Appendix A

WATER SUSTAINABILITY PLANNING

TOWN OF OAKVILLE

Final Draft

Submitted to:

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Oakville, Ontario

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TABLE OF CONTENTS

Appendices

Figures

ACRONYMS

EA	➢	Environmental Assessment
EIS	➢	Environmental Impact Study
ENGEN	➢	Engineering
ESA	➢	Environmentally Significant Area
ESP	➢	Environmental Strategic Plan
DFO	➢	Federal Department of Fisheries and Oceans
GIS	➢	Geographic Information System
GLSLCI	➢	Great Lakes St. Lawrence Cities Initiative
GPR	➢	Ground Penetration Radar
GRCA	➢	Grand River Conservation Authority
HCWF	➢	Halton Children's Water Festival
HHWSPs	➢	Hamilton-Halton Watershed Stewardship Program
ICLEI	➢	International Council for Local Environmental Initiatives
IDF	➢	Intensity Duration Frequency
IRM	➢	Integrated Risk Management
IWA	➢	International Water Association
LEMP	➢	Long-term Environmental Monitoring Program
LID BMPs	➢	Low Impact Development Best Management Practices
LWRT	➢	Low Water Response Team
MEDT	➢	Ministry of Economic Development and Trade
MMAH	➢	Ministry of Municipal Affairs and Housing
MNR	➢	Ministry of Natural Resources
MOE	➢	Ministry of the Environment
MPMP	➢	Municipal Performance Measure Program
OMAFRA	➢	Ontario Ministry of Agricultural, Food and Rural Affairs
OMB	➢	Ontario Municipal Board
PB2	➢	Performance Based Budgeting
PIEVC	➢	Public Infrastructure Engineering Vulnerability Committee
QA/QC	➢	Quality Assurance/Quality Control
QEW	➢	Queen Elizabeth Way
Region	➢	Region of Halton
ROPA	➢	Regional Official Plan Amendment
SDG	➢	Sustainable Design Guidelines
SMP	➢	Strategic Management Plan
SWMPs	➢	Stormwater Management Ponds
Town	➢	Town of Oakville
UDG	➢	Urban Design Guidelines
UNESCO	➢	United Nations Educational, Scientific and Cultural Organization
WNV	➢	West Nile Virus
WOA	➢	Water Opportunities Act
WSP	➢	Water Sustainability Plan

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1.0 INTRODUCTION

In late 2011, the Town of Oakville (Town) in collaboration with the Ministry of the Environment (MOE), the Region of Halton (Region), and the Great Lakes St. Lawrence Cities Initiative (GLSLCI) initiated this study with the objective to develop an approach to be used in the development of a long-term Water Sustainability Plan. AMEC Environment & Infrastructure (AMEC) was retained by the Town to undertake this study and to consult with Town staff as well as the Region, Conservation Halton, MOE, and other area municipalities to define the important issues and opportunities related to the future preparation of Water Sustainability Plans.

1.1 Background to the Water Opportunities Act

In 2010, the Ontario Ministry of the Environment released the Water Opportunities Act (2010) (ref. Appendix A1). As stated in the Water Opportunities Act Fact Sheet (Ref. Appendix A2), the Act sets the framework to assist municipalities to improve the efficiency of municipal infrastructure and services by:

- *Identifying innovative, cost effective solutions for drinking water, sewage and stormwater system challenges,*
- *Optimizing systems and improving water conservation, and*
- *Identifying opportunities to demonstrate and carry out new and emerging Ontario water technologies, services and practices.*

The Act enables the authority to require municipalities and other water service providers to prepare Municipal Water Sustainability Plans. These plans according to the Act are intended to promote water efficiency as a cost effective way to generate additional water and wastewater capacity.

Based on MOE's Fact Sheet, the Provincial perspective on the intent of the Water Opportunities Act is to:

- *Make Ontario the North American leader in the development and sale of water conservation and treatment technologies;*
- *Encourage sustainable infrastructure and conservation planning using made-in-Ontario technologies to solve water, wastewater and stormwater infrastructure challenges, and*
- *Encourage all Ontarians to use water more wisely.*

Based on consultation with Ministry of the Environment staff during this study process, it is understood that the Ministry of the Environment is currently working on preparing the Regulations that will accompany the Act. The Regulations will set out the specific requirements for a Water Sustainability Plan.

1.2 Relevant Aspects of the Water Opportunities Act

During the course of the study, the Water Opportunities Act was reviewed with the intent of better understanding the relevant terminology and sections as they specifically apply to the preparation of Water Sustainability Plans. In the pilot case of the Town of Oakville, a specific emphasis has been placed on the Upper Tier (Region of Halton) relationship, with an overriding emphasis on the Town's responsibility to provide stormwater services. Given this focus, Conservation Halton has also been drawn into the direct consultation since the Authority and

Town partner on many stormwater based services (NOTE: red text below highlights items that are considered of direct importance).

Section:

Municipal water sustainability plan

25. (1) On becoming a regulated entity under the regulations, a municipal service provider shall, in accordance with such requirements as may be prescribed, prepare, approve and submit to the Minister a municipal water sustainability plan for all municipal services,

(a) That are under the municipal service provider's jurisdiction; and

(b) To which, under the regulations, the regulated entity's initial plan is to apply.

Importance:

This section of the Act requires a municipal service provider (such as the Town of Oakville) to prepare a Water Sustainability Plan. Depending on the municipality and the services it provides, the contents of the Plan will be commensurate. Also, the municipality will be responsible for the preparation and approval of a Plan, therefore the municipal Council will ultimately be responsible for the final approval of the Plan. This process then places formal policy obligation on the Council and Staff.

Section:

Requirements for plan

26. (1) A plan must satisfy the requirements prescribed by the regulations.
Contents of plan
(2) Without limiting the generality of subsection (1), the regulations may require a plan to include any of the following matters, prepared in accordance with such requirements as may be prescribed, with respect to each municipal service to which the plan applies:

1. *An asset management plan for the physical infrastructure.*
2. *A financial plan.*
3. *If the municipal service is a municipal water service, a water conservation plan.*
4. *An assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks.*
5. *Strategies for maintaining and improving the municipal service, including strategies to,*
   - i. *ensure the municipal service can satisfy future demand,*
   - ii. *consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and*
   - iii. *increase co-operation with other municipal service providers.*
6. *Such other information or things as may be prescribed relating to the municipal service.*

May include additional information
(3) A regulated entity may include in a plan such additional information or things as it considers advisable

Importance:

This section of the Act outlines some of the possible content of a Water Sustainability Plan; the ultimate content though will be refined further as the Regulations are prepared. Based on dialogue with the Ministry of the Environment it is understood that if certain information already exists (such as an Asset Management Plan), it would not be the intent of the Water Sustainability Plan to reassemble such information but rather incorporate its content and availability into the Water Sustainability Plan.

1.3 Definition of Water Sustainability Plan

As with any new terminology there will always be various interpretations. As part of this study, members of the Project Team were requested to provide their definition of a Water Sustainability Plan (ref. Appendix 'C').

It is suggested that as the Regulations are developed an effort should be made by the Ministry of the Environment and other partners to develop a consistent and robust definition of what a Water Sustainability Plan is and what it needs to achieve in terms of governing goals and objectives.

1.4 Study Process

As noted in the Introduction background, the intent of this study has been to have consultation and dialogue with the Town of Oakville and its direct partners including the Region of Halton, Conservation Halton, and the Ministry of the Environment, to determine how water services are provided now and from this consultation to better define what issues and opportunities exist with respect to the sustainable delivery of these services. The Town of Oakville, as a lower tier municipality, focuses on stormwater services, hence its situation will differ from other municipal jurisdictions across the Province. As such, during this study, additional consultation was conducted which was intended to broaden the knowledge base related to the role of other water service providers.

The initial effort in this study, concentrated on defining the mandate of the Town of Oakville, Region of Halton, and Conservation Halton (as related to water services only) and from this develop a form of hierarchy of the respective Strategies, Policies/Plans, Procedures/Programs and Practices/Guidelines/Studies which to varying degree guide each of the water service providers.

The various consultation efforts then led to the establishment of a refined list of primary water based services which eventually became the template for organizing Issues and Opportunities. The respective Issues and Opportunities then were used to guide the Project Team to develop a set of recommendations for future Water Sustainability Plans to consider both in process and content, including consultation approaches.

Finally a variety of recommendations are advanced for consideration related to next steps and implementation.

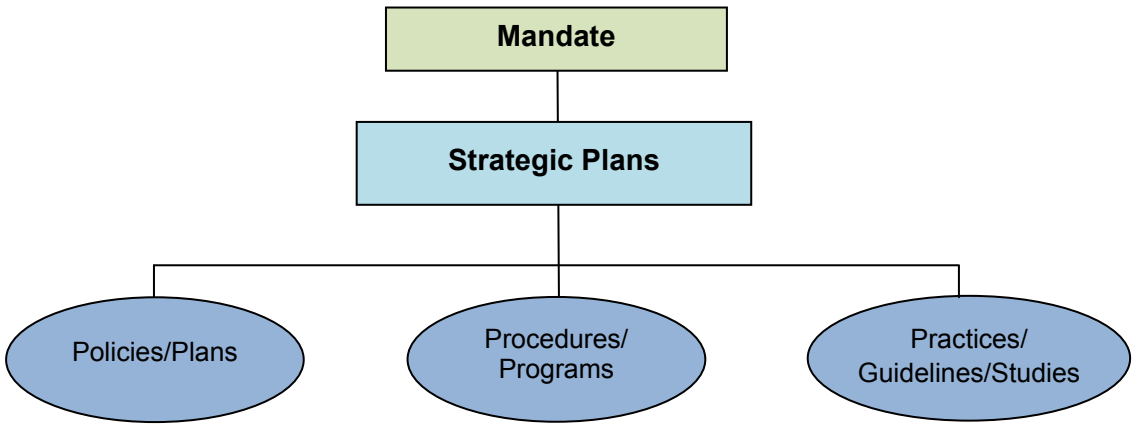
2.0 PUBLIC WATER SERVICE PROVIDERS

A primary task of this project has focused on the identification and compilation of relevant background documents as related to water, wastewater and more specifically stormwater services. As part of the initial stages of this project Town of Oakville, the Region of Halton and the Conservation Halton were requested to provide specific documentation which summarizes the various policies, procedures and programs, its responsibility and role related to which each is responsible for, associated with water, wastewater and stormwater services.

In order to effectively use and organize the information obtained from each water service provider; this information has been compiled and structured to provide a consistent basis for comparison of information between each public water service provider. This information has been used to identify and further define Issues and Opportunities related to the provision of water based services in the context of future Water Sustainability Plans.

The information has been compiled as follows:

- ***Who:*** Outlines the three key players including Town of Oakville, Region of Halton, and Conservation Halton.
- ***What:*** Information on Water, Wastewater and Stormwater.
- ***Mandate:*** Describes the mandate of the three leading organizations focusing specifically on water. Also describes any related mandates or directives on Sustainability and/or Physical Environment as they pertain to water.
- ***Strategic Plans:*** Identifies high level direction and associated water-based goals and objectives for the three organizations (i.e. Official Plans, Council Priorities),
- ***Policies/Procedures/Practices:*** Related documentation providing guidance as related to the provision of water-based services for water, wastewater, and stormwater.



Note: The various water based services and activities which the Town, Region, and Conservation Halton provided have been categorized according to the above matrix however in some cases where direction may not have been clear or explicit, the Project Team has used its judgement to organize the related information.

2.1 Town of Oakville Water Framework

2.1.1 Introduction

The Town of Oakville is located along Lake Ontario and is a municipality with a strong heritage, preserved and celebrated by residents and visitors alike (ref. Figure 2.1). The Town is committed to enhancing Oakville's natural environment and promoting awareness of environmental policies, issues and initiatives. This commitment is evident in many of the Town's recent initiatives including the update to the Official Plan, the Environment Strategic Plan, the Urban Forest Management Plan and its on-going commitment to public outreach and education. All of these initiatives are to achieve the overall goal of the Town to make Oakville the most "Livable Town" in Canada.

2.1.2 Mandate

The Town's mandate for the provision of stormwater services has not been explicitly articulated, however based on common objectives amongst municipalities and dialogue with Town staff, it is considered that the Town's Stormwater Mandate can be paraphrased as:

> *"Oakville is responsible for establishing criteria related to the design of stormwater systems in partnership with other government agencies. In addition, the Town operates, maintains and monitors the municipal drainage network to ensure that it continues to operate as per its design objectives"*

Figure 2.2 outlines the Water Framework related to the various Strategies, Policies/Plans, Procedures/Programs and Practices/Guidelines/Studies.

2.1.3 Strategies

Livable Oakville Town of Oakville Official Plan 2009 (May 10, 2011)

Purpose:

The Town of Oakville developed its new official plan (Livable Oakville) for the lands south of Dundas Street and north of Highway 407 that was approved by the Ontario Municipal Board (OMB) on May 10, 2011. The purpose as outlined in the Official Plan is:

i. Establishes the desired land use pattern for lands within the Town, south of Dundas Street and north of Highway 407, to 2031;
ii. Coordinated land use and infrastructure requirements to ensure that the anticipated growth can be accommodated;
iii. Establishes a framework and policy context for decision making that provides certainty for the planning process; and
iv. Conforms or does not conflict with provincial plans, has regard to matters of provincial interest, and is consistent with provincial policy statements.

The plan contains goals, objectives and policies established primarily to manage and direct physical change and the effects on the social, economic and natural environment of the municipality.

Key Elements:

The Livable Oakville Plan defines sustainable development as "*development that meets the needs of the present without compromising the ability of the future generations to meet their own needs."*

Relevant sections include:

Section 2.2.3 Achieving sustainability – in order to:

i. Minimize the Town's ecological footprint
ii. Preserve, enhance and protect the Town's environmental resources, natural features and areas, natural heritage systems and waterfronts; and,
iii. Achieve sustainable building and community design.

Section 10.0 Sustainability

Section 10.1.1 Objectives

The general objectives for sustainability are:

i. To minimize the Town's ecological footprint;
ii. To achieve sustainable building and community design;
iii. To preserve, enhance and protect the Town's environmental features,, natural heritage systems and waterfronts;
iv. To enhance the Town's air and water quality;
v. To maintain the existing urban forest, and
vi. To progressively increase the urban forest to achieve a canopy cover of 40% Town-wide beyond the life of this Plan.

Additional Sections of Interest include:

- 10.2 Climate Change Programs – policies relating to the reduction of greenhouse gas emissions
- 10.3 Corporate policies – policies directed at the Town taking a leadership role through its Environmental Policy Department and other affected departments by implementing programs and policies
- 10.4 Energy Conservation – policies relating to energy conservation in new development
- 10.5 Energy Generation – policies that encourage new energy generation
- 10.6 Green Buildings – policies directed at innovated programs and construction methods
- 10.7 Greyfields and Brownfields – ensures consistency with policies in Section 11.19 of the Official Plan
- 10.8 Waste Management – encourage waste diversion
- 10.9 Subwatershed Planning – policies that encourage the implementation of recommendations from Subwatershed Planning

- 10.10 Stormwater Management – policies that are directed at the control of both quantity and quality of stormwater runoff
- 10.11 Air Quality – polices geared at improving air quality
- 10.12 Urban Forest – management of the Town's urban forest
- 10.13 Hazard Lands – policies geared at protecting hazard lands
- 10.14 Aggregates – restrict the location of new aggregate facilities.

The Town encourages development which reflects the principle of sustainable development through a sustainable development checklist. The checklist is used as a tool for assessing sustainable development features of applications.

Section 16 Natural Areas

The purpose of this section is to provide policies and direction for the long-term preservation of natural features and functions. It is recognized that the "diversity and connectivity of natural features in creating a system, and the long-term ecological function and biodiversity of natural heritage features, should be maintained, restored or, where possible, improved, recognized links or corridors between and among natural heritage features and areas, surface water features and groundwater features".

Section 17 Open Space

Open space lands are a valuable resource that needs to be protected.

Relevance:

The Town of Oakville's Official Plan sets out the main planning direction for the Town. Any policies or procedures developed under a future Water Sustainability Plan will have to be consistent with the policies in the Official Plan. There is considerable commitment to sustainability practices and ensuring that development is implemented so as to not restrict future generations.

Council's Strategic Plan and 2011-2014 Work Plan

Council's Strategic Plan

Purpose:

The purpose of the Council's Strategic Plan is to set the direction for all of the Town's plans following three fundamental elements: vision, mission and values. It is a continual work in progress so that over time as new priorities, opportunities, demands and challenges emerge, the town can respond quickly and effectively to changing directions.

Key Elements:

Vision: To be the most livable town in Canada.

Mission: We create and preserve Canada's most livable community that enhances the natural, cultural, social and economic environments.

Strategic Goals: To enhance our natural environment
To be environmentally sustainable
To be fiscally sustainable

2011-2014 Work Plan

Purpose:

The purpose of the 2011-2014 Work Plan is to outline the Council's Goals, the Objectives, Key Actions for 2011, Key Actions 2012-2014 and identification of Measures. The Work Plan provides additional information on eight (8) of the Strategic goals.

Key Elements:

The main sections that relate to water, sustainability or the physical environment are:

Goal – To be environmentally sustainable

Objection – To develop and promote innovative and sustainable environmental practices that reduce town and community impact on the environment

Key Actions 2011 –

- Complete corporate sustainability plan
- Update Environmental Strategic Plan
- Launch Integrated Community Sustainability Plan (ICSP) consultation
- Implement health protection air quality By-law
- Continue to review energy management at town hall and other town facilities to identify potential savings
- Work with Oakville Hydro to launch solar energy arrays on town facility roofs
- Develop north Oakville forestry pan to support 40% tree canopy target
- Develop strategy to response to threat of Emerald Ask Borer
- Continue implementation of corporate sustainability policies and practices
- Implement new bike lanes in Oakville to support active transportation.

Relevance:

Council's Work Plan and Strategic Plan details Council's priorities for the next four years, within which there is a continual focus on sustainability and a clear commitment on Council's part to achieving environmental sustainability. A future Water Sustainability Plan will be another vehicle that will need to work towards fulfilling this goal.

Oakville Sustainability Framework

Purpose:

The Oakville Sustainability Plan will provide a framework for the corporation (Corporate Sustainability Plan) and community (Integrated Community Sustainability Plan) to achieve sustainability for present and future generations. The plan will integrate economic, environmental, cultural and social aspects in corporate decision making and community actions. The long-term goal of the plan is to achieve strong community partnerships, strengthen our resiliency, implement solutions for change and enhance our quality of life.

Relevance:

The Oakville Sustainability Plan will help the Town achieve its goal of sustainability for present and future generations. A future Water Sustainability Plan will assist the Town in meeting this goal.

2.1.4 Policies/Plans

Environmental Strategic Plan, 2011 Update (December 19, 2011)

Purpose:

The Town of Oakville updated its Environmental Strategic Plan (ESP) in 2011 and it represents the Town's commitment to a series of ongoing and planned activities to improve the Town's natural environment over the next five years. The ESP provides opportunities for residents, environmental groups, commercial interests, industry, community associations, educators and all other community interests to identify what they can do to protect and improve their environment, along with the Town of Oakville.

Key Elements:

Vision: This plan recognizes that the quality of life rests on the quality of the environment and on respect for natural and cultural heritage. Individually and collectively, citizens act with innovation and creativity to protect and enhance the ecological environment, while maintaining a vibrant social, cultural and economic base.

Guiding Principles (10) including (bolded elements are relevant to this project):

i. **Build partnerships to work towards solutions to environmental challenges and opportunities that span geographic and administrative boundaries.**
ii. **Use education, communication and capacity building to engage the community in implementing the ESP.**
iii. **Anticipate the environmental needs of our community and commit to the use of innovative and best practices to facilitate continuous improvement.**
iv. Work together to meet our environmental goals within a responsible fiscal, cultural and social framework, evaluating life-cycle costs and benefits as well as social implications of proposed actions.
v. Act openly and transparently in planning, decision-making and implementation.

vi. Include accountability measures to ensure we meet present and future needs of Oakville for a healthy environment.

vii. **Act as both advocates and stewards for Oakville's environment.**

viii. Ensure that our local actions contribute to the resolution of regional and global environmental issues

ix. Ensure that all residents have an equal opportunity to contribute to the implementation of ESP.

x. **Embrace adaptive management as a key component of our planning cycle to ensure Oakville is a resilient community.**

Goal 1: To sustain and enhance the natural environment with the following:

- Objective 1.1 To protect and enhance our biodiversity (Actions 1.1.1 to 1.1.8)
- Objective 1.2 To protect and enhance our urban forest (Actions 1.2.1 to 1.2.2)
- Objective 1.3 To protect and enhance our waterways (Actions 1.3.1 to 1.3.14)
- Objective 1.4 To protect and enhance our air quality (Actions 14.1 to 1.4.5)
- Objective 1.5 To increase ecological landscaping (naturalization) on private and public property (Actions 1.5.3 and 1.5.4)
- Objective 1.6 To reduce and manage the impacts of climate change (Actions 1.6.1 and 1.6.2)

Goal 4: To create and support a healthy and resilient community with the following:

- Objective 4.1 To improve the health and safety of Oakville's neighbourhoods (Actions 4,1,1 to 4.1.3)
- Objective 4.2 To foster and sustain an environmentally sustainable urban form (Actions 4.2.3 and 4.2.4)
- Objective 4.3 To support green building practices (Actions 4.3.1 to 4.3.3)
- Objection 4.4 To support outdoor recreational opportunities in Oakville (Actions 4.4.1 to 4.4.4)

Goal 6: To lead in applying innovative best environmental management practices

- Objective 6.1 To be leaders in research, development and implementation of innovative environmental programs (Actions 6.1.1 to 6.1.8)
- Objective 6.2 Promote partnerships with local businesses, schools and organizations (Actions 6.2.1 to 6.2.2)

Relevance:

The Environmental Strategic Plan (ESP) outlines the Town's on-going commitment to the protection and enhancement of the natural environment. Relevant components of the ESP include the focus on Climate Change initiatives and the naturalization of public and private property. Also, it encourages input and opportunities for members of the general public to be involved in environmental initiatives.

