments



4.5 Checking and Corrective Action

4.5.1 Reporting, Monitoring and Measurement

1	Has the organization established and does it maintain, documented procedures to monitor, measure and report on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment?
2	Do these documented procedures include the recording of information to track performance, relevant operational controls and conformance with the organization's objectives and targets?
3	Has the organization established and does it maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations?
4	Who do you think will be/are interested in environmental reports (internally + externally)?

Comments

4.5 Checking and Corrective Action

4.5.2 Non-Conformance and Preventative and Corrective Action

1	Has the Town of Markham established, implemented and maintained procedures for dealing with actual and potential non-conformities and for taking corrective and preventive action to prevent environmental impacts?
2	Does the organization implement and record any changes in the documented procedures resulting from corrective and preventative action?

Comments



4.5 Checking and Corrective Action

4.5.3 Records

1	Has the Town of Markham established and does it maintain, procedures for the identification, maintenance and disposition of environmental records?
2	Are such environmental records legible, identifiable and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss?
3	Are the retention times for environmental records established and maintained?

Comments

4.5 Checking and Corrective Action

4.5.4 Environmental Management System Audit

1	Has the Town or Markham established, planned and implemented programs to periodically audit its environmental performance?
2	Are the results of environmental audits communicated to management?
3	Is the audit program, including any schedule, based on the environmental importance of the activity concerned and the results of previous audits?

Comments



4.6 Management Review

1	At planned intervals, does top management review the Town of Markham's environmental performance to ensure its suitability, adequacy, and effectiveness?
2	Does the management review address the possible need for changes to policy, objectives and other elements of Markham's environmental performance consistent with a commitment to continual improvement?
3	Is the review documented?

Comments



APPENDIX D
WORKSHOP FINDINGS

July 5, 2005 - Workshop Summary Notes on the Proposed EMP

ATTENDEES: Town of Markham - key EMP
internal stakeholders

FROM: CH2M HILL

DATE: September 25, 2005

Based on the presentation, the following questions/comments were made:□

- We should have a branding strategy for environmental initiatives (i.e. Mission Green)
- It is important to look at the value of certain costs and prioritize initiatives, such as using a decision solutions formula
- In terms of water/wastewater works, it is important not to duplicate the work already done by Earthtech for the Town (benchmarking work)
- How do we engage all Town departments to meet the goals of the EMP?
 - Some will have full time staff, others part time and others will have staff with EMP reporting duties
- How do you engage other critical stakeholders, like York Region?
 - Ask them to commit to continual improvement, only that which we can directly influence
 - Ask for participation in inter-jurisdictional action

BRAINSTORMING SESSION

What are the best/key processes to link the EMP with?

- PEP-quality process, and personal performance reviews
- Business unit profiles
- Council priorities and corporate budgeting
- Energy management / Markham Energy Conservation Office (MECO)
- Purchasing (developing a green procurement by-law)

Who else should we interview and/or update on the project?

- Bruce Ander – MECO
- Human Resources
- Communications
- CCC – CAO and Commissioners Committee

In the EMP process, identify:

WHAT?	HOW?	WHO?
Air –emissions, electromagnetic emissions	Councilors	Markham Board of Trade
Land – brownfields, waste management, energy	Environmental Issues Committee	Markham District Energy
Water – stormwater control		Provincial government (reporting)
Biodiversity – invasive species		Markham Public Library Board
People		TRCA
		Markham Theatre

What are the critical issues?

- Transit, gridlock and traffic.
- Town has serious liability issue as an approval authority over contaminated lands (Brownfields). Town has no current risk management system to deal with this issue.
- Land owners of contaminated land
- Knowledge on brownfields, risks, locations
- Air quality and impact on quality of life
- Waste management disposal
- Energy – utilities and fuel prices
- Invasive species
- Provincial planning policies greatly influence the development of Town planning policies (i.e. Greenbelt Plan).
- Source water/storm water

- Litter and pollution
- Public accessibility to parks and trail systems
- By-law enforcement, such as for the standing water, tree cutting and pesticide use by-laws.