North Oakville East Secondary Plans and North Oakville West Secondary Plans

Purpose:

The purpose of the North Oakville East Secondary Plan (NOESP) was to establish a detailed planning framework for the future urban development of the North Oakville East Planning Area (bounded by Highway 407 and the Town's boundary to the north, Ninth Line to the east, Dundas Street to the south, and Sixteen Mile Creek to the west) and the North Oakville West Secondary Planning Area (bounded by Highway 407 and the Town's boundary to the north, Sixteen Mile Creek to the east, Dundas Street to the south, and Tremaine Street to the west).

Key Elements:

The Secondary Plans defines sustainable development as "*development that meets the needs of the present without compromising the ability of the future generations to meet their own needs."*

Section 7.4 Sustainable Development Strategy

The Sustainable Development Strategy provides policies with respect to the implementation of the principle of sustainable development as it relates to development form, and specifically to the protection, conservation and enhancement of air, water and ecological features and functions, energy and other resources, and heritage resources.

Additional relevant sections include:

- Section 7.4.1 Purpose – outlines the Town's commitment to the principle of sustainable development.
- Section 7.4.2 Development Form – based on a conceptual design that features mixed use development, a modified grid road system and a Natural Heritage and Open Space System.
- Section 7.4.4 Application Review – outlines the policies to be incorporated as part of the review process.
- Section 7.4.5 Water Management – based on the elements in the North Oakville Creeks Subwatershed Study.
- Section 7.4.6 Natural Heritage and Open Space System – outlines the purpose and rationale for the Natural Heritage and Open Space Systems
- Section 7.4.7 Natural Heritage Component of the Natural Heritage and Open Space System – includes all of the various components to be incorporated in the Natural Heritage and Open Space Systems.
- Section 7.4.8 Other Hydrological Features - Natural Heritage Component of the Natural Heritage and Open Space System – outlines policies for the other Hydrological Features
- Section 7.4.9 Open Space Facilities – Open space Components of the Natural Heritage and Open Space System – outlines the policies for the Open Space Facilities.
- Section 7.4.10 Natural Heritage and Open Space System Securement – includes Town's commitment to secure property for the Natural Heritage and Open Space System.

- Section 7.4.11 Relationship of Natural Heritage and Open Space System to Regional Greenland Designations – coordination between Town and Region's policy.
- Section 7.4.12 Natural Heritage Component Management – outlined in the North Oakville Creeks Subwatershed Study Implementation Report.
- Section 7.4.13 Flood Control – policies related to flood control and peak flow control.

Relevance:

The North Oakville East Secondary Plan and North Oakville West Secondary Plan set out the planning direction for a large land area of the Town of Oakville. The policies and guiding principles set out in the Sustainable Development Strategy section of the respective Secondary Plans may be used as a basis for the content of a future Water Sustainability Plan.

North Oakville Creeks Subwatershed Study

Purpose:

The purpose of the North Oakville Creeks Subwatershed Study was to determine the potential impact development in the North Oakville Area would have on the creeks and natural areas. The comprehensive North Oakville Creeks Subwatershed Study comprises four volumes including: Characterization, Analysis, Management Strategy, and Implementation Plan. It was developed over four years from 2002 to 2006 involving a multi-agency stakeholder group and a Technical Agency Review Committee with municipal, provincial and federal representation.

Key Elements:

The Study identifies specific management requirements related to water balance, stormwater servicing, stormwater infrastructure, watercourse management, habitat protection, phasing considerations and study requirements for development.

The North Oakville Creeks Subwatershed Study also provides the terms of reference for the Environmental Implementation Report (EIR) which must be prepared for the watershed sub-areas impacts through a development plan. The EIR will include the following:

- Preservation of the Natural Heritage System (NHS);
- Protection and rehabilitation of stream corridors and linkages;
- Stormwater management, hydrogeology/water balance, water quality and erosion; and
- Refinement of floodplain mapping and hydrological features.

Relevance:

The North Oakville Subwatershed Study establishes a framework for Stormwater and Environmental Management Systems for the North Oakville Secondary Plan areas. As a guidance document for the headwater system within the Town, the plan has particular focus and emphasis on reducing flood risk and erosion proneness downstream throughout the existing built-up area of the municipality. In addition, it prescribes means to address potential water quality impacts from urbanizing areas. As one of the most contemporary subwatershed studies in the Town, it offers insight with respect to current stormwater management objectives. A

future Water Sustainability Plan will need to take into account the stormwater management approaches outlined in the NO Creeks SWS when planning and designing the Town of Oakville drainage infrastructure.

Urban Forest Strategic Management Plan (SMP) for the Town of Oakville 2008 – 2027 (March 2008)

Purpose:

The purpose of the Urban Forest SMP was to review the existing management of the Town's urban forest and to recommend improvements for its stewardship on both public and private lands.

Key Elements:

The Urban Forest SMP provides for the protection and enhancement of Oakville's urban forest with specific targets including achieving a 40% canopy cover by 2057. The Plan recognizes that urban forests contribute to water quality and quantity improvement through stormwater control, attenuation of peak flows, maintenance of base flow, erosion control and rainfall interception. The Urban Forest SMP presents a 20-year plan (2008-2027) that recommends 77 actions with itemized implementation actions and performance goals. The 77 recommended actions range from the Town amending its Official Plan to designate its municipally-owned urban forest as 'green infrastructure', to completing tree inventories for all street trees, with a focus on collecting information on trees in the oldest and youngest age classes.

Relevance:

The Urban Forest SMP recognizes the importance of urban forest cover and its connection to stormwater management at all levels. A future Water Sustainability Plan will need to recognize the importance of urban forest cover and make accommodations for the Town's goal of achieving 40% canopy cover. It is recognized that stormwater management ponds and the green space surrounding the facilities are potential locations to increase the urban forest cover.

North Oakville Urban Forest Strategic Management Plan (September 2, 2009)

Purpose:

The purpose of the North Oakville Urban Forest Strategic Management Plan was to provide high-level strategy and planning recommendations for achieving a sustainable, healthy urban forest within the North Oakville Area (lands north of Dundas Street to the Town Limit at Lower Base Line west to Tremaine Road and east to Ninth Line). The North Oakville Urban Forest SMP is one of the recommendations of the Urban Forest SMP produced by the Town of Oakville (2008 – 2027).

Key Elements:

16 recommendations were set out to assist the Town of Oakville in achieving a 40% canopy cover target.

No.3 Implement design standards for 'greening parking lots'.

No.7 Provide incentives to discourage unnecessary tree removal (i.e. canopy cover credit).

No.16 The Town should apply new tree planting standards town-wide.

Relevance:

Similar to the Town-Wide Urban Forest SMP, in which the importance of urban forest cover and its connection to stormwater management is recognized. There is undeveloped land in this area that will allow for innovative measures to ensure canopy cover is retained and increased to assist the Town in meeting the overall 40% canopy cover target.

Environmental Sustainability Policy ENGEN-01(April 2006)

Purpose:

The Environmental Sustainability Policy recognizes the importance of a sustainable environment, in which individual and collective actions are encouraged to protect and enhance the ecological environment, while maintaining a vibrant cultural, social and economic base. Such actions (encouraged in the Environmental Sustainability Policy) shall encompass the core sustainability elements of: living within the limits, understanding the interconnections among environment, culture, society and economy, and equitable distribution of resources and opportunities.

Key Elements:

The Town shall incorporate the following goals in all corporate initiatives and shall encourage respect for these within the community:

i. To sustain and enhance our natural resources – airsheds, watersheds, shoreline, landscapes, flora and fauna.
ii. To reduce consumption and increase efficiency in resource and material use.
iii. To establish an environmentally friendly transportation system that improves mobility.
iv. To maintain and improve the health, cleanliness, safety and vitality of our neighbourhoods.
v. To foster an educated, aware and engaged community acting as responsible stewards for the environment.
vi. To create, adapt and apply best environmental and risk minimization practices.

Procedures that fall under the Environmental Sustainability Policy include:

- Sustainable Green Fleet Procedure ENGEN-001-001
- Sustainable Purchasing Procedure ENGEN-001-002
- Sustainable Building Design Procedure ENGEN-001-003
- Towards Zero Waste Procedure ENGEN-001-004
- Clean Air Strategy (procedure forthcoming)
- Wildlife Strategy (procedure forthcoming)

Relevance:

The Environmental Sustainability Policy supports the Town's perspective on corporate initiatives which reinforce sustainability principles. As to those which are considered relevant to a Water Sustainability Plan, they include watersheds, landscapes, flora, and fauna, as well as Community Stewardship. A future Water Sustainability Plan is expected to become one of the key supporting plans which underpin the Environmental Sustainability Policy.

Climate Change Strategy

Purpose:

The Town of Oakville is one of 12 signatory municipalities working with the International Council for Local Environmental Initiatives (ICLEI) - Local Governments for Sustainability, to create a corporate Climate Change Adaptation Plan. Town staff is moving through a five milestone (Milestone 1 – Initiate, Milestone 2 – Research, Milestone 3 – Plan, Milestone 4 – Implement, and Milestone 5 – Monitor/Review) process with a staff team of individuals from many Town departments. Milestone 1 was completed in early 2011 and Milestone 2 is currently being completed.

Key Elements:

Several key expected impacts related to climate change include more extreme weather events, flooding, and increased evaporation, and increased temperatures, and these will affect water and stormwater management activities. It is expected that this staff-developed plan will consolidate on-going adaptation and mitigation activities and forecast future actions to address potential climate change impacts.

Relevance:

Climate change is becoming an increasingly more complex issue for municipalities to address. Climate change and the policies prepared under this initiative will have to be taken into consideration with the development of a Water Sustainability Plan. The Water Opportunities Act recognizes a potential stressor from Climate Change as to its influence on the future delivery of water services. As such, the directions within the Climate Change Strategy and any adaptation approaches which influence water service provisions will need to be recognized in a future Water Sustainability Plan.

Site Alteration By-law 2008-124

Purpose:

Site Alteration By-law 2008-124 is a tool administered by the Development Engineering Department, Permits and Construction Section, to regulate the placing or dumping of fill, removal of topsoil, and alteration of grade in the Town of Oakville.

Key Elements:

A permit is required to regulate earthworks which may occur outside or in-advance of the subdivision or site plan approval processes. Prior to approval, clearances are provided by outside agencies such as Halton Region or Conservation Halton, as deemed necessary. Under this by-law, Erosion and Sediment Control plans and features are to be designed, installed and monitored on sites that are approved through the development process. Staff within Development Engineering reviews Erosion and Sediment Control plans and reports are submitted in support of development applications to ensure control types are appropriate and sufficiently placed throughout the plan to control sediment in runoff. Staff has recently updated the Town's Development Engineering Manual to reflect the most current references while providing for other best management guidelines and practices.

Relevance:

Where lands are potentially altered without appropriate controls, there can be unmanaged and deleterious release of sediment into area waterways and drainage infrastructure, which can cause impacts with respect to the environmental function of these systems, as well as their normal and safe operations. Ensuring a proper and managed process of site alteration will ensure that the respective drainage systems (both natural and manmade) are fully functional and environmentally sustainable.

Parks Rules and Regulations By-law

Purpose:

The Parks Rules and Regulation By-law 1999-159 prescribes rules and regulations for parks within the Town and prohibits the discharge of any water or pool water into parkland that includes valleys, gores, trails, and harbour lands. The Parks Rules and Regulation By-law states that the Parks of the Town are for the benefit and pleasure of all persons.

Relevance:

It is considered important to manage the discharge of water or pool water into a greenspace including parks. This objective relates to the need to ensure there is no excess runoff or discharge which is potentially treated with chlorine and other chemicals, and thereby influence adjacent environmental functions.

Storm Sewer Use By-law

Purpose:

The storm sewer use by-law (2009-031), approved by Council in 2008 and amended in 2009, sets policy for controlling discharges to storm sewers. Specifically, the by-law establishes what can and cannot be discharged into the storm system as follows:

> *A By-law to repeal and replace By-law No. 1962-70, being a by-law to prohibit, regulate and control discharges of any gaseous, liquid, or solid matter into land drainage works, private branch storm sewers and connections to any storm sewer, sewer system or*

storm sewer works for the carrying away of domestic or industrial wastes or both, whether connected to a treatment works or not into bodies of water within municipal boundaries or into the local storm sewers (2008).

Key Elements:

The By-Law regulates the discharge of pollutants to the municipal storm sewer system to:

- Protect the storm sewer collection system from undue deterioration, damage and obstruction;
- Protect the public, workers and properties from hazardous materials and dangerous conditions; and
- Protect the environment from deleterious contaminants.

Relevance:

A Storm Sewer Use By-law as noted above prohibits, regulates, and controls the discharge of unwanted substances into municipally-managed drainage systems. Such a by-law promotes and supports the ideals of a future Water Sustainability Plan in ensuring that waste discharges are properly treated in advance of discharge to the environment.

Stormwater Management Pond, Operations Maintenance Policy (MS-ENC-001)

Purpose:

The design, use and maintenance of Stormwater Management Ponds (SWMPs) within the Town of Oakville shall be in accordance with the Ministry of Environment Guidelines and shall conform to safety standards in the established procedure. SWMPs are designed to provide treatment and retention of runoff from rainfall and snowmelt and ultimately protect the health of streams, lakes and aquatic life by reducing the effects of human uses of water and urban development. Stormwater Management Ponds are not designed or intended for recreational use such as swimming, wading, skating, boating, fishing and fish stocking. Stormwater management facilities have been incorporated into parks and open space areas in accordance with the Ministry of Environment Guidelines and Best Management Practices. The design is intended to allow public accessibility to trails and park lands adjacent to and surrounding these facilities. The promotion of safe use of Stormwater Management Ponds is intended to protect workers and the public. The use of safety signage and perimeter fencing shall be carried out in accordance with the established procedure. Maintenance activities, including wildlife management shall be carried out in accordance with the established procedure. The purpose of this policy is to provide a framework for the safe use, safety standards, and wildlife habitat management practices for Stormwater Management Ponds.

Relevance:

Stormwater Management Facilities are important elements of the municipally-managed drainage infrastructure. As noted, stormwater management facilities control both the quantity and quality discharge into area receiving streams and Lake Ontario. The upkeep and management of these systems is vital, in order to ensure that they continue to meet their design

objectives. A future Water Sustainability Plan, as related to stormwater, will need to recognize the functional attributes of stormwater management facilities in protecting area water resources.

Integrated Risk Management Policy

Purpose:

The Integrated Risk Management (IRM) Policy and the related procedures were adopted by the Town's Council in early 2009. The Town is committed to embedding and integrating an explicit, proactive, sustainable and systematic approach to minimizing and managing risks that impact the Town's ability to achieve its objectives. This Policy applies to all Town employees, elected officials, and local boards as deemed appropriate. Risk management incorporates plans for Business Continuity Management, Insurance Risk Management, Emergency Management and other plans established to mitigate risk.

Relevance:

This policy sets direction for the consideration of risk elements in decision-making including for these related to stormwater management.

Performance Based Budgeting (PB2)

Purpose:

The Town has implemented the PB2 budgeting system which focuses on allocation of resources to programs based on desired outcomes and measurements of results against expected outcomes.

Relevance:

PB2 budgeting provides measurements program and project implementation and related budget/staff allocation including those related to stormwater management.

Urban Design Guidelines (UDG) for Livable Oakville (On-going)

Purpose:

Urban Design Guidelines are currently being developed by the Town and will be based on the approved Official Plan and Technical Policy paper whereby it is recognized that urban design can mitigate climate impacts through protecting and enhancing urban forests, encouraging reduced impermeable surfaces, among other concepts such as encouraging innovative stormwater management designs.

Key Elements:

Urban design encompasses planning, architecture, transportation engineering, environmental sustainability, landscape architecture, socio-economics, geography and numerous other areas of study. Urban design is about creating stimulating, thriving, vibrant spaces for people, building relationships between buildings and the public realm, between people and buildings, between

people and public space, and enhancing each of these. It is also about creating a civic domain that is functional, enjoyable, fluid, flexible and dynamic.

Relevance:

Urban Design Guidelines provide a unique form of land and property management with a view to green infrastructure (GI) and other green practices. Urban design guidelines can, through their implementation, lessen the impact and load on Municipal drainage systems and thereby contribute to a reduced ecological footprint. Recognition of Low Impact Development Best Management Practices is a fundamental component in developing contemporary Urban Design Guidelines, which can then dovetail with a future Water Sustainability Plan.

Development Charges By-law

Purpose:

On August 10, 2009 the Corporation of the Town of Oakville passed by-laws 2009-118 and 2009-119 (as amended by OMB order), under section 2(1) of the Development Charges Act, 1997. These By-laws establish development charges for the Corporation of the Town of Oakville.

The general purpose for which development charges are being imposed is to assist in providing infrastructure required by future development in the Town of Oakville by establishing a viable capital funding source to meet the Town's financial requirements.

Key Elements:

By-laws 2009-118 and 2009-119
The above By-laws impose development charges upon all lands within the boundaries of the Town of Oakville, payable upon issuance of the first building permit. This applies to all development but there are a number of exceptions including but are not limited to: non-residential farm buildings, areas of worship, public hospitals and day nurseries provided by the owner for the children of employees. The development charges By-law is being updated for completion by the end of 2012.

Relevance:

Assists the Town of Oakville in providing funding for infrastructure development and other upgrades in servicing across the Town.

Capital Asset Budget – Capital Levy for Infrastructure

Purpose:

The levy for infrastructure specifically allocates a percentage of the tax rate to infrastructure projects to ensure the Town has sufficient capital to support infrastructure projects.

Relevance:

This program helps the Town of Oakville ensure there is capital funding to support ongoing infrastructure projects which include stormwater projects.

2.1.5 Procedures/Programs

Site Plan and Subdivision Processes

Purpose:

The Town of Oakville Development and Planning Department advise the Planning and Development Council on planning, development and engineering matters related to the physical development of the Town in conjunction with associated economic social and environmental matters.

Key Elements:

Responsibilities include engineering issues related to:

i. Approval of Subdivision Engineering Designs (road/grading/storm);
ii. Subdivision and Condominium Agreement Preparation, Plan Registration and Assumption By-laws;
iii. Site Plan Review and Approval of engineering items;
iv. Approval of Stormwater Management Reports and Design;
v. Special Studies (Environmental Assessments);
vi. Approval of Grading and Drainage for all Building Permits;
vii. Comments for Land Severance and Committee of Adjustment;
viii. Comments for Draft Plan of Subdivision and/or Condominium;
ix. Comments for Part Lot Control Exemptions;
x. Comments for Zoning and/or Official Plan Amendments;
xi. Approval of Development Related Studies such as Noise, Geotechnical, Storm Water Management, Sub-watershed, Environmental Implementation/Impact, Environmental Audit, Functional Servicing, Traffic Impact;
xii. Approval of Site Alteration Permits and Pool Enclosure Permits;
xiii. Review and enforcement of Tree Protection; and
xiv. Inspection and monitoring of subdivision construction.

In the implementation of the process requirements set out above, stormwater management pond development also includes the need for monitoring for performance (quantity and quality) by developers post-pond construction until assumption with monitoring records provided to the Town at that time. Monitoring is required throughout the active construction period according to the Town's Development Engineering Manual which also specifies design requirements for stormwater management ponds.

Relevance:

There are numerous elements related to site planning and subdivision review, which involve Town staff, principally related to Policy Compliance, Grading, Stormwater Management, and other related discipline investigations. A key to a future Water Sustainability Plan (with the focus on stormwater) is the need for stormwater management planning and appropriate grading standards.

Asset Management Program

Purpose:

As part of the Town's commitment to be financially accountable to its residents the Town has implemented an Asset Management Program. An asset management plan is a strategic document that states how a group of assets is to be managed over a period of time. The plan describes the characteristics and condition of infrastructure assets, the levels of service expected from them, planned actions to ensure the assets are providing the expected level of service, and financing strategies to implement the planned actions. The Town of Oakville hasan asset inventory management database and it is being continuously improved. As an example in 2012, year storm sewer system characterization is underway. The Town has satisfied the provincial Public Sector Accounting Board (PSAB) requirements and is currently working with the province, Association of Municipalities of Ontario (AMO) and several other municipalities to explore financial strategies for managing capital infrastructure.

Relevance:

This program establishes asset baselines in detail to support improving efficiencies in management including those related to stormwater management. Oakville's financial and budgetary data is readily accessible for the public and this is a key element in asset management planning to ensure public accountability and awareness of the financial burden of sustainable infrastructure management. The Town has begun developing an asset management plan for the corporation and a component of this plan will address the initial requirements of the Water Opportunities Act.

Water Quality Monitoring Program - SWM Ponds, storm sewers, outfalls, creeks

Purpose:

The Town of Oakville's Engineering Department has initiated a stormwater monitoring program that includes both dry and wet weather sampling at various outfall and stormwater management pond locations. The monitoring program is designed to obtain background data for comparison and verification of established by-law limits. A report on the State of the Water Resources Program is provided to Council regularly.

Key Elements:

The Town currently manages 21 Stormwater Management Ponds including 7 dry and 14 wet ponds. There are approximately 26 additional ponds in developing areas that eventually will be added to the Town's complement. The Town has an annual program to sample a subset of the

assumed ponds during rainfall events to confirm if the pond is functioning as intended, as well as, gather data on water quality entering its ponds and stream systems.

The Town of Oakville also manages over 350 storm sewer outfalls and conducts the water quality monitoring on selected outlets to obtain background data on effluent discharges from a subset of small, medium and large industrial/commercial/institutional properties. The Town also gathers data on illicit discharges by conducting dry weather sampling on several storm sewer outfalls.

This initiative requires that the necessary stormwater controls be applied to address both the quantity and quality of the water being conveyed to the storm sewer system. The Town has a comprehensive inventory and database of both Town managed and unassumed stormwater management ponds. The Town recently compiled an inventory of Town owned oil/grit separator (OGS) units. All of these engineered controls are set in place to manage the risk of flooding and pollution that is discharged to the stormwater system. This information along with existing storm sewer infrastructure information has been compiled in a comprehensive layer in GIS.

Relevance:

A long term monitoring program for stormwater infrastructure will ensure that the stormwater system operates as designed. On-going monitoring of this type will be important to maintain over the long term to ensure that any policies or initiatives implemented under a Water Sustainability Plan are realized and that adaption principles can be used to enhance the overall performance of stormwater infrastructure.

Stormwater Outreach and Education Programs

Purpose:

An ongoing campaign raises awareness of the impact of personal actions on stormwater (Yellow Fish Road, Halton Children's Water Festival, West Nile Virus (WNV) program).