Identified Levers:

Policy	Technology	Business/Market
Planning/land use		Cowan Insurance
Municipal accountability with brownfields		Watershed groups
By-laws and communications		Environmental organizations
Urban design		GTA Clean Air Partnership
		York University/Economic Development
		Seneca College
		U of T Smart Growth Committee
		Markham District Energy
		Region of York
		TRCA
		Don Council, Rouge Park Alliance, Duffins Task Force
		Department Head Forum



APPENDIX E
COMPREHENSIVE RESULTS
OF GAP ANALYSIS

Comprehensive Results of Gap Analysis

The results of the Gap Analysis are presented below. The strengths and gaps identified help to establish current conditions at the Town of Markham and will help inform environmental priority setting.

Vision and Policy

A compelling strategic plan such as ENGAGE 21st Century ultimately wants to express its commitment to maintain a competitive advantage to attract residents, support economic development with business activity, and provide infrastructure and civic services that support healthy communities.

Strengths

The following strengths were established as a result of the workshop and interviews with staff and members of Council:

- Genuine commitment to “Preserving Our Natural & Built Environment” as declared in the Engage 21st Century strategic plan.
- Council committees for the environment include: Kyoto Task Force Committee; Environmental Issues Committee; Markham Conservation Committee, an arms-length advisory committee to Council.
- The Business Planning Cycle (September) confirms projects align with stated priorities or goals. These projects/initiatives are vetted by the CAO and Commissioners’ Committee (CCC) and projects are subsequently funded.
- Early success with environmental initiatives includes:
 - Moving to the use of paperless agendas,
 - Upgrading copiers and printers to achieve better energy efficiency,
 - Introducing more recycled paper products for use as supply contracts are renewed,
 - Establishing a green fleet,
 - Implementing a corporate Smog Alert Response Plan,
 - Establishing the Markham Energy Conservation Office,
 - Working towards a pesticide policy, and
 - Developing ecological criteria for the purchase of private lands.
- Many interviews refer to the environmental management ethic as an “understanding” – that is, an inherent recognition around protecting the environment, in the organization.
- Urban Design Awards given every three years to new developments reflecting the Urban Design Guidelines (a design standard the Town subscribes to).

- The Town subscribes to the Congress of New Urbanism, upon which the Town's Growth Management Strategy is based.

Identified Gaps

The following gaps became apparent through the workshop and interview process:

- The Town's Vision and Policy statement lacks specific commitment to:
 - Priority setting related to environmental objectives
 - Legal compliance
 - Pollution prevention
 - Continual improvement
 - Applications of life cycle analysis
 - Providing an internal framework for individual staff to personally support commitment through individual responsibility

Governance

Governance refers to the broad theme area that ensures continuity between leadership and management, between policy and implementation, between Council and Town staff. It focuses on the visible leadership between the Town's organizational structure, roles, responsibilities and authority and the resources necessary to carry out their responsibilities. And finally, it also implements integrated decision-making that includes environmental sustainability, economic prosperity, and social well-being

Strengths

Within the Town, governance is strong in the following areas:

- Council commitment to Environment is notably strong. Sub committees include:
 - Kyoto Task Force
 - Town Wide 3 Stream (Mission Green)
 - Markham Conservation Committee
 - Environmental Issues Committee
 - Town Council and Staff are very motivated to improve environmental performance

Gaps

The workshop and interview process revealed the following gaps in governance:

- There is no integrated standing committee for the environment at Council level. While there are several sub-committees active with Council member support, there is a lack of a coordinated or integrated decision-making on environmental issues.
- There is no linked system for documentation of governance, roles, responsibilities, and authority. The Council Committees do have documented mandates; however, they are incomplete in covering the range of environmental issues and management necessary for continual improvement.
- Environmental management requirements are not written into job descriptions.

- Ad hoc decision-making occurs and there is a desire to see more coordination between Council and staff through a shared structure for coordinated decision-making
- There is not a senior position responsible for environmental sustainability that can facilitate and coordinate cross-corporate coordination and communication.
- The ability of staff to implement Council initiatives is hindered due to a lack of resources (budget constraints) and senior level priority setting
- Standard protocols are often by-passed when developing environmental initiatives.
- There is a functional disconnect between capital rehabilitation and operations.
- The Town does not have an Environmental Engineer on staff in Development Services.
- Better governance, which can be developed as a result of recognizing strengths and gaps, will help develop environmental priorities, roles and responsibilities, strategic, environmental corporate policy, and council and staff coordination.

Stakeholder Engagement

Stakeholder Engagement is comprised of two dimensions: internal operations (direct influence) and community (indirect influence). For internally-focused EMPs, the input of Council, senior management and selected Commission staff would provide the necessary information. Shared decision-making relies on the input of representatives of those who have a stake in the decision-making.

Strengths

The following areas represent how the Town of Markham is currently engaged with environmental stakeholders, recognizing the internally-focused workshop and interview process:

- Council representatives sit on selected inter-jurisdictional committees including the Federation of Canadian Municipalities, Association of Ontario Municipalities, Rouge Park Alliance, etc to solicit input and contribute to shared decision-making.
- Council members are involved on issue specific committees
- Council established the Markham Conservation Committee, an arms-length advisory committee to Council made up of members of the public, to provide input on environmental issues and help to establish environmental priorities
- The Town's Strategic Plan, Engage 21st Century, is a process undertaken on a three-year cycle

Identified Gaps

The following gaps became evident through the workshop and interview process:

- Council alone defines much of the Town's policy. There is a lack of systematic input from internal staff and external stakeholders.
- Stakeholder engagement will help to establish priorities around when the EMP begins to inform a community sustainability plan and the next cycle of the strategic plan.

Planning

Environmental management planning focuses on defining environmental objectives, targets and programs both in terms of absolutes for the environment and organizational capability and ability to perform well to achieve desired absolute goals. Consideration is given to legal and other requirements by the various jurisdictions such as federal, provincial and local government. It can also include voluntary priorities and commitments defined by the key stakeholders. And it often includes a systematic process for defining risks and priorities relative to environmental risks associated with environmental impacts (to air, land, water, biodiversity) with the likelihood and probability of risk on the organizational (reputation and financial exposure). Finally, in some cases, opportunities exist to integrate environmental, economic and social priorities.

Strengths

The following planning strengths were established through the workshop and interview process:

- Council's interest and commitment is strong, with committees focusing on external issues such as air quality, green space, environmentally significant features, natural heritage, and plans to manage the pace of growth. Internal issues are greening infrastructure, greening fleets, facilities, waste management, energy management, and pesticide management.
- The Town links with Toronto Region Conservation Authority on water resources issues and initiatives.

Factors influencing prioritization of environmental risks, issues, and opportunities include the following:

- Evaluation of return on investment (ROI) in quantitative and qualitative terms.
- Qualitative: contributions to people and biodiversity.
- People: air quality, quality of life, human health.
- Quantitative: financial return over a long-term (50-year horizon); maintain quantitative advantage to attract residents.
- The Town follows provincial application of pesticides requirements, provincial emissions from vehicles; provincial spill response from stormwater management plan; Salt Management Plan as required by Environment Canada.
- Interested in themes for objectives and programs including: energy and technology, demonstrating technology in civic circumstances.
- Some objectives and targets are established through studies at the committee level and responding to external group requests, for example, Rouge Park Alliance, TRCA, and through the Official Plan revision process.

- Programs and initiatives including a green fleet transition plan, “No idling” policy to support clean air goal, environmental land procurement and the Markham Environmental Sustainability Fund.
- Two funds: Markham Environmental Sustainability Fund (MESF) is to provide financial assistance in funding Town internal and community projects and initiatives that promote environmental responsibility and innovation, and enhance the Town’s natural resources (soils, water, natural features and air quality). Environmental Land Acquisition Fund: focuses on buying land to support linkages between watersheds and natural heritage features.
- Environmental Management Programs are featured below in Attachment A.1.
- The East Markham Wellness Centre hospital expansion with community centre links health and sustainability
- Good management of service water and stormwater.
- Solid Waste, Water, and Wastewater do consult with the Legal Department.
- Energy and GHG emission reduction through Markham District Energy, wholly owned by the Town to service and sell power with district energy; using co-generation from hot water; target dense urban nodes and Markham’s Cornell Hospital; influenced by Development Principles of Markham Centre.