Key Elements:

These programs involve the Region, the Town and Conservation Halton. For the WNV program the Town provides response/support to enforce Town property standards and drain ponding water on Town lands.

Relevance:

On-going public outreach and education will be an important element of a Water Sustainability Plan. The Town, Region and the Conservation Authority have already developed various programs that may be used or contribute to the communication of the principles and objectives in a Water Sustainability Plan. The role of the Public in complementary municipal and stakeholder actions is vital, particularly as related to private property practices.

Climate Monitoring

Purpose:

The Town of Oakville has established its own weather network by installing six (6) Town-owned and operated stations.

Key Elements:

Data has been collected since 2009 and analysis includes the calculation of storm volumes, duration and intensities. The program was initiated in response to a growing gap in climate/weather monitoring at the federal level and the need for more local/regional understanding of climate to better plan, design and build infrastructure to local/regional data in the long-term.

Relevance:

Climate monitoring and specifically local information will become increasingly more important as system designs need to have more and more built in resiliency. This information will be used to assist the Town in determining the functionality/performance of its drainage network and if the policies or initiatives implemented under a future Water Sustainability Plan are deemed to be ultimately effective.

Bi-annual Creek Erosion Assessment and focused Stream Restoration EA and Construction Projects (Feb 2010)

Purpose:

The Town of Oakville conducts Bi-annual Creek Erosion Inspection and Assessment study to develop, evaluate and recommend preferred alternatives for the stabilization and rehabilitation of the creeks and banks and possible flood/flow control improvements along the different watercourses in the Town.

Key Elements:

The Erosion Assessment is based on a survey of field conditions – identifying the most sensitive geomorphic areas and erosion sites – as well as a broad-scale analysis of the field data to evaluate erosion risk to adjacent property and infrastructure. The objectives of this study have been to:

- Carry out an evaluation of the geomorphic and erosion conditions of each creek identified in the study.
- Identify and prioritize locations where rehabilitation is required.
- Prepare cost estimates and implementation recommendations for rehabilitation.
- Update the creek erosion database with the results of the assessment, including photographs and field data to provide a reference base for future assessments.

The processes contributing to issues within the study area first are assessed by analyzing hydrology, hydraulics, tractive forces and stream processes. These inspections were carried

out by walking the creek systems and included photographic inventories of erosion sites. Prioritized lists of sites requiring rehabilitation were identified. These lists were used to forecast capital budget needs for erosion control projects

Relevance:

Natural open waterways within the Town of Oakville serve as important conveyors of stormwater, treated and received from local urban development. The health and stability of these waterways is an important consideration in the Town's effective stormwater system, and as such feedback from this program and related restoration and construction projects is critical to maintain a safe and functioning eco-system. This action aligns well with Water Sustainability Planning and needs to be considered in an overall stormwater-based structure.

Bi-annual Shoreline Assessment, focused EAs and Construction Projects (coordination with Parks)

Purpose:

Town of Oakville conducts Bi-annual Shoreline Inspection and Assessment study to identify the sections of shoreline that require rehabilitation, maintenance and monitoring in order to mitigate any current or future detrimental effects to the lands adjacent to Lake Ontario and mitigate any safety risks along the shoreline.

Key Elements:

The shoreline assessment includes the update of a comprehensive digital Microsoft Access database that documents the condition of existing shoreline protection measures and the need for construction and/or rehabilitation, as well as an update of the current prioritized list of sensitive sites requiring construction and/or rehabilitation.

Relevance:

As per the Bi-annual Erosion Assessment in creeks, the shoreline investigation ensures that land-based uses adjacent to the Lake Ontario shoreline are adequately protected and preserved from the erosive forces in Lake Ontario. While not as critical to the stormwater system as a whole, there is some integration along the shoreline at creek outlets and locations of stormwater outfalls.

2.1.6 Practices/Guidelines/Studies

Storm Sewer Master Plan – Phase 1

Purpose:

The Town of Oakville has started the first phase of a Town-wide comprehensive Storm Sewer Master Plan. This study will collect information on existing infrastructure, 1983 and older, south of the QEW as well as College Park and Falgarwood Drive. It will identify deficiencies to the sewers within that area and develop an implementation plan for the management of stormwater in the built up portions of the town. In this phase, the study will prioritize flood risk issues throughout the town at high-level, identifying preliminary priorities. Subsequent phases

(Phase 2) will outline alternative solutions and include public presentations based on detailed modeling and analysis.

Relevance:

This first phase plan will gather data on both the configuration and condition of the Town's sewer system and outfalls. The next phase will develop a long-term program of capital upgrades to the major (overland flow routes) and minor (storm sewer) system. The capital program can then be prioritized and harmonized with other capital upgrades including roadway, water and wastewater master plans, as well as future development plans.

Town-Wide Flood Study (April 2008)

Purpose:

The main purpose of this study was to objectively identify, on a technical basis, locations along open waterways which require flood mitigation in order to mitigate the current or future risks to public/private lands adjacent to Town managed creeks, and thereby minimize risks to property and public safety along the creek channels.

The primary purpose of the study was to develop and refine a strategic approach to achieve the following objectives:

i. Protection of the environment, as defined in the Environmental Assessment Act, through the wise management of resources. This goal will be met through study, extensive consultation with the general and affected public, monitoring and mitigation.
ii. Minimal disruption to the existing residents abutting these reaches during construction.
iii. Participation of stakeholders and regulating authorities in the study process to allow for sharing of ideas, education, testing of creative solutions and developing alternatives.
iv. Documentation of the study process in compliance with all phases of the Municipal Class Environmental Assessment process.

Key Elements:

The study provided a comprehensive list of 40 flood-prone sites within in the Town of Oakville as well as a set of recommendations to reduce flood conditions at the flood-prone sites. Structural/Capital options include:

i. Culvert/Bridge Upgrade or Replace/Supplement
ii. Flood plain/Channel Improvements
iii. Roadway Profile Modifications
iv. Flood Proofing Buildings
v. Flood Control via stormwater quantity control.

Non-Structural options include:

i. Regulation
ii. Flood forecasting and warning

iii. Emergency preparedness

iv. Acquisition

Relevance:

Similar to the erosion-based initiatives, the Town has a responsibility to ensure that its area residents and businesses are safe from flood impacts from major storms. A future Water Sustainability Plan needs to consider this mandate of a stormwater service provider as an important functional component.

Stormwater Pond Sedimentation Study

Purpose:

This study was conducted to assess stormwater management pond sediment for toxins. In addition, periodic sedimentation studies carry out assessments to compare design to as-built conditions and to help to prioritize sediment cleanout activities. The Town has conducted the study to develop, evaluate and recommend preferred alternatives for stormwater management pond (SWMP) monitoring including sediment depth surveys, water quality sampling, confirmation of hydraulic functioning (water level loggers), and the implementation of a meteorological monitoring network.

Relevance:

Sediment within stormwater management facilities can, based upon the contributing drainage areas, have various levels of contamination. The proper management of these sediments by way of cleanout of facilities needs to be a focussed component of the Town's overall operations and maintenance of stormwater management facilities. The foregoing would then contribute to a future Water Sustainability Plan in ensuring the protection of area resources.

Stormwater Management Pond, Operations Maintenance Procedure (MS-ENC-001-001) and Manual

Purpose:

The purpose of this procedure is to outline steps to be taken to support the stormwater management pond (SWMP) policy.

Key Elements:

Scope: This procedure applies to all Town-managed SWMPs, as well as unassumed SWMPs intended for assumption by the Town of Oakville.

Procedure:

i. Standard warning signs shall be installed at all SWMPs. The purpose of the safety sign is to inform the public of safe practices within the SWMP area and the potential for water level fluctuations during certain events. The warning signs shall include a list of activities that are prohibited within the SWMP areas. These activities include swimming, wading, skating, boating, fishing and fish stocking.

ii. The Town-approved sign shall be installed near all pedestrian traffic routes or pathways leading to or adjacent to the SWMP. The Town-approved sign for SWMPs in developing subdivisions will be supplied and installed by the developer. Signs may be ordered and purchased from the Roads and Works Department.

iii. In general, SWMPs have been designed in accordance with Ministry of Environment Guidelines and incorporated into Parks and Open Space areas and as such the installation of perimeter fencing is not necessary in most cases. Perimeter fencing will be considered for installation in situations that do not meet the above conditions.

iv. On-going maintenance of Town-owned SWMPs will be carried out by Town staff or contractors to ensure these facilities continue to function as intended. Maintenance activities, which include debris removal, repairs and maintenance of vegetation and structures, shall be carried out in accordance with the Town's "Stormwater Management Pond Monitoring, Operation and Maintenance Manual".

v. Maintenance activities shall also include wildlife habitat management. Such activities include the removal of animals, such as beavers and muskrats that are found to be creating habitat that is disruptive to the function of the pond or that is a potential threat to the adjacent or upstream lands. Such activities will be conducted in an economical, humane and effective manner. Any such activities shall be carried out in accordance with following protocols: the Department of Fisheries and Oceans (DFO) "Ontario Operational Statement for Habitat Management Program" (DFO, 2007); the Ontario Fish and Wildlife Conservation Act; and the Ministry of Natural Resources "The Beaver Handbook" (MNR, 1995). Permits or approvals, if applicable, will be obtained prior to any removal activities.

Responsibilities:

i. It is the responsibility of the Development Services Department to ensure that developers are in compliance with the SWMP Policy & Procedure in relation to unassumed ponds.

ii. It is the responsibility of the Departments of Engineering & Construction and Roads & Works Operation to ensure that the Town is in compliance with the SWMP Policy & Procedure in relation to Town-managed ponds.

Relevance:

This procedure helps to ensure that the Stormwater management ponds are working according to each pond's specifications. Stormwater management ponds play a key role in managing the quality and quantity control of stormwater water; ensuring their proper and safe upkeep is paramount in continuing to address the objective functions of the Stormwater management facility.

Outfalls/Creeks/Shoreline Assessment

Purpose:

The Town of Oakville owns, or has interest in, approximately 8.8 kilometres of this shoreline property, of which approximately seven kilometers is protected by some form of constructed

shoreline protection. The Oakville shoreline is predominantly altered, but in stable condition. The Town of Oakville is currently updating the 2008 Shoreline Inventory and Assessment Study Report. The Town has also completed an update to the Creek Erosion Inventory & Assessment Study (2010) The purpose of the study is to conduct an erosion inventory and assessment of the creeks throughout the Town of Oakville in order to develop a rehabilitation priority list for budget forecast purposes. The assessment is based on a survey of field conditions, identifying the most sensitive geomorphic areas and erosion sites, as well as a broad-scale analysis of the field data to produce an evaluation of the erosion risk to adjacent property and infrastructure.

Relevance:

The assessment information enables the Town to develop an appropriate financial management plan to protect, preserve and enhance its investment in shoreline lands and creek systems. The reports will also provide guidance to planning and development functions in reviewing proposals on adjacent lands. The inventory of collected data will provide a baseline of shoreline and creek systems condition that will be referenced during future inspections. This information will assist in the development and future implementation of a Water Sustainability Plan.

Sustainable Building Design

Purpose:

The purpose of this procedure is to guide sustainable construction for Town of Oakville new buildings as well as maintenance and repair of town-owned facilities and to assist with the town's greenhouse gas (GHG) emission reduction goals, reduce the use of non-renewable resources, improve energy efficiency and implement a life-cycle costing process.

Key Elements:

This procedure applies to the construction of new Town of Oakville buildings and maintenance and repair of all town owned facilities. All town departments and staff shall follow the Sustainable Design Guidelines (SDG) in order to ensure consistency, compliance, where applicable, and to assist in attaining the Town's goals. Where not covered in the SDG all building design decisions shall consider:

- Ventilation systems designed for efficient heating and cooling
- Energy efficient lighting and appliances
- Reduction of greenhouse gas emissions and reduced water use
- Reduction of heat island reflection effect
- Water saving plumbing fixtures
- Building orientation and landscaping planned to maximize passive solar energy
- Minimal harm to the natural habitat
- Use of alternate and renewable power sources
- Use of non-synthetic and non-toxic materials
- Use of locally obtained woods and stone
- Use of responsibly-harvested and certified woods

- Use of recycled content materials
- Adaptive reuse of older buildings and materials
- Use of local recycled architectural salvage
- Efficient use of space
- Safe and comfortable indoor environment

Specifically related to stormwater - Section 2.0 to 5.0 provides performance specifications and metrics to be achieved by al buildings – new and existing – including:

- Site design with consideration to landscaping, stormwater management and exterior lighting.

Section 2.4 Stormwater Management – intention of on-site stormwater management is to minimize the amount of stormwater that leaves the site as an "end of pipe" solution through rainwater harvesting, quantity and quality controls and erosion and sediment control measures.

Relevance:

It is becoming increasingly more important for Municipalities to develop and implement stormwater management controls that are on-site as opposed to "end of pipe" solutions. These new initiatives such Low Impact Development (LID) and neighbourhood controls will become increasingly important. These initiatives will be key to the development of a future Water Sustainability Plan.

Municipal Performance Measurement Program

Purpose:

The Town is continually monitoring the quality and performance of the services it provides through various means, one of which is the Ontario Municipal Performance Measurement Program (MPMP). This is one way the Town is demonstrating accountability to its taxpayers.

Key Elements:

The Ministry of Municipal Affairs and Housing requires the Town to provide its MPMP data annually for seven core municipal service areas, specifically:

i. Transit Services
ii. Transportation Services (Roads , Bridges & Culverts, Winter Control)
iii. Storm Water Management
iv. Fire Services
v. Parks and Recreation
vi. Oakville Public Library
vii. Local Government Administration

The Town of Oakville reports on transportation (transit services, road maintenance, bridge and culverts, road adequacy, and winter control), urban storm water management, fire services,

parks, recreation services, library services and general government. In total, the seven core services translate into twenty-six performance measures.

Relevance:

The use of the Ministry of Municipal Affairs Municipal Performance Measurement Programs helps to ensure the Town of Oakville is meeting its objectives and ensuring it's accountable to the taxpayers in the Town.

2.1.7 Integration with Water Sustainability Planning

The following table summarizes some of the required elements of a Water Sustainability Plan that have been cited in the Water Opportunities Act (2010) noting some of those that the Town of Oakville currently has in place or are underway. It is important to recognize that the Town is currently undertaking several aspects of Water Sustainability Planning as part of its inherent Corporate mandate and hence the following list is not considered exhaustive, only representative.

Table 2.1: Summary of Town of Oakville's Relevant Supporting Elements for a Water Sustainability Plan

	Applicable Document	Asset Management Plan	Financial Plan	Water Efficiency / Conservation Plan	Assessment of Risks	Strategies for Maintaining and Improving	Other Aspects related to water
1	Official Plan					☑	☑
2	Council's Strategic Plan		☑		☑	☑	☑
3	Vision 2057 Sustainability Framework	☑	☑		☑	☑	☑
4	Operational Work Plan	☑	☑	☑	☑	☑	☑
5	Environmental Strategic Plan, Urban Forest Strategic Management Plans	☑ Urban Forest		☑ Corporate	☑ Urban Forest	☑	☑
6	Climate Change Strategy	☑	☑		☑	☑	☑
7	Development – Site Alteration By-law, North Oakville Secondary Plan (Subwatershed Plans); Sediment and Erosion Control; Urban Design Guidelines; Sustainability Checklists; Corporate Sustainable Design Guidelines			☑	☑	☑	☑
8	Development Charges By-law	☑	☑			☑	

☑ - Completed, being implemented and scheduled for updating on 5 year cycle
☑ - Underway, in development
☑ - Planned, scheduled for near future (1-2 years)

Table 2.1: Summary of Town of Oakville's Relevant Supporting Elements for a Water Sustainability Plan							
	Applicable Document	**Asset Management Plan**	**Financial Plan**	**Water Efficiency / Conservation Plan**	**Assessment of Risks**	**Strategies for Maintaining and Improving**	**Other Aspects related to water**
9	Asset Management Program, PSAB, Capital Asset Budget, Municipal Performance Measures	☑	☑		☑	☑	
10	Water Quality Monitoring Program – SWM Ponds: Monitoring, Operation and Maintenance; Storm Sewer By-law; Monitoring of outfalls, creeks, storm sewers; Parks and Open Space By-law; Litter By-law	☑	☑		☑	☑	☑
11	Stormwater Outreach and Education programs			☑			☑
12	Climate Monitoring (Precipitation Stations)				☑		☑
13	Storm Sewer Master Plan –Phase 1	☑	☑		☑	☑	☑

☑ - Completed, being implemented and scheduled for updating on 5 year cycle
☑ - Underway, in development
☑ - Planned, scheduled for near future (1-2 years)

2.2 Region of Halton Water Framework

2.2.1 Introduction

Halton Region covers over 232,000 acres of land including a 25 km frontage onto Lake Ontario (ref. Figure 2.3). Halton Region is responsible for numerous services ranging from business development to emergency medical services to water, wastewater and sewage servicing.

2.2.2 Mandate

The Region of Halton and its four (4) local Municipalities (Town of Halton Hills, Town of Milton, City of Burlington, and the Town of Oakville) work together to respond to the needs of the community to make complete sustainable and healthy communities.

The Region of Halton's mandate with respect to the provision of water and wastewater services has been paraphrased as:

> *The Region of Halton is the provider of water and wastewater services to its four (4) local municipalities including the Town of Oakville. It is responsible for determining both water and wastewater servicing requirements for future development and develop and implement a Capital Works Program for water and wastewater servicing.*

Figure 2.4 outlines the Water Framework related to the various Strategies, Policies/Plans, Procedures/Programs and Practices/Guidelines/Studies.

2.2.3 Strategies

Halton Region Official Plan (2006)

Purpose:

The Halton Region Official Plan (2006) guides land use planning in Halton while balancing community needs, economic prosperity and environmental protection for the present and the future. It outlines the Region's approved policy for development and growth. It identifies specific goals and objectives that Regional Council and Halton's citizens believe to be important. It provides policies related to a wide range of topics including, but not limited to:

- The setting of urban area boundaries to accommodate growth and to protect farmland;
- The protection of environmentally-sensitive areas and promotion of land stewardship;
- The promotion of economic development;
- The delivery of urban services such as water supply and wastewater treatment, transportation, energy and utilities; and
- The building of healthy, complete and sustainable communities.

The Regional Official Plan provides a strategy for implementing and achieving these goals and objectives, including on-going monitoring of the effectiveness of plan policies.

Key Elements:

The Sections pertaining to water and wastewater are:

- Urban (Water Supply and Wastewater Treatment) Services – Section 87-89 (1 to 23)
- Water – Section 144 – 145 (1 to 23)

Regional Official Plan Amendment (ROPA 37)

Purpose:

ROPA 37 is the first of two stage process to bring the Regional Official Plan into conformity with the Provincial Growth Plans and other Provincial plans and policies.

Key Elements:

Among the policies incorporated into ROPA 37 based on the Growth Plan are:

- The density and intensification targets by Local Municipality to the year 2031 (with the exception of the Towns of Milton and Halton Hills, which will be introduced by a subsequent amendment);
- The appropriate locations for future growth including urban growth centres; intensification corridors, designated greenfields, built-up areas and major transit station areas and corresponding policies to guide this growth;

- The protection of employment lands by providing more stringent criteria for the conversion of employment lands to non-employment uses;
- The requirement that the Local Municipalities develop and implement strategies to phase in and achieve the intensification targets identified in the Growth Plan; and
- Growth Plan definitions.

Regional Official Plan Amendments (ROPA 38) (December 2009)

Purpose:

ROPA 38 is the second stage of the conformity exercise with the Provincial Growth Plan. It incorporated the result of the statutory five-year review of the Regional Official Plan under the Planning Act, as well as bringing the Plan into conformity with other Provincial plans and policies. ROPA 38 incorporates the results of the Sustainable Halton process and a comprehensive review of the Regional Official Plan [2006]. Regional Council unanimously adopted ROPA 38 on December 16, 2009. ROPA 38 is currently under appeal.

Purpose of this Amendment is threefold:

- To incorporate the results of the Sustainable Halton Process, which is a comprehensive review the Regional Plan (2006) under the Provincial Policy Statement (2005);
- To incorporate the results of a statutory five-year review of the Regional Plan (2006) under Section 26 of the Planning Act, including bringing the Regional Plan into conformity with the Provincial Policy Statement (2005) the Greenbelt Plan (2005) and the Growth Plan for the Greater Golden Horseshoe (2006) and other pertinent Provincial plans and polices; and
- To address other housekeeping matters related to the Regional Plan (2006).

Regional Official Plan Amendment (ROPA 39)

Purpose:

The purpose of ROPA 39 is to amend the Halton Region Official Plan (2009) to update the Regional development phasing to 2031.

Regional Official Plan Amendment (ROPA 40)

Purpose:

The purpose of ROPA 40 is to designate four areas outside of the Urban Area as eligible for water and wastewater services.

Relevance:

The Region's Official Plan and subsequent Amendments outline the goals and direction for the Region. The Region is solely responsible for the provision of water and wastewater services to the Town of Oakville. A future Water Sustainability Plan would have to be aligned and be consistent with the Region's Official Plan and subsequent amendments.

Sustainable Halton

Purpose:

Sustainable Halton is Halton Region's growth management and land use response to the province's Places to Grow Plan, the Provincial Policy Statement and the Greenbelt Plan. It involved research, public consultation, staff recommendations and Council approval of policy changes to the Halton's Official Plan. Places to Grow Plan, the provincial growth plan, sets population and employment targets that Halton Region must plan for. This requirement means the Region need to plan for an additional 134,000 people and 54,000 jobs in the years 2021-2031.

Key Elements:

The document identifies Halton's urban growth area to 2031 and what land will be preserved for wildlife, green space and farmland. It clarified what land will be reserved for business and residential use. As well, the report includes the planning for major roads, transit corridors, utilities and other regional infrastructure, including water and wastewater. The Sustainable Halton project lead to the development of ROPA 37 and 38.

Relevance:

The Sustainable Halton Project was the precursor to the Official Plan cited earlier. As Sustainable Halton is implemented, it will define a strategy and approach to manage urban sprawl optimizing the use of existing and proposed water and wastewater infrastructure, with a view to protecting natural resources and preserving natural spaces and farmland.