Identified Gaps

The workshop and interview process revealed the following gaps in planning:

- No systematic process for evaluating and prioritizing environmental risks and priorities.
- Difficulty in addressing regulatory compliance and voluntary environmental initiatives and no documented approach to tracking current and emerging legal and other requirements.
- Short-staffed in legal department.
- No life-cycle approach to financial investment and management.
- Challenged to respond to provincial legislation with the current level of downloading of responsibilities.
- There is a lack of prioritization to address the challenges with aging infrastructure, the risks they pose and the associated financial requirements to repair, replace or refurbish.
- No process for establishing environmental management objectives, targets, metrics, and programs.
- There is no risk management process in place.
- There is a lack of understanding liabilities with Phase 1 and Phase 2 Environmental Site Assessments and Records of Site Condition.
- There is limited understanding of Kyoto.

- No formal programs in Human Resources to support environmental, economic, and social goals.
- The strengths and gaps apparent in the area of environmental planning will help to inform environmental priority setting in Section 5-3.

Doing

The “Doing” focuses on the management and delivery of the objectives, targets and priorities established in the Planning component. Attention is paid to the management system and consistent process for implementation. Equal attention is paid to team development with defined roles and responsibilities, action plans and programs; guidelines, policies and procedures; training, communication, documentation, working with suppliers and contractors, and finally, emergency response and preparedness.

Training

This theme area is looking for the establishment of environmental training to support informed decision-making (for both staff and council).

Strengths

The following strengths were identified that help to support informed decision-making:

- New staff receive orientation on the Town’s operations and policies.
- Environmental staff provide a consultative resource to the organization

Identified Gaps

The following gaps were identified through the workshop and interview process, which hinder informed decision-making:

- There is very limited overall environmental awareness by most staff.
- Staff and Council training programs do not include environmental management training.
- Orientation training only for full time staff. The Town has an equal number of part time and contract staff that receive no orientation training.

The strengths and gaps established in this section will help to prioritize training and informed decision-making.

Communications

This theme area looks at internal communications including newsletters, intranet, information sessions, and meetings.

Strengths

Interviewees and workshop participants recognized the following strengths in the Town's internal communications:

- The Town has a manager of internal communications.
- Video screen news is broadcast in the Town Hall and at selected malls.
- Administering first paperless agenda (can be up to 600 pages). Starting small with staff, approvals by Council, and a Document Management System.
- Several pockets of staff with "great" attitudes are open to taking on new challenges.
- Internal website.

Identified Gaps

The workshop and interview process revealed the following gaps in internal communication:

- The external website is difficult and confusing to navigate.
- No internal communications plan and no centralized filing structure.
- The Town does little to celebrate and recognize progress and/ success.
- There is poor cross-commission communications, resulting in a silo effect within the organization's structure.
- Limited cross-jurisdictional and cross-governmental communication. Regulatory agencies are difficult to contact.

Internal communication is critical to support governance, planning and informed decision-making. The strengths and gaps established through the interviews and workshop will help to establish priority areas for enhanced internal communications.

Operational Controls

This theme area looks at work procedures, practices, and physical interventions that are in place to support addressing environmental management priorities.

Strengths

The following strengths represent the findings of the interviews and workshop:

- The Town's Maintenance Manual for Stormwater Management (developed by DFO, MNR, TRCA) is considered a good tool.
- Strong Energy Conservation ethic as seen with automation of HVAC, motion sensors, and gas conversion for heat in Town facilities, and the establishment of the Markham Energy Conservation Office

Identified Gaps

The workshop and interviewees identified the following gaps in operational controls:

- There is no process to manage and track specifications such as those required for Watershed planning.

- Waste management options including blue box and compactors could be improved in some areas of the Town's operations (Parks, Recreation, and Culture Division).
- No life-cycle analysis of technology or facilities or services
- No policies to support green buildings, infrastructure or procurement
- No policies to support contaminated sites

The strengths and gaps identified around operational controls will help to establish priorities.

Document Control

The theme area looks at the mechanisms for managing environmental management documentation in a systematic and controlled fashion.

Strengths

The following strengths were acknowledged around document control through the workshop and interview process:

- Moving to a paperless agenda for Council.
- CBS on intranet provides access to staff reports and council extracts

Identified Gaps

The workshop participants and interviewees recognized the following gaps:

- No central filing system.
- No environmental policy manual.
- No tracking system for reports while they are going through approvals

The strengths and gaps identified in the area of document control and a coordinated approach to environmental management documentation will help to inform priorities.

Contractors and Suppliers

This theme area looks at practices and protocols guiding activities with external contractors and suppliers and greening the Town's supply chain. This theme area offers one of the biggest opportunities internally to reduce pollution and promote positive change through procurement.

Strengths

The following strengths were established as a result of the workshop and interviews with staff and members of Council:

- Green Procurement Policy drafted at a high-level and is underway with suppliers.
- Green Procurement specifications are being developed.

Identified Gaps

The following gaps became evident through the workshop and interview process:

- No formal system of specifying environmental management policy and requirements with current contractors
- Educations and promotion of green procurement policy to council, staff, and suppliers
- No life cycle-analysis/awareness in contractors.

Because green procurement offers one of the best opportunities to influence environmental management, a green procurement policy is identified as a priority.

Emergency Preparedness and Response (EPR)

This theme area looks at the Town's emergency preparedness status, including established response plans and staff training.

Strengths

- EPR Plan is established and is managed by the Fire Department.

Identified Gaps

The workshop and interview process revealed the following gaps:

- Some, but not all, staff have received basic training in EPR.
- There is no established process for communication to staff or the community in the event of a significant emergency.

Emergency preparedness strengths and gaps will help to establish priorities within the EMP.

Checking and Reviewing

This theme area looks at activities with respect to tracking and evaluating performance against stated goals and commitments and to reporting both internally and externally. This can include conducting internal audits and publishing Environmental Report Cards. It also includes activities to manage change, such as corrective actions to promote continual improvement and reflect adaptive management to changing conditions and new information.

Strengths

Workshop and interview participants recognized the following strengths:

- Individual performance reviews occur annually.
- The Town is developing a work culture that evaluates performance against stated goals through the Business Unit Profiles and through performance management plans
- "Way of Work" is an engrained culture in many areas of the organization need clarification around what this means.

- Business Unit Profiles review the Official Plan and monitor the Heritage Act, Greenbelt Plan, Places to Grow Act, Oak Ridges Moraine Conservation Plan, and Source Water Protection Act.

Current Annual Reviews Occur, to Some Extent, with Commissioners Identified Gaps

The following gaps became evident through the workshop and interview process:

- No reporting mechanism for staff and Council.
- No systematic tracking of performance specifically on environmental management.
- There are no integrated reviews across the Town's commissions or benchmarking analysis.
- The Town undertakes state of the environment reporting on an ad hoc basis (during strategic planning exercise, one out of three years); feedback is vague and limited.
- The Town recently purchased the licence to EEMS and now has tracking capacity within CFS
- No debriefing or reporting on performance once a capital project is built or complete.
- Lack of records of results of investment.
- Lack resources to focus on evaluation

Discussion/Summary Required

The strengths and gaps identified in the area of checking and reviewing will help to inform priorities for the EMP.