Citizens' Priorities – Halton Region's 2011 to 2014 Action Plan (June 2011)

Purpose:

On June 22, 2011 Regional Council approved The Citizens' Priorities - Halton Region's 2011-2014 Action Plan. Each new term, Halton Regional Council develops a plan to reflect Council's priorities and focus on what services are important to Halton residents. It is the work plan that will set out Regional Council's agenda for the next four years.

Key Elements:

Key Initiatives and Key Actions include:

- Fiscal Responsibility
- Attracting and Retaining Jobs
- Promoting Tourism
- Emergency Preparedness
- Customer Service
- Public Engagement

- Partnership – Demonstrate transparency and accountability by strengthening collaborative relationships between and among Halton Region, other government levels and government organizations, community agencies and Halton citizens.
- Be an Employee of Choice
- Safe Communities
- Advocacy
- Transportation
- Infrastructure – plan, construct and maintain a complex and integrated system of physical structures to deliver drinking water Halton residents and disposal of wastewater in an efficient and sustainable manner
    - Plan and implement a water and wastewater strategy to meet the needs of the community and growth demands.
    - Manage existing system to ensure water and wastewater infrastructure is in a state of good repair.
    - Construct key infrastructure to meet existing and future growth demands, security of supply and operations flexibility.
- Environmental Protection and Conservation of Water – protect water quality and the natural environmental through effective treatment, source protection, conservation and adherence to regulations.
    - Enhance, protect and maintain quality, quantity and safety of groundwater and surface water.
    - Promote water efficiency and conservation.
- Waste Management
- Planning Sustainable Communities – implement the Halton Regional Official Plan: a series of goals, objectives and policies to manage change and the effects of growth on the social, economic and natural environment of Halton.
    - Implement and monitor the Region's water and wastewater allocation policy and program.
- Defining and Preserving Natural Heritage
- Agriculture
- Corporate Sustainability
- Assisting Halton's Low income Residents
- Affordable and Assisted Housing
- Children and Youth Development
- Seniors
- Protecting Public Health
- Promoting Health Living
- Air Quality

Relevance:

The Citizen's Priorities sets out Council's commitment for the next four years. There is a focus on the protection of the natural environment as well as the principle of sustainable development. This is consistent with the direction taken by the Town of Oakville and would be consistent with the objectives/goals of a Water Sustainability Plan.

Corporate Sustainability and Assessment Action Plan

Purpose:

The Corporate Sustainability and Assessment Action Plan provides an assessment of the Region of Halton current practices against several sustainability criteria. The assessment will be used as the foundation for developing a Corporate Sustainability Action Plan which will establish specific sustainability goals for the Region.

The purpose of the Regions Corporate Sustainability Assessment is to consider their current performance as it relates to sustainable initiatives. A key consideration of this assessment is to determine how the Region is integrating sustainability into all their decision-making and operations.

Key Elements:

In order to determine where the Region was now, they developed five assessment criteria that were used to ask critical questions about how the Region was currently operating. The Region reviewed a long list of initiatives and used these criteria to highlight success, identify gaps and consider options for future directions.

The assessment was based on the following criteria:

i. The Region will evaluate the degree to which corporate operations address sustainability.
ii. The Region will consider how their current programs support Halton Region's goal of being an early adopter of sustainability practices within the community.
iii. The Region will look for integration through partnerships between our departments and with stakeholders.
iv. Sustainability is a shared responsibility – the Region will look for initiatives that are implemented by Regional employees working together in a collaborative fashion.
v. The Region will ensure that our operations meet the same requirements that Halton Region has set for residents and businesses within their community.

The Region has grouped their major areas of operations into five theme areas:

i. Corporate Facilities and Land Management
ii. Corporate Energy Management
iii. Transportation and Fleet Management
iv. Green Procurement
v. Waste Management and Water

For each of these theme areas the Region has established a baseline of current activity and have noted their achievements. We have also identified options for moving forward and have described future directions for each theme area.

As the Region moves forward they will be identifying actions and setting targets that they will use to monitor progress towards sustainability. The Region intends to also address development of a performance measurement framework

Relevance:

The Corporate Sustainability and Assessment Action Plan will be used to guide decisions through the integration of the services identified and sustainability. Water is included as one of the services to be assessed.

2.2.4 Policies/Plans

Water Conservation and Efficiency Strategy (on-going)

Purpose:

Halton Region is developing a Water Conservation and Efficiency Strategy in order to provide guidance and direction for program planning and implementation over the next decade. The objective is to develop a long-term Strategy that identifies, evaluates and recommends the most appropriate water efficiency measures currently available, based on the following criteria:

- Technical feasibility;
- Social acceptance;
- Ability to reduce demand, and
- Cost effectiveness.

Key Elements:

The Water Conservation and Efficiency Strategy is in its initial stages and has developed a short list of proposed initiative for consideration in Halton's approach to water conservation and efficiency over the next decade. They have been grouped into three potential scenarios, on a scale of increasing financial investment.

Scenario A: Existing Programs and Planned Enhancements

- Ongoing existing initiatives, plus:
- Enhanced leak detection (targeting non-billed water)
- Irrigation optimization (targeting summer peak demand)

Scenario B: Expanded Education, Marketing and Outreach

- Scenario "A" plus:
- In-School Education Program
- Enhanced Marketing and Outreach
- New and Enhanced Partnerships

Scenario C: Additional Rebate Programs

- Scenario "B" plus:
- Financial Rebate/Retrofit Incentives

A long term plan has not been approved. However, the following initiatives are already in place:

- Residential Toilet Rebate Program
- Annual Rain Barrel Truckload Sale
- Annual Halton Children's Water Festival
- Distribution System Leak Detection
- Outreach at several annual community events

Relevance:

The aim of the Halton Region Water Conservation and Efficiency Strategy is to set out a long-term strategy to help the Region maximize efficient use of municipal water supply in a realistic and fiscally responsible manner. Components of the strategy may be included within a future Water Sustainability Plan.

Water and Wastewater Master Plan (October 2011)

Purpose:

A region-wide review, evaluation, and development of water and wastewater servicing strategies for all urban service areas. The Master Plan builds on the previous work undertaken as part of the South Halton Master Plans and Updates, related studies in the North Halton systems and the Wastewater Pumping Station Capital Needs Assessment and Master Plan Study for Oakville and Burlington.

Key Elements:

Includes the identification of Regional Infrastructure needs including 12 Schedule A projects, 222 Schedule A+ projects 30 Schedule B projects, and 11 Schedule C projects, in accordance with the Municipal Class Environmental Assessment Process.

Relevance:

The Water and Wastewater Master Plan directs Regional initiatives related to the upgrade or replacement of water and wastewater infrastructure. A Water Sustainability Plan initiative would need to ensure that the improvements/upgrades to the water/wastewater system are consistent with the sustainability principles in the Water Sustainability Plan.

Halton Aquifer Management Plan

Purpose:

The Aquifer Management Plan was developed by the Region of Halton to better protect and manage groundwater in the Region.

Key Elements:

The Aquifer Management Plan includes the following priorities:

- Wellhead protection strategies.
- Determination of ground water reserves.
- Watershed protection initiatives.
- Identification and evaluation of Halton's groundwater-sensitive settlement areas.
- Urban and rural surface and ground water awareness and education.
- Identification of sensitive recharge areas.
- Ongoing monitoring of water levels, surface flows and water quality; and spill contingency planning.

Relevance:

Groundwater resources play a key component of the water based services provided by the Region. A better understanding of groundwater through the Aquifer Management Plan will assist the Region in the preservation of these resources.

Halton Forest Management Plan

Purpose:

Halton Region owns 665 hectares (1,645 acres) of forests in 14 separate tracts, including *wooded areas, wetlands and meadows. Nine of the forest tracts are located in Environmentally* Sensitive Areas (ESAs) with unique ecosystems. Six of the tracts are in the Niagara Escarpment area, which is designated a World Biosphere Reserve by UNESCO. Halton's Regional Forests provide rich and varied habitats for wildlife and are home to number of rare species. This 20-year Forest Management Plan reflects the Region's commitment to the sustainable stewardship of its forests.

Key Elements:

The Region of Halton's Forest Management Plan sets out four management goals, (i) Natural Heritage, (ii) Recreation, (iii) Education and Research, and (iv) Administration, that forms the basis for objectives and recommended actions for integrated forest management of the Halton Regional Forest. This has been accomplished through a proposed system of management areas. The forest management plan recognizes four classes of management area for the Halton Regional Forest - Restricted, Passive, Modified, and Access - based on natural heritage features and sensitivities of those attributes and functions to human use and management activities. Permitted uses and the level of silvicultural management in a particular stand will depend on the management area designation for that stand. Where silvicultural management is proposed, the silvicultural systems involved are designed to emulate natural disturbances.

A 5-year Operating Plan accompanies the forest management plan. The operating plan provides details of several management activities proposed for 2005-2009. Some of the priority management activities proposed for the 2005-2009 operating period are:

i. Strengthen the administration of the Halton Regional Forest by (i) assigning an appropriate Regional position with the responsibility for the administration and management of the forest, (ii) hiring (or retaining under contract) a registered professional forester to oversee the silvicultural management of the forest, and (iii) allocate sufficient operating and capital funds to ensure successful implementation of the management plan.

ii. Continue to engage forest users and the public during the implementation of the management plan through (i) a Regional Forest Advisory Committee, (ii) consultations on the location and appropriate uses of recreational trails and, (iii) encouraging forest users to peer manage their activities.

iii. Implement a system of management areas to conserve and protect the unique natural heritage of the Regional Forest while providing opportunities for recreation, research, and education.

iv. Implement sustainable silvicultural management to enhance biodiversity, promote natural regeneration, and improve forest health. The potential to generate revenues from the sale of timber products while implementing silvicultural management is recognized. However, revenue generation should not be an objective for forest management; rather it is an outcome from sustainable forestry practices. Halton residents wish to see revenues from the sale of forest products "re-invested' in the management of the forest.

A 10-year capital plan is also included with this forest management plan. The capital plan identifies various priority infrastructure and other capital requirements that are recommended during the 2005-2014 period.

Relevance:

Vegetation improves the management of water through the reduction of runoff. Forest Management is a key element of managing the runoff by increasing water uptake by vegetation.

Regional Forest Use By-Law By-Law No. 31-10

Purpose:

Regional Forest Use By-Law - By-Law No. 31-10 sets out what is permitted and not permitted within the Regions managed forests.

Key Elements:

The Regional Forest Use By-Law permits such activities as hiking, snowshoeing, activities related to nature appreciation including bird watching, photography, and other similar activities, and geocashing. Some activities that are not permitted include camping, the operation of all motorized vehicles, and all paintball and other related activities.

Relevance:

Vegetation improves the management of water through the reduction of runoff. Forest Management is a key element of managing the runoff by increasing water uptake by vegetation.

Sixteen Mile Creek Watershed Plan

Purpose:

The Sixteen Mile Creek Watershed Plan provides the environmental framework, in terms of constraints, opportunities, policies and targets/objectives to facilitate the pending land use planning studies supporting growth within the Region.

Relevance:

The Sixteen Mile Creek Watershed Study was initiated as part of the Halton Urban Structure Plan planning initiative. It provided (and still provides) high-level guidance related to policies to manage future development impacts and protect water-based feature and function.

Waterworks By-Law

Purpose:

During the hot summer months, water consumption can increase by as much as 50%. Despite the increase in demand for water, there are limits to both the amount of potable water any given treatment plant can produce and the amount of water the Region is permitted to take from any given water source (i.e. Permit to Take Water). The Region may enforce outdoor water use restrictions to ensure there is enough water for emergency and essential services, such as firefighting and system maintenance. The Water Use By-law permits enforcement through set fines or the issuance of summons by Municipal By-law enforcement officers.

Key Elements:

The Outdoor Water Use Program monitors:

- The Region's drinking water systems. Specifically, the amount of water being produced and delivered from the Water Purification Plants.
- Source water levels.
- Risk factors that strain our supply of potable water (i.e. weather patterns).

When key indicators show that the water system is stressed the Region will issue a change in restriction level. Depending on the current restriction level in effect, residents may be asked to reduce or stop outdoor water activities, until water levels are rebound to acceptable levels.

Relevance:

Most Ontario municipalities have an outdoor water use program to restrict the potable water demand. These activities are generally related to summer use.

Sewer Use By-Law (2-03)

Purpose:

The Sewer Use By-Law regulated the discharge of wastewater to the wastewater collection system. The By-Law enables the Region to restrict the discharge of materials detrimental to the wastewater treatment process, collection system and the natural environment.

Relevance:

The discharge of prohibited substances would have an impact on the Halton wastewater facilities and the natural environment, which includes receiving waters. Through these controls, the Region minimizes the risk of contamination.

Sewage System By-Law 184-95

Purpose:

Halton Region is permitted under the Municipal Act to regulate connection to Regional Sewer Systems. The By-Law is in place to ensure a process is available to the public for use of Regional sewers.

Key Elements:

The By-Law:

- Regulates the connection to Regional sewers.
- Specifies how connections are to be made.
- Indentifies the responsibility of the Region and adjacent land owners.
- Regulates connection for commercial, industrial and institutional users.
- Specifies payment requirements for connection to Regional sewers.

Relevance:

This By-Law enables the Region to manage and restrict inflows into the sewage collection system. The By-law is required to ensure water and wastewater entering the system do not have an adverse effect on treatment facilities and the environment.

Emergency Response By-Law

Purpose:

The *Emergency Management and Civil Protection Act (EMCPA)* requires municipalities, provincial ministries, and designated agencies, boards, commissions, and other branches of government to develop and implement emergency management programs consisting of emergency plans, training, exercises, public education, and any other elements prescribed by Regulation.

Key Elements:

The *Halton Community Emergency Response Plan* (HCERP) has been prepared in order to provide key officials, agencies, and departments within the Regional Municipality of Halton with an overview of their collective and individual responsibilities during a potential, imminent, or actual emergency. The HCERP is designed to facilitate a timely and effective response to and recovery from those hazards to which the Regional Municipality of Halton is particularly vulnerable. The plan also sets out the means by which the Regional Municipality of Halton may provide emergency support services to other municipalities.

Relevance:

Water and wastewater are services which can be at risk during an Emergency. Therefore, having a well co-ordinated and integrated response plan to effectively minimize disruption of services, is critical to the citizens of Halton.

Pumping Station Master Plan

Purpose:

The Pumping Station Master Plan documents the results of the assessment completed to implement a pumping station management strategy. The subject of this study was 59 pumping stations that convey wastewater located in the southern half of the Town of Oakville and the City of Burlington.

The Region had identified the need to upgrade a number of the pumping stations included in the study area to address one or more of the following issues:

- Normal aging and deterioration processes in the context of lifecycle management (i.e. sustainability) of these facilities.
- Hydraulic capacity impacted by current needs and future growth demands defined in the Region's *"Sustainable Halton"* program designed to respond to the provincial *Places to Grow* legislation.
- Operations and maintenance management issues with these pumping stations.

Key Elements:

The objective of this study was to prepare a comprehensive plan for asset renewal which considers future needs and infrastructure optimization for 59 wastewater pumping stations. The pumping stations underwent an assessment of their physical condition, hydraulic capacity and the overall efficiency in servicing the drainage areas. The physical condition assessment involved an inspection of each station with renewal and replacement needs identified, as well as to identify any operating and maintenance issues for each station. The hydraulic assessment involved both theoretical analyses and field pumping tests at the stations to establish the hydraulic capacity and to make a determination regarding expansion or upgrade requirements of each station to meet growth projections.

The study area was divided into 5 drainage areas (Burlington West, Burlington East, Oakville SW West, Oakville SW – East, Oakville SE). The preferred pumping station management strategy is *"□ to eliminate as many pumping stations as possible where there are net positive benefits (either financial, social, environmental or operational) while also noting that the timing for replacement or elimination of each pumping station will be dependent on a number of factors*

–e.g. sequencing of the installation of proposed trunk sewer tunnels, age / condition, capacity, financial viability and other factors".

Summary comments for the Master Plan for the strategic management of 59 pumping stations located in the Burlington and Oakville south drainage areas are noted as follows:

- A number of pumping stations may be eliminated with the full implementation of the Master Plan servicing strategy.
- Master Plan projects identified in this report may need to undergo additional environmental assessments and preliminary engineering reviews to confirm the feasibility, priorities, timing, costs and details of the implementation approach. The EA classification should be reviewed and confirmed as part of the preliminary engineering reviews. The reviews also need to confirm environmental mitigation measures.
- The implementation of the Master Plan would be managed through the Region's capital planning process.
- Timing of the various Master Plan projects within the short, medium and long term timeframes offers a significant degree of flexibility to plan the financing of the works.
- Factors that were considered in the Master Plan analysis can change over time (e.g. cost of energy) with the potential to change some of the results, including the identification of pumping stations that may be eliminated. These changes need to be monitored to determine if a re-evaluation is warranted at different times.

Relevance:

Wastewater pumping stations are an integral part of the wastewater collection system. These facilities have a relatively short estimated service life and the Region is taking a proactive approach to management of the facilities and the associated wastewater flows in order to minimize the potential impact on the environment due to out of service incidents.

Biosolids Master Plan

Purpose:

In 2009, the Regional Municipality of Halton (Halton Region) initiated the development of a comprehensive Master Plan for the management of biosolids generated at the Region's seven wastewater treatment plants (WWTPs). Biosolids are a nutrient-rich, organic by-product of the wastewater treatment process, which is currently provided to the agricultural community for beneficial reuse in crop production.

The purpose of the study was to develop a long-term, environmentally sustainable, reliable, and cost effective biosolids management program that responds to current and future program challenges. Specifically, the purpose was to evaluate biosolids Management Methods, and to recommend a Strategy that ensures the program's long-term sustainability to the year 2031.

Key Elements:

The Biosolids Master Plan was completed as a Master Plan, fulfilling the requirements of Phases 1 and 2 of the Municipal Class EA. Projects that result from the Master Planning process will be subject to the requirements of the Municipal Class EA process which may include further assessment for Schedule B activities. In addition, Phase 3 and Phase 4

requirements may need to be carried out for any Schedule C activities related to the Master Plan.

Halton Region's Preferred Biosolids Management Strategy involves:

- Continued Land Application to the extent that costs are controlled and reasonable, and vulnerabilities are minimized;
- Investigation of Composting opportunities to enhance Halton Region's land application program; and
- Investigation of Thermal Oxidation (Incineration) partnership opportunities at a facility outside of Halton Region to diversify the Strategy.

Each of the three Methods (Land Application of Liquid and Cake; Composting; and Thermal Oxidation) could be an integral part of the Region's Biosolids Management Strategy, depending on the outcome of further investigations. Further investigations will be needed to define the specific details of each element of the Strategy [e.g. composting method, allocation of biosolids to each method, partnership options for Thermal Oxidation (Incineration), etc.].

Relevance:

Biosolids are the solid component of wastewater and disposal can have a negative impact on the environment. The quality of biosolids produced at Region Treatment facilities enable disposal in an environmentally sustainable manner through soil augmentation.

2.2.5 Procedures/Programs

Region of Halton – Planning Applications

Purpose:

Halton Region is the approval authority for:

- Regional Official Plan Amendments.
- Local Official Plan Amendments, when requested.
- Unresolved issues related to Official Plan Amendments, as identified by a commenting agency.

Any change to a land use or Official Plan designation will require one or more planning applications.

Key Elements:

Regional Planning staff are responsible for the following matters:

- Administering Regional Official Plan policies relative to development applications;
- Processing and approving Regional Official Plan Amendments;
- Processing and approving Local Official Plan Amendments deemed not to be exempt;
- Providing input at pre-consultation meetings, if required;
- Reviewing and commenting on local development applications;

- Reviewing and commenting on Niagara Escarpment Plan Amendments and Development Permits;
- Reviewing and commenting on Parkway Belt West Plan Amendments;
- Co-ordinating the provision of services and service allocations; and
- Providing comments on behalf of the Provincial Ministry of Municipal Affairs and Housing, Ministry of the Environment, Ministry of Natural Resources, Ministry of Agriculture, Food and Rural Affairs, and Ministry of Culture. This role is defined through a Memorandum of Understanding between Halton Region and the Province of Ontario.

Relevance:

The role that the Region plays in the approval of Land Use change applications is multi-fold. A core component relates to the assessment of impacts (and needs) on the water/wastewater systems. Aligning future plan assessment with the principles of a Water Sustainability Plan will concurrently advance the objectives of the Region and its partners.

Environmental Stewardship/Education

Purpose:

- Encourages private stewardship; and
- Guides available - Natural Areas as Neighbours: Homeowner's Guide for Properties Adjacent to Environmentally Sensitive Areas and Native Plant Recommended for Natural Landscaping & Ecological Restoration in Halton Region.

Woodlands Stewardship Program

Purpose:

- Provides funding for the preparation of a Forest Management Plan, purchase and planting of nursery stock, and also no-cost tree marking services; and
- The goal of this program is to increase awareness in stewardship of forested areas and to increase the quantity and quality of forested areas in Halton for the long term.

Outdoor Water Use Program

Purpose:

- The Outdoor Water Use Program monitors:
    - The Region's drinking water systems. Specifically, the amount of water being produced and delivered from the Water Purification Plants.
    - Source water levels.
    - Risk factors that strain our supply of potable water (i.e. weather patterns);
- When certain indicators show that our water system is stressed the Region will issue a change in restriction level;

- Depending on the current restriction level in effect, residents may be asked to reduce or stop outdoor water activities, until water levels are higher again;
- Halton Region has a set of criteria for changing between levels. The criterion includes:
  - Water production rates.
  - Daily reservoir levels.
  - Aquifer levels.
  - Weather patterns;
- Regional staff monitors conditions on a daily basis. When preset levels for the different criteria are reached, the process of changing from one restriction level to another begins; and
- Includes information such as Outdoor Water Conservation Tips, How to Create a Water Efficient Garden, and Automatic Irrigation.

Relevance:

Public Education and Outreach will be an important element of a future Water Sustainability Plan and may be able to utilize and build upon currently available programs of the Region.

Building a Better Halton

Purpose:

Building a Better Halton is Halton Region's infrastructure construction plan for roads, water, wastewater and waste management projects across Halton Region. Through this program, the Region is making a commitment for infrastructure to help achieve their goal of Building a Better Halton. In 2011, the Region invested more than $190 million for infrastructure upgrades, maintenance and new projects.

Through Building a Better Halton, the Region plans to improve residences quality of life by:

- Reducing commute and general drive times.
- Providing a high-quality water supply to communities across the region.
- Improving wastewater collection and treatment to higher than provincial standards.