APPENDIX F
BENCHMARK STUDIES

APPENDIX F

Benchmark Studies

Town/City/ State	Goals/Plans/Policy	Sustainability Focus	Performance Reporting	Governance Structure	Funding
City of Chicago	The Mayor of Chicago has committed to being the "greenest city in America". In 2005, the City published their "Environmental Action Agenda" to outline Chicago's commitment to pollution prevention with goals and targets established for 2005 to 2020. The agenda is primarily focused on city operations with an outline of various programs and initiatives directed towards public outreach and education.	Energy-efficient municipal buildings, green procurement, new green building codes to expedite the permit process, hybrid city vehicles, alternative transportation, improved recycling practices, energy efficient city-funded housing, Chicago River restoration, stormwater management, outreach, and education.	"Environmental Action Agenda" created in 2005 to outline Chicago's strategies, goals, and accomplishments towards a sustainable city. Goals established from 2005 to 2020 for various areas of city operations.	Chicago Dept. of the Environment was first created in 1992. In 2004, the Mayor convened an environmental initiatives steering committee to coordinate City-wide environmental initiatives and envision department by department plans.	Action Agenda funded by the City with extensive grants, tax breaks/credits, discounts for businesses and the public to encourage involvement.
City of Seattle	A city-wide Environmental Management System (EMS) has established a framework for reducing the environmental impacts of City operations and services. Endorsed by City Council, the City has established an environmental policy, roles and responsibilities, and objectives and targets. The Department of Sustainability & Environment administers the EMS with a focus on identifying risks, legal compliance and performance reporting to the ISO 14001 standard.	EMS, clean air, climate protection, chemical use reduction, pesticide reduction, sustainable infrastructure/buildings, green procurement, urban forest restoration, smart mobility.	Created in 2004, The Environmental Action Agenda (EAA) presents the City's goals for protecting environmental quality, promoting environmental justice, and improving quality-of-life in Seattle. The EAA establishes the current EMS goals and targets, and lays out the programs to achieve the targets. Bi-annual progress reports also published.	The city's environmental policies are fully endorsed by the Mayor and Council. The Office of Sustainability and the Environment was created to administer the EMS in 2002 in coordination with various other city departments.	All EMS programs are funded internally by the City.
Town of Newcastle, UK	Through a local strategic partnership, Newcastle is attempting to become the world's first "carbon neutral" city by encouraging energy conservation and investing in emission offsets. Strong external communication campaigns and partnerships with businesses and the public help drive the program forward. Third party verification ensures the campaign goal of demonstrating high level transparency and accountability.	Funding local renewable energy and efficiency projects that produce very low emissions of CO ₂ . Projects include renewable energy (wind, solar, benign hydro, biomass), fuel switching/mixing to biomass, combined heat and power (CHP), transportation/logistics projects, energy efficiency and recycling.	Since 2001, the city has published an Eco-Management & Audit Scheme (EMAS) to publicly report the performance of its carbon neutral campaign. The results are verified annually by KPMG to accurately benchmark performance and ensure legitimacy.	EMS is supported by the Mayor and Council, and is administered internally by the Neighborhood Services Department. Carbon Neutral Newcastle is administered by the Enterprise, Environment & Culture department in collaboration with "Future Forests" and strong public and private community partnerships.	EMS is funded internally by the Town of Newcastle. Carbon Neutral Newcastle is subsidized by national financial backers (the Carbon fund) and international backers (the European Commission), including sponsorship from "main partner" companies (Euro 33,000 each). Initial estimates based on the number of participants of the program reveal that every year between 20,000 and 150,000 tons of CO ₂ will be "neutralised", generating between €492,500 and €3,448,000 of income for the Carbon Neutral Newcastle fund.
City of Calgary	The City of Calgary has the only city-wide ISO 14001 registered EMS in Canada. With a policy commitment of continual improvement, pollution prevention and legal compliance, the City has set targets, reports on its performance, and conducts internal and external audits to review performance on a regular basis.	1. ISO 14001 registered EMS "Envirosystem" (the only ISO registered city in Canada). 2. "imagineCALGARY", a 100-year vision for Calgary and 30-year targets and strategies toward the vision.	Beginning in 1998, <i>State of the Environment</i> reports have been published by the City of Calgary to communicate its environmental performance. In 2003, the first EnviroSystem Report was published to provide an internal view of the cities environmental performance in relation to the city-wide EMS and focused on reporting on performance, development and continual improvement of city operations.	EMS is supported through the Executive Leadership Team's endorsement of the environmental policy and is administered by the Environmental Management (EM) business unit. The EM is administered by three divisions: <ul style="list-style-type: none">• Environmental Policy and Strategic Initiatives• EnviroSystem and Corporate Services• Environmental Assessment and Liabilities	All of Calgary's ISO 14001 registered EMS "Envirosystem" are funded internally by the City as the result of a legal ruling from a previous spill. Imagine Calgary implementation is being funded as follows: City of Calgary: \$2.25 million (committed), Federation of Canadian Municipalities: \$350,000 (requested), and Western Economic Development: \$200,000 (requested).