Relevance:

The Region is committed to infrastructure upgrades including those required for water and wastewater services. The development of a Water Sustainability Plan and associated implementation program would assist the Region in meeting its objectives under the Building a Better Halton Policy.

Leak Detection Program

Purpose:

The Region has an ongoing program to reduce the non-revenue water within the potable water system. The program includes leak detection which indentifies watermains which are in need of repair. Once detected, the Region initiates repairs to the subject watermain.

Key Elements:

Leak detection is a field investigation technique which includes Ground Penetration Radar (GPR) and audio detection of leaks.

Relevance:

Leak detection programs target water loss through pipe leakage. The goal is to minimize water loss from the distribution system through successful detection and prompt repair of leaks

Water Balance Audit

Purpose:

A Water Balance Audit is completed for each of Halton's Local Municipalities to assess unaccounted for water within each individual distribution network. With reference to unaccounted for water within the International Water Association's (IWA) Water Balance Audit, it is stated that a distribution system can experience 5 to 45% of system input volume lost as non-revenue or unaccounted for water.

Relevance:

A Water Balance Audit is a method for the Municipality to determine how much of the water being produced is unaccounted for in the system. This information will be important during the preparation of a future Water Sustainability Plan as it will assist in long term sustainability.

Storm Drainage

Purpose:

Region of Halton manages roadway and related properties which require storm drainage planning and design
Key Elements:

Region of Halton has criteria and requirements for the storm drainage infrastructure which serves underpasses for its roadways (pumping stations), roadways (major/minor systems), emergency routes and leachate management for its landfill sites.

Relevance:

Region of Halton and Town storm drainage infrastructure needs to function in a complementary manner to serve area needs.

2.2.6 Practices/Guidelines/Studies

Design Guidelines – Wastewater and Water

Purpose:

Design guidelines are used by municipalities to ensure infrastructure which is ultimately owned by the municipalities meets recognized standards and best practices.

Key Elements:

The Design Guidelines have been developed over time and include flow, pressure, pipe material, etc.

Relevance:

The standards are meant to ensure the infrastructure meets predicable service life and maximize sustainability.

Urban and Rural Services Guidelines

Additional information was not available at the time of writing this report.

2.2.7 Integration with Water Sustainability Planning

The following table summarizes some of the required elements of a Water Sustainability Plan that have been cited in the Water Opportunities Act (2010) noting some of those that the Region of Halton currently has in place or are underway. It is important to recognize that the Region is currently undertaking several aspects of Water Sustainability Planning as part of its inherent Corporate mandate and hence the following list is not considered exhaustive, only representative.

Table 2.3: Summary of Region of Halton's Relevant Supporting Elements for a Water Sustainability Plan							
	Applicable Document	**Asset Management Plan**	**Financial Plan**	**Water Efficiency / Conservation Plan**	**Assessment of Risks**	**Strategies for Maintaining and Improving**	**Other Aspects related to water**
1	Halton Region Official Plan (2006)					☑	
2	Sustainable Halton					☑	
3	2011-204 Citizens' Action Plan	☑		☑	☑	☑	☑
4	Sustainability and Action Plan					☑	
5	Water Conservation and Efficiency Strategy, Outdoor Water Use Program			☑		☑	☑
6	Water and Wastewater Master Plan	☑	☑		☑	☑	☑
7	Aquifer Management Plan			☑	☑	☑	☑
8	Waterworks By-Law			☑	☑	☑	☑
9	Sewer Use and Sewage By-Law(s)				☑	☑	☑
10	Forest Management Plan, Forest Use By-Law, Woodlands Stewardship Program				☑	☑	

☑ - Completed, being implemented and scheduled for updating on 5 year cycle
☑ - Underway, in development
☑ - Planned, scheduled for near future (1-2 years)

2.3 Conservation Halton Water Framework

2.3.1 Introduction

Conservation Halton is a community-based environmental agency that protects, restores and manages the natural resources in its watershed. This includes a 1000 sq. km. Land base with 17 watercourses that flow into Lake Ontario, 80 kilometres of Ontario's Niagara Escarpment and extensive forests. The watershed includes most of the Region of Halton and portions of Hamilton, Puslinch Township and the Region of Peel (ref. Figure 2.5).

Conservation Halton has staff that includes ecologists, land use planners, engineers, foresters and educators along with a network of volunteers who are guided by a Board of Directors comprised of municipally elected councillors and appointed citizens. The agency is recognized for its stewardship of creeks, forests and Niagara Escarpment lands through science based programs and services.

2.3.2 Mandate

Vision – Conservation Halton's vision is to sustain a healthy watershed with clean streams, vigorous forests, abundant green space and balanced growth that results in strong livable communities.

Mission - Conservation Halton's mission is to help protect the natural environment from lake to escarpment for the benefit and enjoyment of present and future generations.

Objects - Conservation Halton's objects are to establish and undertake a program designed to further conservation, restoration, development and management of natural resources, which includes water.

Conservation Halton's mandate includes the following primary roles:

Environmental Protection - Conservation Halton protects local ecosystems and contributes to the quality of life in communities throughout the watershed.

Water Resources Management - Conservation Halton manages water resources using integrated, ecologically sound environmental practices to maintain secure supplies of clean water, to protect communities from flooding and to ensure that environmental planning is an integral part of community development.

Forest Resources Management - Conservation Halton manages a large forest resource using sustainable forest management practices involving silviculture and wildlife habitat improvements which contribute to the health of the watershed's natural environment.

Lifelong Education and Recreation - Conservation Halton provides educational and recreational experiences in natural environments that enrich the lives of people of all ages by increasing awareness and appreciation of the watershed's natural heritage.

Figure 2.6 outlines the Water Framework related to the various Strategies, Policies/Plans, Procedures/Programs and Practices/Guidelines/Studies.

2.3.3 Strategic Plans

2009-2013 Strategic Plan *Towards a Healthy Watershed*

Purpose:

Conservation Halton's Strategic Plan, *Towards a Healthy Watershed*, guide environmental protection efforts to ensure that the watershed's health will be maintained or enhanced while meeting the current and future needs of local communities. The strategic plan identifies both current and long-term priorities for the organization. It also tells watershed residents, municipal partners and all other stakeholders what the organization's Board of Directors and staff considers important.

Key Elements:

The plan is divided into five main themes – environment, parks, education, community and governance – reflecting the mandate and activities of Conservation Halton. Grouped within each of the five themes are a series of objectives, the strategic directions identified by the board and staff, and action items.

Theme 1: Environment

1.1 Create and implement programs to sustain a healthy watershed.

1.2 Develop, enhance and sustain a natural heritage system for the watershed.

1.3 Protect sources of public drinking water through source protection programs.

1.4 Deliver watershed management programs and services to ensure the protection of like and property from natural hazards.

1.5 Provide leadership in preparing for the potential impacts of climate change on the watershed.

Theme 3: Education

3.1 Deliver strong community stewardship programs to promote watershed health.

3.4 Create awareness of climate change and water conservation within the watershed community and encourage social change among watershed residents.

Each of the departments within Conservation Halton will develop work plans and success measures to ensure the Strategic Plan is an action document. Staff will deliver annual updates and progress reports on their work plans to the Board. Regular publications such as the Accountability Report will also communicate information related to the objectives and action items in the Strategic Plan.

The success of the Strategic Plan will ultimately depend on the ability of the organization to involve, engage and motivate the community. Conservation Halton is committed to working in partnership with its municipal partners, community organizations and residents to achieve the objectives and action items identified to protect and manage the natural environment in the watershed.

Relevance:

Conservation Halton's Strategic Plan sets out the planning direction for the Conservation Authority. The built in feedback to the Conservation Board and to the general public holds the Conservation Authority responsible for its actions and will identify if the Conservation Authority is meeting its goals. The Water Sustainability Plan will have to be aware of the Authority's goals and actions for the coming years in order to remain in-step and consistent.

2.3.4 Policies/Plan

Ontario Regulation 162/06 – Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation

Purpose:

The Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation allows Conservation Halton to regulate development within wetlands, shoreline hazards, valley systems and their associated allowances with respect to flooding, erosion, dynamic beaches, conservation of land and pollution. Development on lands adjacent to wetlands (varies from a distance of 30 m to 120 m adjacent to wetlands depending on significance and/or size of wetland) is regulated with respect to potential hydrologic impacts to the wetland. The regulation also allows Conservation Halton to regulate alterations and interferences to watercourses and wetlands.

Key Elements:

All applications for permission under Ontario Regulation 162/06 are submitted directly to Conservation Halton (though there is frequently an overlap with Planning Act application reviews due to related issues and coinciding responsibilities). The Town is copied on all approvals within their jurisdiction. The Region and the Town are subject to obtaining all necessary approvals from Conservation Halton pursuant to Ont. Reg. 162/06 for their own projects.

Relevance:

The Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation is the main regulatory agent that the Conservation Authority has to regulate development in its jurisdiction. Any policies or initiatives developed under the Water Sustainability Plan will have to adhere to the Authority's restrictions under this regulation.

Drinking Water Source Protection

Purpose:

Under the *Clean Water Act*, *2006,* the Province designated Ontario's watersheds as Source Protection Areas and combined these into 19 Regions, including the Halton-Hamilton Source Protection Region. Each Region's Source Protection Committee is required to produce a Source Protection Plan for each Source Protection Area. The Plan aims to protect existing and future drinking water sources from contamination or overuse through policies that ensure that activities that pose significant risk to drinking water sources cease to exist or never become significant threats.

Key Elements:

The main components of source protection planning are a watershed assessment, drinking water protection plan development, information management, and implementation of a public information and communications program.

An Assessment Report for each Source Protection Area was written to document the physical and human characteristics of each watershed, identify stresses on water resources, identify vulnerable areas where certain activities could negatively impact the quality and/or quantity of the area's sources of drinking water, and define the risk to these water sources from specific activities. In developing Source Protection Plans, the Assessment Reports were used to determine the necessary measures to ensure drinking water is protected at its source. The Source Protection Committee collaborated with municipal and conservation authority planners and related specialists to develop policies that address significant threats and other concerns in order to protect the groundwater and water from Lake Ontario that supply the Region with drinking water.

Relevance:

The Source Protection Plan for the Halton Region Source Protection Area will include policies to be implemented by the Town of Oakville, the Region of Halton, local industry, and others to protect the quality and quantity of drinking water sources. A few significant drinking water threats exist within the Town of Oakville. After an extensive public and stakeholder consultation process, the proposed Source Protection Plan was submitted to the Minister of the Environment in August 2012; it is currently undergoing Ministry of the Environment review and is expected to be approved in 2013.

The development of a future Water Sustainability Plan will accompany, and need to directly align, with the policies/programs developed through source protection planning.

Park Master Plans

Purpose:

Conservation Halton undertakes Master Planning not only to guide ecological restoration efforts, but to further our commitment to sharing our Conservation Areas with Halton residents and visitors, both now and in the future.

The master plan is the principal guiding policy document for the planning, development and resource management of each of these conservation areas, which are owned and administered by Conservation Halton. The master plans were undertaken as recommended by the Limestone Legacy report prepared by Conservation Halton in 2007, which proposed a vision to create "a sustainable network of world class conservation parks for ecological health and to provide public greenspace for quality education and recreation."

Key Elements:

The master plans are developed in a phased three stage planning process designed to address growing regional recreational demands while also ensuring the long-term protection and sustainability of this natural escarpment park. The planning process was structured to satisfy the legislative requirements of the Niagara Escarpment Plan and the Conservation Authority Act and has included extensive consultation with the public, stakeholders and related agencies.

Final Stage 3 Master Plans have now been completed for Crawford Lake, Hilton Falls, Mount Nemo and Rattlesnake Point and are available to review on this website. The final draft park master plans are currently under review by the Conservation Halton Board of Directors.

Following approval the plans will be submitted to the Niagara Escarpment Commission and Ministry of Natural Resources for final approval.

Relevance:

The natural public parks administrated by Conservation Halton are important to the long term viability and protection of local areas including water based features. These park lands contribute to some of the objectives of a Water Sustainability Plan.

2.3.5 Procedures/Programs

Plan Input and Review

Purpose:

Through the Authority's Plan Input Role, Conservation Halton provides input into Watershed Studies, Subwatershed Studies, Official Plans and Comprehensive Zoning By-Laws to help identify and protect significant natural heritage features and functions and lands susceptible to natural hazards such as flooding and erosion. Through the Authority's Plan Review Role, Conservation Halton reviews specific development applications, such as Official Plan Amendments, zoning by-law amendments, plans of subdivision, severances, minor variances, Niagara Escarpment development permits and site plans in accordance with both its regulatory responsibilities, as well as its responsibilities under the various Memoranda of Understanding with its watershed municipalities and the Province of Ontario.

Key Elements:

Some of the issues/impacts that Conservation Halton review which are water-related include: flood plains, meander belt widths, wetlands, fish habitat, wildlife habitat, endangered species and threatened species habitat, stormwater management and subwatershed planning. Development proposals are reviewed to determine how the proposed works may impact upon, and/or be impacted by, the natural environment.

Memoranda of Understanding - The Memoranda of Understanding with the Region of Halton and local municipalities outlines the responsibilities of the Region of Halton and their partners in plan review and plan input for various aspects of the Provincial Policy Statement and other legislation affecting land use planning. The purpose of the Memoranda is to:

i. Eliminate unnecessary duplications,
ii. Enhance accessibility and clarity of the development review process through a one-window approach for customers,
iii. Reduce development process time and steps,
iv. Provide for better quality service based on a more efficient plan review process and information base,
v. Provide for the better co-ordination of regional data management systems and therefore more accessible and better quality data at reduced overall costs,
vi. Provide for the more efficient allocation of existing government resources, and
vii. Maximize the utilization of existing staff expertise.

With respect to the Provincial Policy Statement, Conservation Halton specifically comments on Natural Heritage (Policy 2.1), Water (Policy 2.2) and Natural Hazards (Policy 3.1), all of which are relevant to water resources. The purpose of the Conservation Authority's portion of the Memorandum of Understanding is to clearly outline what the Conservation Authority is responsible for providing in terms of the initial review and subsequent technical review of planning applications.

Conservation Halton has typically been the lead on Watershed Studies for the major watercourses in the Town, specifically Bronte Creek and Sixteen Mile Creek. The Authority would circulate staff at both the Region and the Town for input on any watershed study or study update.

For input on subwatershed studies, Official Plans, Zoning By-laws, Planning Act applications, etc., the Town will circulate Conservation Halton for comment. Typically Conservation Halton will then provide comment to the Town, copied to the Region, to provide an opportunity for the Town and the Region to consider our comments so that there can be internal discussion between the three agencies if there are any concerns before the comments are circulated to the proponent.

Relevance:

Conservation Halton's plan review input and role is based on adherence to various Provincial policies and guidelines. As related to water, the Authority's role encompasses matters associated with the management of stormwater quantity and quality and as such may receive some guidance and support from the Water Sustainability Plan from area municipalities.

Flood Protection, Low Water and Water Control

Purpose:

Conservation Halton provides a water control and flood warning program to reduce the risk of property damage and loss of life due to flooding.

Key Elements:

This program includes the following features and functions that would have impact on the Town of Oakville:

- Operation and maintenance of four major flood control structures (Kelso, Hilton Falls, Scotch Block and Mountsberg dams).
- Operation and maintenance of 12.5 kilometres of flood control channels including, within Oakville, the Morrison/Wedgewood Diversion Channel.
- Continuous water level monitoring of watercourses and reservoirs.
- Computerized flood forecasting, flood damage assessment and data collection and management.
- Emergency planning and flood warning.
- Mapping of flood damage centres.

In addition to providing flood control, Conservation Halton has a series of dams/reservoirs that are also utilized to augment low flows in creeks during dry periods.

Relevance:

The protection of residents and infrastructure from flooding through the operation/management of flood control infrastructure/systems is a core mandate of Conservation Authority's across Ontario. A Water Sustainability Plan will need to recognize this function as contributing to the safe distribution of clean and sufficient water, long term.

Ontario Low Water Response Program

Purpose:

The Ontario Low Water Response Program was developed jointly with various Provincial Ministries (OMAFRA, MOE, MNR, MMAH, MEDT), Conservation Ontario, and the Association of Municipalities of Ontario in 2000 to address low water conditions being experienced across the Province at that time.

The primary purpose of the Plan has been to provide a framework to deal with low water conditions within various watersheds across the Province of Ontario and is specifically focused on providing an organizational setup for low water crisis management actions within various regions of the Province.

The program is intended to manage low water conditions through the existing legislation relating to water management. Specifically, the Ontario Water Resources Act and Environmental Protection Act (administered by MOE), the Emergency Plans Act (administered by MNR), and the Municipal Act have been identified as the primary legislation to manage the usage of water under low conditions. In addition, water management legislation such as the Fisheries Act, Conservation Authorities Act and the Lake and Rivers Improvement Act and others, also contain provisions that may be used in low water conditions.

Key Elements:

The Province (MNR) has set up a rainfall and stream flow monitoring system and undertakes regular assessment of watershed conditions. This assessment is based on a comparison of current rainfall and stream flow conditions relative to long term average conditions, which will determine whether low water conditions exist in watersheds across the province. If low water conditions are indicated, the Province confirms these results with Conservation Halton (and other local Conservation Authorities) who then takes the lead role in organizing and coordinating a meeting of the local Low Water Response Team (LWRT).

The LWRT consists of representatives from the following sectors:

- Water User and Interests (including representatives of agriculture, industry and business, recreation, resource management interests, and First Nations)
- Local and Regional Municipalities

- Conservation Authorities
- Provincial Ministries
- Federal Department of Fisheries and Oceans

The Low Water Response Plan identifies three incremental levels of low water conditions that warrant further management actions as determined by the LWRT. These levels are broadly defined as:

- Level 1 - Actions focus on Voluntary Conservation (10% reduction in water usage)
- Level 2 - Actions focus on Conservation (further 10% reduction in water usage) and Restrictions on Non-Essential Use
- Level 3 - Actions focus on Conservation, Restriction and Regulation of Non-Essential uses

The role of Conservation Halton in the implementation of low water condition response includes:

- Assembly and monitoring of rainfall and stream flow data to support and collaborate the results of Provincial Monitoring
- Providing information and regular updates to members of the LWRT in the event of Low Water conditions and organizing meetings if necessary
- Maintaining strong links with local community groups, the media, etc., to facilitate coordination of water conservation messages
- Operation of dams and reservoirs

Relevance:

The Conservation Authority plays a key role in the monitoring and subsequent implementation of the low water condition response. This existing program may be used as an element of a future Water Sustainability Plan.

Land Managers

Purpose:

Conservation Halton manages more than 10,000 acres (3,600 hectares) of natural lands to enhance the biodiversity and health of the watershed and provide critical greenspace for rapidly expanding communities. This landbase includes more than 7,500 acres of forested lands, much of which is located in conservation areas and resource management sites. The forests and other natural areas within Conservation Halton's watershed provide habitat for a myriad of wildlife species. They also provide ecosystem functions such as cleaning the air, purifying water and storing carbon along with providing places of natural beauty for an increasingly urbanized human population. Protecting existing forests and increasing forest cover is an important aspect for sustaining the health of the watershed. Science based studies suggest that 30% forest cover is the minimum target to maintain the health of watersheds.

Key Elements:

Over the years, Conservation Halton has acquired lands through both donations and purchase.

Donations are typically made as an Ecogift, a federally supported programme to bring lands of an identifiable natural heritage value into the ownership of agencies that can secure, protect and manage that land to the long term sustainability and protection of the natural heritage interests. Donations may also occur through the development process where natural heritage and hazard lands adjacent to new development are given to an agency to manage.

Purchase of lands is less frequent due to lack of funding, however, when it does occur it will in most cases be associated with a partnership between several bodies.

In all land acquisitions Conservation Halton will work in some form of partnership, and this effort tends to be coordinated (in Halton) through the Regional Greenland Securement group.

The Authority does not actively pursue land acquisition at this time due to a lack of resources. Lands are currently acquired as opportunities present themselves, almost exclusively through donation.

Conservation Halton manages the natural areas within its ownership on a watershed basis. Scientific research supports this approach which involves protecting core natural areas that are connected to other public and forested sites. This network of watershed forests, also referred to as a natural heritage system, can then be linked to broader features such as the Niagara Escarpment, Oak Ridges Moraine and the Golden Horseshoe Greenbelt.
Conservation Halton's forests are primarily used for conservation and preservation purposes. Relatively small portions of the forest (5%) are used for passive recreation such as hiking and nature appreciation. Active recreation such as camping and skiing generally take place in open areas adjacent to the forest locations.

Conservation Halton manages its forest resource using sound sustainable forest management practices involving silviculture and wildlife habitat improvements, which contribute to the health of the watershed's natural environment.

Relevance:

Protection and expansion of woodlands and other natural areas are essential to protecting crucial ecosystem functions such as purifying water and combating global warming through carbon sequestering. This role/service therefore has the potential to have a significant impact on future water availability and quality in the Town's watersheds. The continuation and potential enhancement of this role/service is anticipated to be an important element of an effective Water Sustainability Plan.

Park Managers

Purpose:

The Authority's vision for park lands is to create a sustainable network of world class conservation parks for ecological health and to provide public greenspace for quality education and recreation. The Authority endeavour to plan, develop and manage each of their conservation areas in such a fashion to ensure the long-term protection and sustainability of the water resources within these lands.

Key elements:

Master Plan
Conservation Halton undertook Master Planning not only to guide ecological restoration efforts, but to further their commitment to sharing their Conservation Areas with Halton residents and visitors, both now and in the future.

The master plan is the principal guiding policy document for the planning, development and resource management of each of these conservation areas, which are owned and administered by Conservation Halton. The master plans were undertaken as recommended by the Limestone Legacy report prepared by Conservation Halton in 2007, which proposed a vision to create "a sustainable network of world class conservation parks for ecological health and to provide public greenspace for quality education and recreation." Master Plans are currently underway for Crawford Lake, Hilton Hills, Mount Nemo, Rattlesnake Point, and Glenorchy.

Recreational Activities – available at some of the Conservation Areas

- Boating
- Cross-country skiing
- Downhill skiing
- Driving tours
- Fishing
- Geocaching
- Group Camping
- Heritage site viewing
- Hiking
- Mountain biking
- Picnicking
- Rock climbing
- Snowshoeing
- Swimming
- Wildlife viewing

Relevance:

The Conservation Authority is committed to the protection and enhancement of its park areas. There is an opportunity with the proposed development of a future Water Sustainability Plan to enhance these natural areas and work towards achieving the Authority's vision of a sustainable network of parks.

Forestry Program, Including Trees for Watershed Health – Forestry (April 2006)

Purpose:

Conservation Halton plays a major role in forest management, tree and shrub planting, and reforestation throughout our watershed. Conservation Halton manages a large forest resource (more than 3,600 ha) using sound sustainable forest management practices involving. Conservation Halton has planted over 2.25 million trees over the past 50 years. These activities provide a variety of environmental benefits, which include protecting water quality and quantity. Trees for Watershed Health is a community outreach program of Conservation Halton that involves engaging watershed residents and community groups in tree planting. The program is designed to bring communities and nature together to increase forest cover in the watershed through volunteers planting trees at selected sites. This program is made possible in part by a multi-year grant given to Conservation Halton by the Ontario Trillium Foundation.

Key Elements:

Objective

i. Increase forest cover in Conservation Halton's watershed to foster a healthy, sustainable and vibrant natural environment.
ii. Engage watershed communities through a volunteer tree planting program and encourage local stewardships.
iii. Increase Conservation Halton's volunteer base by providing innovative planting programs.
iv. Deliver quality outreach and education to highlight the benefits of increasing urban and rural forest cover.

Program Goal

To support the planting of 500,000 trees over five years and engage the community by inviting 500 volunteers annually.

Program Components

- Tree planting on Conservation Halton lands
- School Naturalization Projects
- Stream and Environmentally Sensitive Areas (ESA) Restoration Projects
- Quarry rehabilitation sites
- Municipal and Partner Agency Lands – Urban Forests

In addition to these program components funds may be available to support other planting events throughout the community.

Relevance:

This program is dependent on volunteers and will be an important element to the effective implementation of a Water Sustainability Plan. The education and outreach component will also be a valued component of a Water Sustainability Plan.

Long Term Environmental Monitoring Program

Purpose:

The Long Term Environmental Monitoring Program (LEMP) is designed to monitor species, ecosystems and changes to the watershed over time. Watershed report cards are published on the health of various watersheds. It helps ecologists and land use planners in obtaining the quantitative information they need to establish targets and make informed decisions for the planning, management and/or rehabilitation of our natural resources. Designed to monitor species, ecosystems and changes to the watershed over time, it ensures that Conservation Halton's mission of "protecting and enhancing the natural environment from lake to escarpment for the benefit and enjoyment of present and future generations" is being fulfilled.

Key Elements:

Monitoring is completed on a two-year cycle with a focus on a particular watershed and/or watershed group each year (Grindstone Creek 2006, Bronte Creek 2007, Urban Creeks 2008, Sixteen Mile Creek and Grindstone Creek 2009).

Tier 1 Indicators

- Fish Community
- Benthic Community
- In-stream habitat and temperature
- Water Quality
- Frog and Marsh Bird Monitoring
- Forest Bird Monitoring
- Forest Pests
- Forest Biodiversity Monitoring
- Ecological Land Classification

Tier 2 Indicators

- Landscape Analysis

Tier 3 Indicators

- Sources of Change

Relevance:

Monitoring of natural systems including water resources will be necessary to ensure that current policies are working to achieve their specified goals. Monitoring will also need to be fundamental component of a Water Sustainability Plan, hence the co-ordination and alignment of these programs is expected to be integral to any future plans.

Hamilton-Halton Watershed Stewardship Program

Purpose:

Conservation Halton implements the Hamilton-Halton Watershed Stewardship Program (HHWSP) to encourage and assist with environmental stewardship initiatives on private lands. The program is undertaken in association with Hamilton Conservation Authority and the Bay Area Restoration Council.

The HHWSP's purpose is to protect, enhance and restore environmentally significant natural areas and watercourses in the watersheds of Hamilton Conservation Authority and Conservation Halton through education and outreach initiatives developing an educated, empowered group of landowners. The program has been proactively contacting landowners of natural areas and watercourses encouraging them to be good stewards of their land.

Key Elements:

The program proactively contacts landowners of natural areas and watercourses encouraging them to be good stewards of land and water. Landowners have been involved in, or provided information about, rehabilitation projects which include establishing riparian buffers, enhancing wetland and upland habitat, fencing cattle from watercourses, constructing manure storage facilities, and controlling erosion.

Landowners receive technical, financial and volunteer assistance to implement these projects, and sign 10-year management agreements in exchange for receiving financial assistance through the Halton-Hamilton Water Quality and Habitat Improvement Program. To-date over 21 hectares of wetland, over 61 hectares of forest, over 13 hectares of prairie/meadow and over 18 kilometres of riparian habitat have been created or improved.

As of December 2010, over 329 landowners across Halton and Hamilton have made verbal agreements to consider the effects of their land management practices on the health of the watershed. These landowners have been publicly recognized and are recipients of the Watershed Steward Award. The Watershed Steward Awards (agreements) cover over 5,236 hectares of land, which includes over 266 kilometres of riparian habitat and over 2,826 hectares of natural area in the watersheds of Hamilton and Halton Conservation Authorities.

Other initiatives that HHWSP is involved in:

- The HHWSP is involved in Source Water Protection process with Halton Region by delivering the Ontario Ministry of the Environment's Drinking Water Stewardship Program to Halton Region residents living in municipal wellhead areas.

- The HHWSP delivers to Halton Region residents the Halton-Hamilton Water Quality and Habitat Improvement Program providing financial assistance to landowners who implement eligible projects.
- Halton Region is a member of the HHWSP's Project Technical Advisory Committee that reviews and approves landowners' projects for financial assistance.
- The HHWSP refers landowners to Halton Region staff delivering the Region's Water Well Decommissioning Program.
- Halton Region's Woodland Stewardship Program may provide financial assistance to landowners planting trees through the HHWSP via Conservation Halton's Forestry staff.

Halton Children's Water Festival

The Halton Children's Water Festival (HCWF) provides elementary students in grades two through five with the opportunity to learn about the importance of water. The Festival is co-hosted by Conservation Halton and Halton Region in partnership with the Halton District School Board, the Halton Catholic District School Board, the Town of Oakville, the Town of Halton Hills, the Town of Milton and the City of Burlington. The HCWF concentrates on four key areas of water education – water science and technology, water conservation and protection, water health and safety, water and society. One of the HCWF's goals is to "empower children to initiate change within their homes, schools and communities . . . by taking information and new found respect back to their own environment."

Yellow Fish Road™

The Yellow Fish Road™ program is a nation-wide environmental education initiative launched by Trout Unlimited Canada. The program teaches the importance of clean water and demonstrates how the decisions of one person can make a difference on a whole community, by painting yellow fish near storm drains and distributing fish-shaped brochures. Conservation Halton co-ordinates the Yellow Fish Road ™ program on behalf of its partners, the Town of Oakville and the City of Burlington.

Stream of Dreams™

The Stream of Dreams™ Program brings awareness to communities about their local watersheds through environmental education and public artwork. The goal of the program is to improve water quality, while at the same time creating a community art legacy as a reminder of our environmental responsibilities. Conservation Halton instructors present watershed education workshops to participants, most commonly elementary school children. The children or other program participants then create dreamfish. Dreamfish are fish shapes cut from plywood and painted by the program participants. These dreamfish are then mounted on a chain link fence to create a mural. The mural serves as a reminder of the importance of protecting water sources within each community.

Burlington Bay/Hamilton Harbour Restoration

Conservation Halton is an active partner in the Hamilton Harbour Remedial Action Plan and the Fish and Wildlife Habitat Restoration Project. These long term conservation programs are designed to improve the quality of Burlington Bay/Hamilton Harbour.

Relevance:

Public outreach and engagement will be a key component to a Water Sustainability Plan; these existing programs may become components of a larger public outreach and engagement program, which focuses on an integrated view to water and sustainability.

2.3.6 Practices/Guidelines/Studies

Environmental Impact Study Guidelines

Purpose:

The Environmental Impact Study (EIS) Guidelines have been compiled as a training guide for staff at Conservation Halton and to provide clear and consistent guidelines for proponents. This manual will also facilitate the review of Environmental Impact Studies under the Memorandums of Understanding, between the Region of Halton, Region of Hamilton, City of Mississauga, County of Wellington, and Conservation Halton, with regards to planning applications as they relate to the natural environment. An EIS is an objective assessment of a development proposal in or adjacent to a natural area or feature of interest and if and to what extent the proposed development might reasonably be expected to change the biological and physical characteristics of the feature or area.

Key Elements:

Key sections of the guideline includes:

- Procedure
- Format of an EIS
- Contents of an EIS
- Data Requests

Relevance:

Natural spaces plan an important role in the management of water including surface and groundwater, quantity and quality. EIS Guidelines provide the template for the process to define the approach to protecting/enhancing these areas as part of land use change proposals. A stormwater focussed Water Sustainability Plan will need to embrace this process.

Landscape and Tree Preservation Guidelines

Purpose:

The Landscape and Tree Preservation Guidelines were developed in April 2010 for use by landscape architects and other practitioners preparing landscaping plans, restoration plans and

tree preservation plans for submission to Conservation Halton. The manual identifies planting design techniques, which have been found to be effective within Conservation Halton's jurisdiction.

Key Elements:

The following sections are covered in the guidelines:

- General Standards (including species selection, density, topsoil, when to plant, post-planting care etc.)
- Watercourse Standards
- Standards Adjacent to Natural Areas
- Stormwater Management Facility Standards
- Bioengineering Techniques
- Shoreline Restoration
- Tree Preservation Plans

Relevance:

As noted, trees and forests contribute to controlling negative impacts from urbanization and hence indirectly support sustainability principles, particularly for broad-based water management strategies.

Watershed Studies

Purpose:

The goal of watershed planning is to provide a framework to protect, maintain and restore a healthy natural watershed ecosystem. A watershed plan recommends how water resources are to be protected and improved as land uses change, and allows for smaller sub-watershed or site management plans. A watershed plan can be initiated by any individual, group, provincial ministry, municipality, or conservation authority for a variety of reasons, such as:

- Future resource extraction threatening water or related resources;
- Future urban development;
- Environmentally sensitive watershed conditions; or
- Rehabilitation of watersheds.

Key Elements:

A watershed plan often contains the following information:

- watershed management strategy;
- identification of form and function of natural systems;
- relationship of watershed plan to sub-watershed plans;
- watershed issues;
- plan recommendations; and,
- implementation plans.

Halton has four (4) watersheds in which Watershed Plans are in various levels of development including Grindstone Creek, Bronte Creek, Sixteen Mile Creek, and North Shore.

Relevance:

Watershed Plans provide high-level guidance related to policies to manage future development impacts and protect water-based features and functions.

Watershed Report Card

Purpose:

Conservation Halton produces a Watershed Report Card every five years in conjunction with the review of its strategic conservation plan. The report highlights our conservation achievements and provides an overall indication of the environmental health of the watershed. Investing in conservation through value based programs greatly benefits watershed communities. The plan's vision is to sustain a healthy watershed with clean streams, vigorous forests, abundant greenspace and balanced growth that results in strong livable communities.

Key Elements:

The Watershed Report Card is a report on the ecosystem health of the region. There are four key measurements in the report card:

- **Fisheries** - the numbers and types of fish found in a watercourse are good indicators of stream health and water quality
- **Forests** - forests are good indicators of ecosystem health since they are home to plants and wildlife and help improve air and water quality
- **Surface Water Quality** - chemical analysis and an identification of the aquatic bugs are good indicators of water quality and stream habitat
- **Wetlands** - wetlands are important for maintaining water quality and providing habitat for a variety of fish and wildlife

Relevance:

Communications of environmental health by way of standardized report cards of this nature, provide an opportunity to engage the public in fostering and promoting environmental and sustainability principles.

Policies, Procedures and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning Policy Document

Purpose:

This document was developed to outline the procedures and policies of Conservation Halton as they relate to the administration of Ontario Regulation 162/06 and the Authority's Plan Input and Review role. The intent was to provide clear and consistent guidelines for both staff and

proponents. It is noted that the procedural component of this August 2006 document is replaced by the August 2011 Procedural Manual discussed below.

Key Elements:

Key Sections of the document includes:

- Legislative and policy background
- Procedures for the Administration of Ontario Regulation 162/06 – replaced by August 2011 Procedural Manual
- Policies for the Administration of Ontario Regulation 162/06
- Conservation Halton Land Use Planning Policies
- Additional references

Relevance:

This document outlines the regulatory policies that a Water Sustainability Plan will have to adhere to. It also outlines policies based on various Provincial policies and guidelines related to water and therefore will have implications for and could be affected by a Water Sustainability Plan.

Procedural Manual

Purpose:

This 2011 document updated the procedures for the administration of Ontario Regulation 162/06. The document is intended to provide clear and consistent guidelines for both staff and proponents.
Key Elements:

Key Sections of the manual include:

- Permitting Procedures
- Ontario Regulation 162/06 and Landscaping Plan Checklists
- Landscaping and Tree Preservation Guidelines
- EIS Guidelines
- Application Forms
- Fee Schedules
- Hearing Procedures

Relevance:

This manual outlines the regulatory procedures that a Water Sustainability Plan will have to adhere to.

2.3.7 *Integration with Water Sustainability Planning*

Conservation Authorities will not be required to prepare Water Sustainability Plans. Authority programs and policies however might be supportive of an upper, lower or single tier municipality's Water Sustainability Plan. Authority regulations and policies may also have requirements that a Municipal Plan will have to adhere to.

The following summarizes Conservation Halton programs and policies that might be supportive (and in some cases restrictive) elements of either the Town's or the Region's Water Sustainability Plan with respect to its core content components:

Table 2.3: Summary of Conservation Halton's Relevant Supporting Elements for a Water Sustainability Plan

	Applicable Documents	Asset Management Plan	Financial Plan	Water Efficiency / Conservation Plan	Assessment of Risks	Strategies for Maintaining and Improving	Other Aspects related to water
1.	Ontario Regulation 162/06				☑	☑	
2.	Source Water Protection	☑		☑	☑	☑	☑
3.	Plan Input and Review					☑	☑
4.	Flood Protection, Low Water & Water Control (Incl. Low Water Response Program)				☑		☑
5.	Land Management	☑				☑	☑
6.	Forestry Program (Incl. Trees for Watershed Health)					☑	
7.	Long Term Environmental Monitoring						☑
8	Public Outreach Programs			☑			☑
9.	Watershed Plans						☑
10.	Watershed Report Card						☑

☑ - Completed, being implemented, periodic updates anticipated
☑ - Underway, in development
☑ - Planned, scheduled for near future (1-2 years)
☑ - Potential Role of Existing Program/Policy

Conservation Halton's role as Land Mangers of large natural areas is key to the protection of crucial ecosystem functions such as purifying water and carbon sequestering, thereby having a potentially significant impact on future water availability and quality in watersheds. This role/service will therefore likely be a key supporting element for an effective Water Sustainability Plan.

3.0 ISSUES AND OPPORTUNITIES

As noted in the Introduction, as part of the compilation of the water based services conducted by the Town, the Region and the Conservation Authority, it became evident that there are both overlaps in services as well as gaps in services. This report section describes in detail the Issues and Opportunities apparent in the provision of water based services. These Issues and Opportunities have been derived from consultation with the Town, Region of Halton, Conservation Halton, as well as Halton Municipal partners and other Southern Ontario Water Based Service Providers (ref. Appendix C). The intent for this information is to provide direction and focus to future Water Sustainability Plans which can ultimately lead to the development of new services or the modification/refinement of existing services to increase capacity within the system (i.e. working towards sustainability).

3.1 Water-based Public Services

It in order to gain a better understanding of where the overlaps, the intersections, partnerships and the gaps exist between the services that the Town, the Region and the Conservation Authority undertake, it has been necessary as part of this study to produce a matrix focusing on Water-based related Public Services and the Public Sector Roles (ref. Appendix B). It is important to note that an overlap in services can at times be beneficial and necessary to provide the service based on complementary efforts of engaged stakeholders. The following Water-based Public Services have been identified over the course of the Study (ref. Table 3.1).

Table 3.1 Water-based Public Services

1.	Stewardship/Education a) Children's Education b) Forest Stewardship c) General Public d) Water Efficiency
2.	Monitoring a) Climate/Meteorological b) Ecosystem Change c) Water Quality d) Water Quantity
3.	Operations, Maintenance and Management/Capital Planning of Water-based Infrastructure (built and natural) a) Stormwater Management b) Storm Sewer c) Watercourses d) Shorelines e) Water and Wastewater f) Flood Control

Table 3.1 Water-based Public Services	
4.	Land Development/Land Use a) Urban Uses b) Natural Features c) Forest Management d) Process
5.	Environmental Sustainability a) Policy
6.	Design Standards a) Stormwater Management b) Urban Design c) Water and Wastewater
7.	Emergency Planning/Procedures a) Flood Control b) Spills Response c) Climate Change
8.	Compliance/Enforcement a) Natural Areas b) Storm Sewer c) Building Code d) Natural Hazards
9.	Natural Heritage/Green/Open/Park Space
10.	Financial/Human Resources
11.	Other

3.2 Issues and Opportunities Identification

The individual service-based matrices developed as part of the 'scan' of water based services, have lead to an identification of issues and opportunities, which consider where there may be competing or complementary services and/or gaps. The following information has been organized according to the Water-based Public Services, illustrating both the issues and potential opportunities. As noted in the Introduction, due to the case study focus on the Town of Oakville, the issues and opportunities inherently emphasize stormwater water services, however depending on the water services provided, wastewater and drinking water issues and opportunities have been noted, and would need to be considered further in the future

i. Stewardship/Education

Issues	Opportunities
a) General lack of programs for adults	a) Can information be better shared amongst partners/standardize?
b) Potential need for more Provincial support	b) Can messaging around water be more centralized? Less confusing to citizens?
c) Need for continual uptake of programs and educational pieces	c) Better coordination of messaging to address priorities, e.g. basement or surface flooding, downspouts, dumping down storm catchbasins, etc. can get public to take actions that would help solve an ongoing problem, and produce more informed, accurate messaging, a better product and therefore better awareness
d) Often in times of economic downturn the outreach programs are cut or put on the table for potential cuts first since their value is often difficult to 'quantify'	d) Link outreach to risk management with associated business case (with outcomes) to rationalize budget/staff commitment
e) Often not seen as priority since outcomes/benefits not clear/quantified	e) Ability to pool efforts and money to streamline consistency - the age of the audience influences media and the appropriate approach.
f) Most education programs are underfunded and under staffed; outcome of WSP will be to encourage reduced water use towards established targets.	f) Use of a 'credit policy/program' (i.e. such as that used by the City of Kitchener Stormwater Utility Rate/Program) through a reduction in stormwater rates which encourages local homeowners and businesses to implement source controls so that impacts on stormwater runoff quantity and quality is reduced - partner with an organization like Green Communities Canada for the development and implementation of an educational component to a 'credit policy/program'
	g) Consider strategic corporate messaging and priorities to determine level of messaging

Other

i. Need to define target audience and tools for key messaging
ii. Need periodic review and update of key messaging
iii. Role for Province to lead in the development of educational resources
iv. Determine what types and messaging works then share resources (potential provincial role?)
v. Need for inter-department and inter-agency awareness of material availability and cross-referenced to the audience to which this information is presented
vi. The general public do not understand technical terminology (i.e. what a 100 year storm event means) - this limits the general public appreciation of the work being completed by municipalities
vii. There is a need for consistent messaging across municipalities and with the Conservation Authority

ii. Monitoring

Issues	Opportunities
a) General lack of co-ordination – upper and lower tier need to co-ordinate	a) Funding of respective programs can be better optimized through pooling efforts, perhaps needs a central champion/lead specifically sharing of data and analysis
b) Standards for collection (equipment, protocols) need to be harmonized for programs to be effective	b) Potential to link with radar/satellite processes across Canada and USA
c) Coverage needs to be increased to take into account spatial variability/ and increased intensity/frequency of storms (Climate Change)	c) Quality control on assumed ponds, assumption of ponds with 'design' functionality, reduction of assumed risks
d) Need consideration for broader-based sampling and meteorological data collection	d) Through sharing can reduce/spread costs and staff resource needs (MOE has new 'gateway')
e) Is sufficient analysis being completed on the data that is being collected (staff resource limitation issue) along with protocols for use/analysis	
f) Need to start monitoring stormwater management ponds prior to assumption; mechanism needs to be put in place requiring staff support and political will to require monitoring and clean out by developers	

g) Many municipalities are at differing stages of monitoring for meteorological and water quality data (ponds/receiving waters/outfalls, etc.)

h) There is a need for better understanding of what is available/objective to share/disseminate information (use of a central database) eg. the City of Kitchener is in the process of creating a central database which will include standard formats and protocols used for the data collection. The database will be available to all through the use of a data licensing agreements

i) Need to recognize scale in monitoring programs – weather (broad) versus sewer (local) performance

j) Need for consistent reporting and analysis of data being collected

iii. Operations, Maintenance and Management/Capital Planning of Water-based Infrastructure (built and natural)

Issues	Opportunities
a) Typically maintenance is insufficient in terms of scope and frequency	a) Can stormwater management infrastructure be designed more effectively to reduce maintenance (i.e. forebays, LID BMP's)
b) Need for integrated planning of water/wastewater/stormwater system Master Plans including roadway reconstruction	b) Erosion/Flood Management and resources of Municipalities and Conservation Authorities can be optimized with respect to open watercourse systems (i.e Oakville's Town Wide Flood Study, Creek Erosion Study and the Shoreline Erosion Inventory)
c) Need for resources/co-ordination with respect to major flood control systems managed by Conservation Halton/Province (future consideration of climate change)	c) Better planning for assumption responsibilities including operational budget and staff requirements

d) Improve coordination of management efforts by managing studies with inter-department/inter-agency technical teams

e) Need for training

f) Many municipalities are dealing with old infrastructure and will need to deal with retrofit of existing infrastructure – will need to be a priority

g) Need for innovation in approach to stormwater management facility maintenance

h) There is no reporting mechanism for operation/maintenance programs - the results are not disseminated to staff or other interested parties

i) Operations and Maintenance are done annually but there is 10-yr capital planning and 20-yr development charges planning – there is a need for future planning

j) Coordination/commitment between planning review/capital budgets and operations staff/budgets to effectively implement LID/alternative stormwater management approaches

d) Review by a broader number of departments (planning, development, public works, engineering, parks, etc.) can result in better understanding of assumption issues, e.g. number of ponds, state of ponds upon assumption, even possibly identifying better technical options or defining constraints early to avoid management issues later

e) Better define life cycle costs in the planning and design stages

f) Allow for prescriptive regulation of stormwater facility design / construction / management

<u>Other</u>

i. May be able to utilize the existing asset management program (most municipalities currently have one) to design/implement a operations/maintenance program

iv. Land Development/Land Use

Issues	Opportunities
a) Integrated role of urban land use planning meshing objectives of Region, Town, Conservation Halton, and Proponents continues to be protracted; streamlined processes needed	a) Forest management can have potential benefit from stronger partnership with Provincial and local stakeholders
b) Need for clarity/consistency with respect to emerging issues related to natural systems (i.e. Bobolink/wetlands/ biodiversity/species-at-risk, other ESA matters)	b) Potential to build/encourage more passive on lot measures (LID BMP's) and green infrastructure which reduces reliance and need for end-of-pipe stormwater management and improves level of impact on receiving systems – to be used to reduce demand on water supply
c) Need for training	c) Create a process for coordination (between levels of government and approval authorities) for review of planning/development applications. This may allow for flexibility with requirements during the review process
d) Development Application Review and Site Plan Review require explicit discussion and analysis (mapping out review process) since many issues relate to the ineffectiveness of existing review circulation processes both internally and externally	d) Use of surplus stormwater management facility water for industrial purposes.
e) Provincial Places to Grow intensification requirements for 'growth areas' do not seem to present many opportunities – just increasing pressure on existing infrastructure (including green infrastructure) without consideration of accompanying servicing capacity constraint	e) Prepare Official Plans to be 'water sensitive
f) Ontario government planning municipalities by numbers - conflicting information and policies between the various levels of government also with the	f) Intensification may allow for optimization of system serving operations as well as limit the potential for urban sprawl

Conservation Authorities

g) Intensification and related challenges to implementing LID BMP's at local scale

h) Pressures to place LID BMP's in natural/hazard areas (including associated allowances)

i) Importation/placement of fill at large scale to service development lands, altering infiltration rates and catchment hydrology

j) Gaps in legislative control (i.e. wording of Municipal Act with respect to Site Alteration By-laws and lands regulated under the Conservation Authorities Act).

k) Water quality concerns associated with erosion and sediment controls on construction sites.