Town/City/ State	Goals/Plans/Policy	Sustainability Focus	Performance Reporting	Governance Structure	Funding
Greater Vancouver Regional District	The Sustainable Region Initiative (SRI) is a unique framework, vision, and action plan for Greater Vancouver based on the concept of sustainability that embraces economic prosperity, community well-being, and environmental integrity. The goal is for the GVRD to be the catalyst for a process which has many owners and many actors who are engaged in the task of providing for a better region for this and future generations. Goals and targets have been established and yearly performance reports are published based on the GRI guidelines.	Land, air, water, liquid waste, solid waste, energy, affordable housing, transportation, security, emergency management, employees, economy.	In 2002, the GVRD produced its first sustainability report based on the guidelines of the of the Global Reporting Initiative (GRI). The reports contain performance indicators to benchmark and gauge performance and a GRI comparative index which outlines the correlation between GRI and the performance measures presented in the report.	The SRI is designed to expand beyond the GVRD and involve various levels of government, the community, non-governmental organizations, institutions and public and private institutions, known as the <i>SRI Partners Committee</i> . The SRI Partners Committee also created an <i>SRI Assembly</i> composed of representatives of up to 25 organizations who took positions of ownership and engagement in the SRI, and who collectively represented the spectrum of interests needed for the region to make the transition to social, economic, and environmental sustainability.	The SRI is funded through municipal tax requisition to support corporate and mandated responsibilities. Revenues for the SRI Partnership initiatives are raised through sponsoring agencies. Established in 2003, the GVRD also maintains a Sustainable Enterprise Fund to assist member municipalities to share the risk associated with pursuing sustainable approaches in their core business functions. The fund provides up to \$125,000 annually (\$25K max. per project) for projects with region-wide applicability. Projects limited to one municipality may be eligible for 10% of the total eligible costs, to a maximum of \$10K.
Portland, OR	Portland's City Council has set goals to recycle and reduce solid waste, conserve energy and natural resources, increase the use of renewable energy, prevent air, water and land pollution, and find new ways to improve personal and community health. Targets have been established for each, and the Office of Sustainable Development produces yearly performance reports outlining Portland's specific accomplishments, financial savings and resources conserved.	Solid waste, resource and energy conservation, green buildings, renewable energy, air, water and land pollution, food policy, partnerships, improved personal and community health, and performance benchmarking.	In 2004, the Office of Sustainable Development (OSD) produced its first annual report outlining Portland's accomplishments based on the sustainability goals established by City Council. The OSD is currently developing a new mechanism for each City Bureau to document and report on their individual sustainability activities in a more coordinated fashion.	In 1994, City Council adopted the "Sustainable City Principles" and elected the following City committees to follow through on the various initiatives: Sustainable Infrastructure Team, Sustainable Procurement Steering Committee, Green Building Advisory Team, Departmental Green Team(s), Bureau of Maintenance – Pollution Prevention Team, and the Sustainable Development Commission – a citizens advisory group to Council.	The majority of environmental programs are funded internally by the City of Portland. Outside funding has been provided for a limited number of special projects, including Business Energy Tax Credits from the State or Oregon, funding from the Energy Trust of Oregon to build a wind turbine, and creative financing (3rd party leasing) to replace stoplight incandescent bulbs with energy efficient LEDs.
Common Themes	All initiatives started at senior corporate level. Central office or business unit established to create and implement program and iniativies.	Energy management and pollution prevention, including reducing waste and recycling.	All prepare annual report with performance measurement.	Single department common, some committee of council for specific initiatives.	Majority funded internally, outside source funding for implementation of specific initiatives – such as FCM.