Other

i. Corporate – top down approach is favoured - Oakville good example as well as Caledon
ii. Influence of Source Water Protection on land development differs between different areas (Oakville – Lake, versus GRCA – ground-based water supply communities)

v. Environmental Sustainability

Issues	**Opportunities**
a) How best to transition sustainability principles into tangible on-the-ground action	a) Partnering with other municipalities to develop risk-based approaches to infrastructure assessment (eg. PIEVC – Engineers Canada)
b) How best to monitor/measure success (i.e. reduced water use; increased rainwater harvesting; uptake of LID BMP's)	b) Integration/partnership with respect to other agencies and stakeholders as related to monitoring
c) Inconsistent/Diverse perspectives on Climate Change approaches and directives for building resiliency in infrastructure	c) Investigate new technologies/methods/ tools that may be available to reduce water losses, etc. Includes communications/ sharing of knowledge with other municipalities

d) Sustainability often not spread throughout municipality, poorly understood, decision-making based on narrow focus instead of broader 'pillars'

d) Identify high level clear principles at the with executives and senior management that are connected to all municipal actions; can support projects integral to WSP (builds rationale), can define linkages more clearly, e.g. to urban forest management (protection, enhancement); requires departmental heads to accept responsibility for delivering specific objectives

e) Consider developing performance indicators around sustainability including annual reporting and public consultation

Other

i. Perhaps not a specific service vs. overarching direction
ii. Consider making part of whole at a Corporate level
iii. Some municipalities are not willing to take on the issue of sustainability either due to lack of knowledge or resources

vi. Design Standards

Issues	**Opportunities**
a) Emerging issues require clarity: • Climate Change • Regional Storm Management • LID BMP Design • Flood Control • Urban Design/Zoning	a) Urban Design Guidelines need to consider more application of LID BMPs and other on-lot/building-oriented standards which reduce ecological impacts particularly to stormwater and other water-based systems; practitioners need to become directly engaged and encouraged in the design and use of LID BMP's
b) Consistency amongst Municipalities and Conservation Authorities	b) Urban design (and other) guidelines need to consider opportunities to utilize stormwater to reduce demands on the water supply (i.e. rain harvesting)
c) MOE used to develop standards and best practice manuals in consultation with municipalities that served to (i) bring forward funded innovative municipal case studies/pilots, (ii) establish a network of 'subject matter experts' with connection to MOE	c) Dialogue, fostering innovation, promoting reward for risk-taking on pilot applications, transfer of knowledge/technology

d) Development of standards that impact municipal work by external agencies without advising/consulting municipality	d) Develop standards in consultation or at least advising municipalities in order to support understanding, potential harmonization, avoidance of conflicts and improved compliance
e) Design standards that provide for equivalencies, e.g. typically used technology versus that which is less known, or technologies that may not be as effective (understood that there is move to less prescriptive approaches by the Province, but sometimes prescriptive is better, and supportive of innovation and QA/QC)	e) Specify more innovative technologies; implement better technologies (not cheaper)
f) Potential for municipal standards to be developed for future scenarios, i.e. climate change that include requirements which are different and at odds with existing Conservation Authority and Provincial permits or standards, e.g. bigger pipes/outfall, access roads to grates to deal with increased cleaning after more extreme weather events.	f) Development of a credit program through implementation of LID BMPs
g) Climate change – moving target; IDF curves difficult to adapt to a Regional scale (not sophisticated to address for potential pending change)	g) Create a ‘Made in Oakville’ approach to designing and implementing LID BMP’s specific to soil types, watershed issues and engineering standards etc.
h) Individuals not knowing what information is available from various sources and accessing information	
i) Possible conflicts between some LID BMP’s and impacts to natural areas due to loss of flows to natural areas	
j) Challenges in developing standards for LID BMP’s recognizing soil types in parts of Ontario	
k) Challenges in implementing LID BMP’s due to conflict with existing standards.	

vii. Emergency Planning Procedures

Issues	Opportunities
a) None currently known with respect to water and wastewater this is likely a gap in knowledge only Note: water and wastewater emergency plans exist however integrating water sustainability and potential climate change impacts is required	a) Excellent synergy between most municipalities and CA's on flood response and management planning: For the Town of Oakville, the Town-wide Study needs to be advanced to implementation stage; co-ordination required with MNR on criteria and standards related to Regional Storm flood control
b) Potential inconsistency between provincial guidelines and emergency response providers approach to flooded areas	b) Need to be able to better connect to educational programs and emergency planning (interaction between water based public services), and used emergency responders
c) Some local notification and warnings are not disseminated down from the various levels of government and some are not consistent – need for a more coordinated plan/approach	
d) Current emergency planning more based on operations and maintenance	
e) Watermain (sinkholes) and wastewater pipes exposure (leaks) are emerging risks	
f) Improving, updating and includes source protection findings in emergency response plans	
g) Coordination of Source Protection Plan requirements/strategy between facility operators, Town, and Region	

viii. Compliance/Enforcement

Issues	Opportunities
a) Enforcement of applicable by-laws – constrained by by-law staff resources	a) Improve coordination between jurisdictions

b) Enforcement tends to be on complaint basis only	b) Coordination between roles of Region/Conservation Authority/Municipalities (upper and lower)/MOE
	c) Consider link to spills management and response

ix. Natural Heritage/Green/Open Park Spaces

Issues	Opportunities
a) Conflicting issue between users (i.e. between passive use and recreational use (sports fields)) – difficult to agree on the level of human use	a) Share expertise between agencies on effective management practices within open spaces that benefit water resources
b) Private property ownership/management of NHS	b) Dual use – quantity control and park space
c) Need to have a way to define the value of Green Infrastructure and natural spaces; consistency required	

x. Financial/Human Resources

Issues	Opportunities
a) Service level analysis required	a) Focus on better use of existing resources
b) Funding – capital planning, staffing, operations and maintenance, and identification of other funding sources	b) Explore options for cost recovery mechanisms, infrastructure funding partnerships with provincial/federal governments

Other

i. Potentially overarching not really a service
ii. May highlight the short comings of other plans – needs to be a living document, emphasis continual improvement
iii. Crisis can become opportunity to get funding and support

xi. Other

Risk Management

Issues	Opportunities
a) Often risk management value is not given enough publicity as a rationale for work (capital, operational, etc.)	a) Factor in risk management assessment into each Water-based Public Service (level of effort/degree of assessment to match potential risk)

Jurisdictional Mandate

Issues	Opportunities
	a) Clarify mandates, points of redundancy (sometimes this is good – multi-barrier, or spread costs/risk or partnerships), points of overlaps and, importantly, gaps

Integration Opportunities

Based upon a review of the various issues and opportunities, it is apparent that there are several actions which could benefit from an integration of process or assessment, across all water services (storm, water and wastewater). Premised on this perspective, it has been suggested that going 'forward' there be consideration for the following by way of example:

- Integrated planning for water/wastewater/stormwater system master plans (including roadways) can achieve benefits (optimize/efficiency, remove duplications, long range opportunities) recognizing the challenges of working inter-departmentally, and inter-agency to achieve integration
- Potential to operational sustainability as an example to improve land use planning applying more 'water sensitive' approaches (e.g. map out and optimize Development Applications and Site Plan Review processes potentially through a Sustainability Checklist approach to make more effective)
- Transition from sustainability principles into tangible actions
- Provide for more adaptive, innovative stormwater management technologies, recognizing that the more upstream or 'on-lot' the measures, and more effective the more sustainable the measures will be in the long-term.
- Recognize, consolidate and address climate change adaptation issues, challenges and opportunities in order to move forward on adaptation planning including emergency preparedness

3.3 Project Consultation

A primary component of this study has been consultation with other similar municipalities to discuss openly on Issues and Opportunities related to the preparation of future Water Sustainability Plans, as well as the core objectives of the Water Sustainability Plan. As such,

two (2) Focus Group Sessions were held; the first was with Halton Municipalities and the second session was held with the Stormwater Discussion Group (representing southern Ontario municipalities and Conservation Authorities). The following provides a summary of those meetings (ref. Appendix C for additional details).

Focus Group Sessions - Halton Municipalities (March 14, 2012)

The first Focus Group session was held with representatives from Halton Municipalities including the Region of Halton, Town of Halton Hills, Town of Milton, City of Burlington, Conservation Halton and members of the Project Team. The purpose of the consultation was to 1) identify problems and concerns associated with the delivery of a future Water Sustainability Plan and 2) provide input on the preliminary issues and opportunities. Some key points that were discussed during the meeting, taken into consideration by the Project Team and incorporated into this report include:

- In terms of the contents of the plan under the Water Opportunities Act, a Financial Plan (26.(2)2.) represents a significant effort for municipalities. Some municipalities are already completing this as part of their internal requirements. The financial plan can be drawn from other sources or a municipal-wide Financial Plan. The work to create this plan could be a burden to some municipalities.
- Response to the statement on the Fact Sheet "*These plans will promote water efficiency as a cost effective way to generate additional water and wastewater capacity":* It does not necessarily mean that efficiencies can free up enough capacity for growth although it may free up enough for resiliency.
- It was noted that the asset management/financial plans are completed annually whereas Master Plans are typically completed every 5 years. There is opportunity to advise MOE that annual audits of the plans would be beneficial. The Clean Water Act requires annual reports, the Water Sustainability Plan could be similar. MOE will likely change to an audit process as opposed to a review process (similar to Class EA process). This could be a "living document" and annual audits could simply be reviews of the document to ensure that the policy is still in-line with the objectives of Council, other plans, etc. (Master Plans outline work programs for over 20 years or longer and are updated on a 5-year cycle. Note: Sometimes these updates are comprehensive in scope in order to integrate 5-years' worth of change and improvement in the science/technology/best practices/governance.)
- Project Charter may be a requirement of MOE as part of a Water Sustainability Plan. MOE will advise once regulations in place.

Another key component of the Focus Group Session was to review the preliminary Water-based Public Sector Matrix as well as the preliminary Issues and Opportunities. Comments received have been incorporated into the final versions presented in Section 3.2.

Focus Group Sessions - Stormwater Discussion Group (representing southern Ontario municipalities and Conservation Authorities) (April 11, 2012)

The second Focus Group session was held with representatives from the Stormwater Discussion Group including the City of Burlington, City of Cambridge, City of Hamilton, City of Kitchener, City of Mississauga, City of Oshawa, City of Peterborough, City of Pickering, City of Vaughan, City of Waterloo, Town of Caledon, Town of Halton Hills, Town of Milton, Town of Richmond Hill, Region of Waterloo, Ministry of the Environment, Grand River Conservation Authority and members of the Project Team. The purpose of the consultation was to 1) identify problems and concerns associated with the delivery of a future Water Sustainability Plan and 2) provide input on the preliminary Issues and Opportunities to potentially be addressed by future Water Sustainability Plans. In addition to the main purpose of the meeting, the following questions were also discussed during the breakout session:

i. Confirm or add to the list of water-based public services.

ii. Input on Issues and Opportunities.

iii. Input on potential future external stressors related to the delivery of water-based public services.

iv. Insight into the potential application and/or benefit of New Technologies and Practices (focus on stormwater)

Some key points discussed during the meeting and taken into consideration by the Project Team and incorporated into this summary report, including:

- Setting the benchmarks and/or standards to be achieved for a Water Sustainability Plan was discussed. It was noted that no clear direction is offered in the current documentation and that this may become somewhat clearer through the Regulations. For the time being, it has been suggested that the individual Municipalities will establish the Targets and Goals.
- It is clear that the Water Sustainability Plan will be a “living” document, and as such will need to have an update frequency attached that supports commitment of staff resources and budget allocations as required. The actual definition around this is not currently known and Ministry of the Environment will need to advise.
- There are no straightforward jurisdictional models that apply to more than a few municipal structures, (i.e. single tier or two tier). Every tier may have variations in structure, roles, responsibilities and jurisdiction, e.g. single tier – municipal only or combination of municipal and utility; two tier – any possible combination of water, wastewater, stormwater and road jurisdictional splits of treatment, distribution/collection (shared pipes), management, regulatory influences.
- Suggest that any model for Water Sustainability Plan development be positioned on a ‘flexible platform’ and reflects that a Water Sustainability Plan must incorporate an ‘adaptive management approach’ to produce a ‘living’ document to allow application to many different municipal organizations and provide for the expected pace of change, including consideration of budget changes, staffing increases or decreases, changing regulations, standards, public expectations, etc.

I. Future External Stressors

i. Climate change
ii. Growth
iii. Changing regulatory requirements
iv. Technological improvements (require operations and maintenance of wider variety of technologies)
v. Pressure to sell off public lands that have WSP value (revenue generation, political)
vi. Budgets
vii. Aging infrastructure
viii. Changing demographics/populations
ix. Competing priorities
x. Changing Provincial Policy(s)
xi. Infill and intensification
xii. Linking water/wastewater/stormwater resources to collectively work together – cumulative impacts and source to receiver watershed based approach
xiii. Increasing cost of commodities

II. New Technologies and Practices

i. If on lot controls are installed, can be subject to owner influence causing reduced or no effectiveness, out of municipal control but still has been factored into design of stormwater controls on the public side (therefore relying on controls that may not function as expected)
ii. Application of new technologies, e.g. LID BMPs need fairly specific 'matrix' application to account for effectiveness in different areas, e.g. with clay, sand, etc
iii. Still difficult to balance existing level of conservatism in design that addresses risk and the potential for on lot controls to be less effective than designed over time
iv. Treatment train approach is being implemented, under a 'no regrets' approach

4.0 RECOMMENDATIONS

4.1 General Comments

The Water Opportunities Act (WOA) has been established as a Legislative vehicle to encourage municipalities and other Water Service Providers to improve the overall efficiency / effectiveness of water-based municipal infrastructure and services. Water Sustainability Plans, which are a requirement of the WOA, provide a planning framework to allow Water Service Providers and their service partners, to evaluate a wide range of services with the core intent to deliver water services long term in a sustainable manner; key drivers include:

- Asset management,
- Financial management,
- Water conservation,
- Risk management,
- Climate Change,
- Emerging issues, and
- New technology

The identification of Issues and Opportunities (ref. Section 3 and Appendix C) provides an extensive summary of issues which can be considered as part of future Water Sustainability Plans in Southern Ontario Municipalities. While not considered exhaustive, the comprehensive summary is considered to be an excellent 'starting point' from which to initiate the process, particularly for municipalities such as the Town of Oakville who resides in a two-tier system.

Based on dialogue and feedback with the respective stakeholders to this study, the emphasis for the recommendations (this section) is focused on how best to conduct Water Sustainability Planning, given the backdrop of the issues cited in Section 3. The intent is to provide both the Ministry of the Environment and future Water Service Providers with guidance related to both the Issues and Opportunities, as well as the process going forward.

4.2 Scope and Process

As noted above, the process to preparing future Water Sustainability Plans, as a new requirement, is not yet standardized and proven. In addition, since water service providers will be different types (single tier/two tier) and provide different services (water, wastewater, stormwater), the ultimate content of the plan will be expected to vary; albeit some content should be structured such that it meets the basic requirements of the Act and the Ministry of the Environment.

In order to support in better understanding the process leading to the preparation of a Water Sustainability Plan, a flow chart, which illustrates the steps considered necessary to complete a Water Sustainability Plan has been prepared (ref. Figure 4.1).

The following provides a brief description of the key steps in the process.

Form a Project Team

- This shall include representatives from all Public Sector areas (including Public Works Operations, Recreation, Engineering, Finance, Planning and Development Services etc.), along with a Corporate representative (sustainability, environment)
- Council representatives – advantageous to have Council by-in and support, hence a member of Council may prove advantageous in the communication of the Plan to the balance of Council and the Public
- May require representatives from upper/lower tier municipalities, as well as key agencies such as the Conservation Authority, particularly given the Conservation Authorities responsibility around stormwater and Source Protection Plans

Set clear goals and objectives

- To be used in the preparation of the Project Charter
- Helps to define the project scope
- This task will need to (at a high level) outline what the anticipated outcomes will be and how they will be structured; it is anticipated that some uncertainty will exist early on in the process until tangible recommendations are advanced; stakeholders will need to work with the Project Team to focus on key outcomes

Develop Project Charter

- A sample charter has been prepared and is included in Appendix D
- The Charter is intended to form a high level agreement amongst the respective stakeholders and the Project Team; as the project advances it may need to be revisited and possibly amended

Develop a Communications Plan

- Will need to include general public consultation (i.e. in the form of newsletter, public events, workshops, social media etc.) and consultation with outside agencies (i.e. Conservation Authorities, Ministries, etc.)
- Key elements of the Communication Plan can be found in Section 5.4

Conduct Review of Existing Programs, Policies, Guidelines, etc. – as related to Water Services – both internal to the organization and external (i.e. upper/lower tier municipality, Conservation Authority etc.)

- Will need to review respective programs, policies, guidelines from all public service departments and from various levels of government (upper/lower tier municipalities, provincial governments) which will ultimately include process mapping defining gaps and overlaps

- Information will need to be gathered on relevant information to the goals and objectives as defined in the Project Charter of the Water Sustainability Plan
- This information is expected to come from a variety of sources; as noted in the Background section, Water Services Providers are not expected to re-do existing plans such as Asset Management Plans, but rather relevant information from these plans should be extracted and summarized, as related to the goals and objectives of the Water Sustainability Plan

Identify Issues and Opportunities

- The project team will need to conduct a detailed review and analysis of the various information etc. to determine key issues and opportunities, with a view to building upon the information contained in Section 3, unique to its respective jurisdiction and structure
- These Issues and Opportunities would (once reviewed and vetted with the Public and other Stakeholders) ultimately provide the template/framework for the development of the Water Sustainability Plan; existing plans (as noted above) can be paraphrased and appended accordingly

Priority Setting

- A long-list of opportunities and issues developed in consultation with area stakeholders and agencies will need to be prioritized; the objective in this regard will be to focus on those issues and opportunities which provide the greatest return on investment of staff time and financial resources; accordingly it will be important to establish appropriate matrices, unique to the local community values and the water services it provides, in order to establish a mechanism for prioritization.

Key Recommendations

- From the assessment and consultation process, a set of Issues and Opportunities will have been developed which will ultimately need to be connected into tangible actions
- These recommendations should focus on both short and long term, and include those which would be implemented directly by the Public Water Service Provider as well as those that would require partnering
- It is fully expected that the ultimate plan would have a shelf-life (likely 5 years +/-) and will need to be periodically updated taking stock of achievements and new direction

4.3 Key Components of a Water Sustainability Plan

In order to assist future water service providers, the following section has been prepared to outline some of the more formative components of future Water Sustainability Plans. It should be noted that the outcomes of a WSP may lead to both short and long term recommendations to improve overall sustainability.

In order to remain consistent with the Water Opportunities Act and the future Regulations both should be reviewed during the Water Sustainability Plan preparation process to ensure consistency; currently (in advance of the Regulations) the core content includes:

i. An asset management plan for the physical infrastructure.

ii. A financial plan.

iii. If the municipal service is a municipal water service, a water conservation or efficiency plan.

iv. An assessment of risks that may interfere with the future delivery of the municipal service, including, (if required by the regulations), the risks posed by climate change and a plan to deal with those risks.

v. Strategies for maintaining and improving the municipal service, including strategies to,

   a. ensure the municipal service can satisfy future demand,

   b. consider technologies (possible innovations), services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and

   c. increase co-operation with other municipal service providers.

vi. Other information as may be prescribed relating to the provision of the municipal water service.

Based on the consultation efforts during the course of this study, the following are considered important elements to be addressed in a future Water Sustainability Plan:

- Co-ordination of funding between different levels of government; need for long-term sustainable models.
- Sharing of information which has an impact on other organizations.
- Need to co-ordinate and optimize monitoring efforts.
- Consistent messaging amongst all levels of government to bring awareness and understanding to stakeholders at all levels.
- More effective and focused Operations and Maintenance of water services; better tied to capital budgets.
- Staff resource requirements.
- Need to align with other municipal plans to ensure consistency across the municipality.
- How best to transition sustainability principles into tangible on-the-ground actions and targets.
- Identifying the key inter-related issues, systems, programs, procedures, design standards etc. across disciplines/departments/agencies in order to maximize efficiency and resiliency.
- Measures/actions to be taken to ensure that the Water Sustainability Plan will remain a vibrant and evolving document that continues to provide value over time.

4.4 Status of Water Sustainability Planning for the Town of Oakville

Through this Water Sustainability Planning study, it has become evident that the current Oakville/Halton structure matches well in delivering (or planning to deliver) the requirements of the WOA across many required elements. In particular, at the highest policy level all

municipalities in Halton have developed (and are working on) integrated community sustainability planning. An inter-departmental and inter-agency approach to matters related to water sustainability is becoming more conventional (the norm) and the work carried out in the development of this study has provided a solid foundation for continuous improvement going forward.

4.5 Coordination between the Town of Oakville and the Region of Halton (and others)

As the Town of Oakville moves to sustainable water service delivery model for its citizens, the integrated partnership with the Region of Halton and Conservation Halton in particular needs to be maintained and strengthened. Through staff-based experience in sustainability planning and related service delivery, the following "lessons learned' have been derived through this study which provides good guidance for others in a similar two tier structure:

- Regular communication is key to coordinating existing work programs;
- Inter-departmental/agency 'steering or technical' teams required for new project management support coordination/integration goals;
- Discuss new work/programs as early as possible, as broadly as possible to clarify opportunities to integrate/coordinate before the new work/programs are developed/established;
- Allocate time for integration/coordination in work planning since this often takes more time than is usually scheduled
- Define who is responsible for water management at all levels
- Interagency linkages improvement
- Interdepartmental linkages improvement
- Process mapping – first time for detailed discussion of what municipal staff has to deal with from a ground level context for a sophisticated two tier system (insight into the complex issues faced by municipal staff).

5.0 IMPLEMENTATION AND NEXT STEPS

The information compiled in this report as related to Issues and Opportunities associated with Water Service Sustainability, as well as recommendations in regards to the process, format and content of future Water Sustainability Plans is intended to inform the Ministry of the Environment and other project partners "going forward" in conducting Water Sustainability Planning. In order to assist the Ministry of the Environment in this process, information has been assembled (based on the Town of Oakville example and related consultation) on:

- Related Acts and Processes
- Input to Regulations
- Cost Estimates for Water Sustainability Plan Preparation
- Communications Plan Content

5.1 Related Acts and Processes

Based on stakeholder consultation, it is evident that various components of a Water Sustainability Plan may already be conducted as part of other regulatory requirements. The Stakeholder Group noted that, especially for smaller municipalities, it is important that the duplication of efforts is minimal. The following is a description of the specific Acts identified which may have an overlap or at least related requirements to the Water Opportunities Act.

Safe Drinking Water Act

The purpose of the Safe Drinking Water Act is to protect human health through the control and regulation of drinking-water systems and drinking-water testing. The Safe Drinking Water Act requires that all municipal drinking water systems obtain an approval from the Director of the Ministry of the Environment in order to operate. Operators are required to be trained and certified to provincial standards. The Act also provides legally binding standards for testing of drinking water and requires that testing be done in licensed and accredited laboratories.
(ref. http://www.ene.gov.on.ca/environment/en/legislation/safe_drinking_water_act/index.htm)

Clean Water Act and Source Water Protection

Ontario's Clean Water Act through Source Water Protection helps protect drinking water from source to tap with a multi-barrier approach that stops contaminants from entering sources of drinking water - lakes, rivers and aquifers.

Ontario's Clean Water Act:

- Requires that local communities - through local Source Protection Committees - assess existing and potential threats to their water, and requires these to set out and actions implemented to reduce or eliminate potential threats
- Empowers communities to take action to prevent threats from becoming significant
- Requires public participation on every local source protection plan - the planning process for source protection is open to anyone in the community
- Requires that all plans and actions are based on sound science.
  (ref. http://www.ene.gov.on.ca/environment/en/legislation/clean_water_act/index.htm)

Ontario Water Resources Act

The Ontario Water Resources Act is designed to conserve, protect and manage Ontario's water resources for efficient and sustainable use. The act focuses on both groundwater and surface water throughout the province. The Water Resources Act regulates sewage disposal and "sewage works" and prohibits the discharge of polluting materials that may impair water quality. The act was also designed in part to protect the province's water resources from industrial and commercial users who might draw more water out of provincial aquifers than they can reasonably sustain. Permits to take more than 50,000 litres of water per day from ground or surface water sources are regulated under the Water Resources Act. The Water Resources Act also regulates well construction, well operation and abandonment, and the approval, construction and operation of all waterworks.
(ref. http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o40_e.htm)

Environmental Protection Act

The Environmental Protection Act is Ontario's key legislation for environmental protection. The Act grants the Ministry of the Environment broad powers to deal with the discharge of contaminants which cause negative effects. The act specifically:

- Prohibits the discharge of any contaminants into the environment which cause or are likely to cause negative effects - and in the case of some approved contaminants requires that they must not exceed approved and regulated limits
- Requires that any spills of pollutants be reported and cleaned up in a timely fashion.

The Act also deals with commercial transactions involving contaminated land. Ontario's Environmental Protection Act has the authority to establish liability on the party which is at fault, including liability for corporate officers or directors who have failed to take all reasonable care to prevent unlawful discharges of contaminants into the environment.
(ref. http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e19_e.htm)

Nutrient Management Act

The Nutrient Management Act was designed to reduce the potential for contamination of water and other natural resources by some agricultural practices. The act requires that Ontario's farm practices use nutrients wisely so that nutrients such as nitrogen, phosphorus and potassium can provide economic benefit with minimal impact on the environment. The Nutrient Management Act establishes the framework for best practices in nutrient management (particularly in managing manure) and creates standards which give best management practices the force of law. The act also provides standards for how nutrients are stored and how nutrients are applied to farmland, so that the likelihood of ground or surface water contamination can be reduced.
(ref. http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_02n04_e.htm)

Sustainable Municipal Water Management: Measuring Progress and Reporting Publically Great Lakes and St. Lawrence Cities Initiative

In the face of the cumulative impacts associated with urbanization, intensive agricultural activity, and climate change, municipalities are increasingly embracing an integrated approach to water management that captures the full spectrum of a community's impact on water. This approach

cuts across traditional municipal delivery areas, to include infrastructure design and operations, land use planning and approvals, public education and participation, emergency planning and response, pollution prevention, and habitat and shoreline restoration.

This shift in water management, from a narrower operational focus on water service delivery and wastewater treatment, to a broader notion of 'sustainable water management' marks a change that is already taking place within Cities Initiative member municipalities, one that will take time to fully adopt, involving continuous improvement, innovation and evaluation. The Great Lakes and St. Lawrence Cities Initiative has developed a framework to reflect the new integrated approach.
(ref. http://www.glslcities.org/initiatives/greencities/smwm.cfm)

Elements of the foregoing would conceivably find overlap in a Water Sustainability Plan prepared under the Water Opportunities Act. These components (where there may be duplicates) need not be repeated; however it will be important to ensure that the respective requirements remain consistent within the provisions of the Act and the related regulations.

5.2 Input to Regulations

As noted earlier, the study stakeholder consultation process yielded some insight into potential considerations which could be included in the Regulations. As of the writing of this report, the Regulations to support the Water Opportunities Act (2010) had yet to be released. The following is brief description of some insight that could be considered in the development and consultation for any Regulations.

Inclusion of a Project Charter
It is becoming more common place for major projects to formalize stakeholder relationships, deliverables, and schedules through a Project Charter. A Project Charter allows all parties involved (stakeholders) to reach agreement and document major aspects of the project such as the objectives, the scope, the deliverables, and the resources required prior to initiation and on an on-going basis throughout the study. The charter is intended to support the decision-making process and is also often used as a communication tool. A sample Project Charter for a Water Sustainability Plan has been drafted and can be found in Appendix D.

Commentary on the Steps Taken by the MOE in the Preparation of the Regulation
Background information or commentary on the process that the Ministry of the Environment ultimately takes as related to the preparation of the Regulation would be beneficial to municipal staff tasked with preparing a Water Sustainability Plan. This level of transparency will allow for a municipal representative's to gain a valuable understanding of the rationale behind the various elements of the Regulation.

Public Education/Outreach Program to Municipalities
A component of the release of the Regulations should include an education opportunity for municipalities who will ultimately be preparing and implementing a Water Sustainability Plan. This will help with the roll out of the Regulations and improve the ability of municipalities to successfully implement both the Regulations and the Act, in the form of a practical Water Sustainability Plan.

Need to Reduce Duplication of Efforts (ie. Financial Plan)
Some of the Water Sustainability Plan requirements outlined in the Act are already being completed as requirements for other MOE Acts and Regulations or other standard municipal processes such as the development of a Financial Plan. In order for municipalities to meet these requirements, it would be beneficial to use existing plans or documents to meet the requirements of the Water Opportunities Act and associated regulation. This is especially important for smaller municipalities who are working with minimal budgets and staff resources.

Define Timeframe for Renewal/Update (i.e. every five years)
A timeframe for renewal/update of the Water Sustainability Plan (as a "living document) will be important to define within the Regulations. As such, the municipality will update the Plan on a regular basis depending on programs and changes occurring within the municipality.

Identify Responsibility for Setting Clear Targets and Use of Defined Standards
It will become necessary during the development of a Water Sustainability Plan to define clear targets and goals founded on appropriate and acceptable standards and science. The Regulations should clearly outline who is responsible for setting the targets and goals as well as an approval mechanism if required. Uncertainty remains with respect to the achievable benchmarks for a Water Sustainability Plan and what in fact constitutes water sustainability; additional insight and guidance will be required from the MOE on the associated metrics to measure success, especially if the MOE intends to roll up the municipal Water Sustainability Plan outcomes to report on the impact of the Act and Regulations (e.g. Water consumption improvements, etc.).

5.3 Cost Estimates for Water Sustainability Plan Preparation

The cost associated with the development of a Water Sustainability Plan will be dependent on various factors including:

- *Size of the Municipality* – the population and size of the municipality and its water infrastructure will affect the extent and complexity of the plan.
- *Water Services Provided* – depending on the level of government, the services provided may include water, wastewater and/or stormwater management. There may also be an important variation in the type of systems, such as a groundwater-based water supply vs. a lake based water supply which changes the sensitivity of the resource.
- *Extent of Capacity Required* – based on the state of historical development and the amount of pending development (i.e. Municipal maturity) the need for and amount of system capacity as well as opportunities to address deficiencies will vary widely.
- *Municipality's Commitment to Sustainability* – Some Municipalities have already embraced the concept of Sustainability and as such have already incorporated the concept in overarching strategies guiding many municipal practices. For other municipalities with limited financial and human resources, this may not have occurred and hence would be more difficult to incorporate the concept of Water Sustainability into existing and future programs.

- *Amount of Water Sustainability Planning elements already completed* – Some Municipalities will have already completed some or many of the elements identified to be required for a WSP and this will affect the level of effort and associated cost required to produce a plan.

Various tasks are necessary during the preparation of a Water Sustainability Plan; which would involve external technical support services as well as internal staff resources. The following provides some approximate guidance with potential budgeting for these services:

External Support	Municipal Size		
	<20 k	20 k to 200k	> 200k
1. Engagement of Project Team	$5,000	$10,000	$20,000
2. Background Research (Data Collection and Review)	$17,500	$40,000	$65,000
3. Issues and Opportunities Scan	$15,000	$35,000	$50,000
4. Stakeholder Consultation *	$5,000	$10,000	$15,000
5. Priority Setting	$7,500	$10,000	$15,000
6. Plan Formulation (Draft)	$20,000	$30,000	$50,000
7. Broad Consultation (includes Public and Council) *	$5,000	$15,000	$25,000
8. Finalize Water Sustainability Plan	$32,500	$55,000	$80,000
	$107,500	$205,000	$320,000

NOTE: * Level of consultation will be determined by community.

Municipal Resources	Municipal Size		
	<20 k	20 k to 200k	> 200k
1. Preparation of Terms of Reference	$3,000	$5,000	$7,500
2. Support Background Research (Data Collection and Review)	$5,000	$10,000	$15,000
3. Stakeholder Consultation *	$5,000	$10,000	$15,000
4. Priority Setting	$5,000	$7,500	$10,000
5. Support during Water Sustainability Plan preparation	$15,000	$25,000	$40,000
6. Annual review and update	$5,000	$10,000	$15,000
	$38,000	$67,500	$102,500

NOTE: * Level of consultation will be determined by community.

Clearly there will be many factors to consider in budgeting for plan preparation as noted above, however these figures are considerable reasonably representative. In addition, it is noteworthy and important to recognize that the WSP itself will generate additional effort through implementation which will draw on both internal and external resources to realize. The amount

of financial and human resources though for implementation is near impossible to estimate at this stage, however, it could be significant and will be important to budget. It has been considered that the above estimates could fluctuate +/- 30% from the amounts estimated.

Town of Oakville Cost Estimate

As part of this project, a cost estimate for the Town of Oakville has been prepared. The following estimate is based on the information collected and interpreted through this study, particularly the recognition of the level of Sustainability Planning already taking place at the Town. The Town of Oakville is considered to have taken many steps towards the preparation of a Water Sustainability Plan and as such is considered in an advantaged position to deliver such a plan. As part of this study, the Town of Oakville has largely completed Steps 1 to 4 under External Support.

External Support

1.	Engagement of Project Team	$10,000	(largely completed)
2.	Background Research (Data Collection and Review)	$40,000	(largely completed)
3.	Issues and Opportunities Scan	$35,000	(largely completed)
4.	Stakeholder Consultation	$12,000	(largely completed)
5.	Priority Setting	$10,000	
6	Plan Formulation (Draft)	$35,000	
7.	Broad Consultation (includes Public and Council)	$15,000	
8.	Finalize Water Sustainability Plan	$50,000	
		$207,000	

Municipal Resources

1.	Preparation of Terms of Reference	$5,000	(largely completed)
2.	Support Background Research (Data Collection and Review)	$10,000	(largely completed)
3.	Stakeholder Consultation	$15,000	
4.	Priority Setting	$5,000	
5.	Support during Water Sustainability Plan preparation	$30,000	
6.	Annual review and update	$8,000	
		$73,000	

5.4 Benefits to Preparing a Water Sustainability Plan

Water Sustainability Plans by their very nature are intended to assist Municipalities and their citizens in:

- Protection of water resources
- Managing human impacts to resources
- Enhancing existing water resources
- Delivering services in a financially responsible manner
- Communicating benefits and actions to and by the public
- Maintaining water assets (operationally and fiscally)
- Minimizing risks from future stressors, known and unknown by building capacity
- Planning for future needs

The benefits derived to the Town and its partners will lead to an overall improvement in water service delivery.

5.5 Communication Plan

In order to effectively *prepare* and *implement* a Water Sustainability Plan, it will be necessary to communicate with a broad section of stakeholders and public. A Communication Plan is a written document that is prepared during the initial stages of a project which is a vehicle to guide both the preparation and eventual implementation of Water Sustainability Plan actions. The content of a Communications Plan for Water Sustainability Plan preparation is to include:

- What you want to accomplish with your associated communications (objectives),
- Ways in which those objectives can be accomplished (goals or program of work),
- To whom communications will be addressed (audience),
- How you will accomplish your objectives (tools and timelines), and
- How you will measure the results of the program (evaluation).

The key steps in preparing a Communications Plan are described in more detail below.

Define Goals and Objectives
Defining the goals and objectives will help to focus the Communications Plan on the key Water Sustainability Plan elements such including the who, why, when, and how?

Define Target Audiences
Defining the audience is important as not all parties will respond the same to various forms of communication. There are a wide range of audiences that may need to be involved in the project ranging from agencies, elected officials, community stakeholders, and the general public. The more clearly defined the target audience is, the more cohesively the message and strategy can be communicated. During the preparation of a Water Sustainability Plan, the target

audience will have to include staff from the various levels of government, key agency staff including the Conservation Authority, department staff, community stakeholders (i.e. Environmental Advisory Group), and the general public. The level of involvement will need to be defined early on in the process.

Identify Key Messages

In the development of the key messages, it will be necessary to take into consideration the goals and objectives as well as the target audience. The key messages should be clear and concise and clearly documented in the Communication Plan. It may be necessary to revisit the key messages during the project to reassess their effectiveness to ensure that the overall goals and objectives are being met. In the case of the Water Sustainability Plan, the key messages will focus on input and participation from the public and stakeholders.

Identify Tools and Strategy

There are numerous communication vehicles that can be used in a Communications Plan including:

- Paid Advertising (i.e. newspaper)
- Print Material (i.e. brochures)
- Media Relations (i.e. new releases)
- Public Service Announcements
- Community Relations (i.e. direct mail out or public meetings)
- Organization/Corporate Communications (i.e. special events)
- Internal Communication (i.e. internal newsletters)
- Social Media (i.e. Facebook)

It is important to select a communications vehicle commensurate with available resources designed to reach the target audiences and influence them with the key messages. The public and stakeholders should be aware of the various communication vehicles proposed and the timeline for implementation.

Evaluate the Results

As with any project it will be necessary to define the effectiveness of the Communication Plan (i.e. has all of the goals and objectives been met?). At the onset of the project the way in which success is measured will need to be defined. During Water Sustainability Plan preparation, important metrics will include (for example) was the messages clear and understood by the target audience? Was the appropriate communication vehicle used? By evaluating the effectiveness of the Communications Plan, it is possible to determine how smoothly input to the plan was provided with the various audiences, which activities had the most input, and which aspects of the plan did not work as well. During the preparation of a Water Sustainability Plan, an evaluation of the plan may be required at various project milestones to identify if the Communication Plan continues to be effective or needs to be revised to better meet the goals and objectives.

As noted in the foregoing, a Communications Plan will be a vital part of the Water Sustainability Plan to facilitate broad-scale input to plan preparation. Another aspect of Communication will relate to the eventual implementation of plan recommendation and actions. Those that affect the Public and key Stakeholders will be particularly important to message appropriately. As such, it is considered a standalone requirement of the eventual Water Sustainability Plan to include a Communications Plan directed as Plan implantation. The Town of Oakville's Public Engagement Guide sets the Town's commitment to public engagement and will be an effective tool in the development of a comprehensive communications plan as a component of the Water Sustainability Plan.

Figure 2.1 Town of Oakville
Jurisdictional Boundary

Figure 2.2 Town of Oakville Water Framework

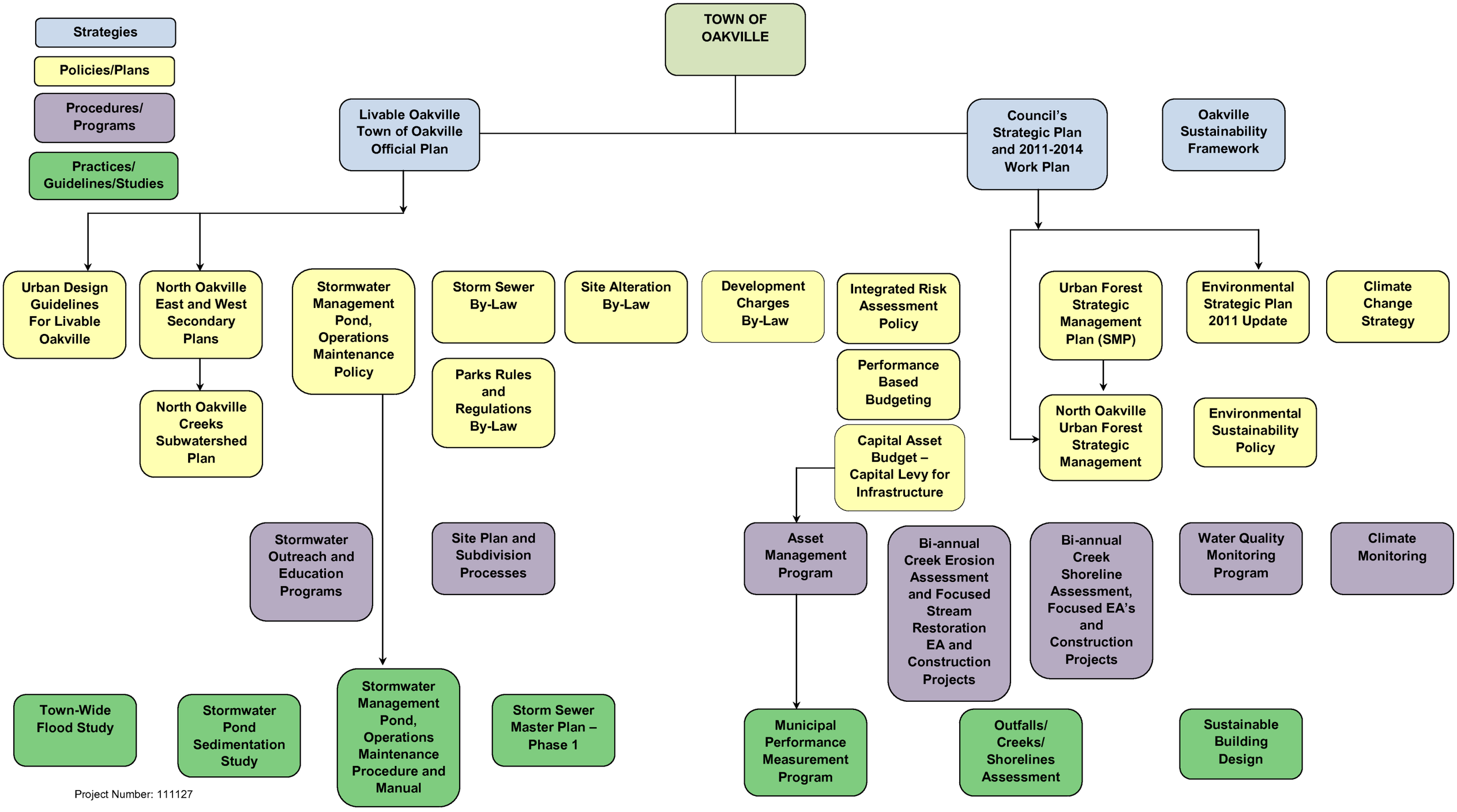


Figure 2.3 Region of Halton Jurisdictional Boundary

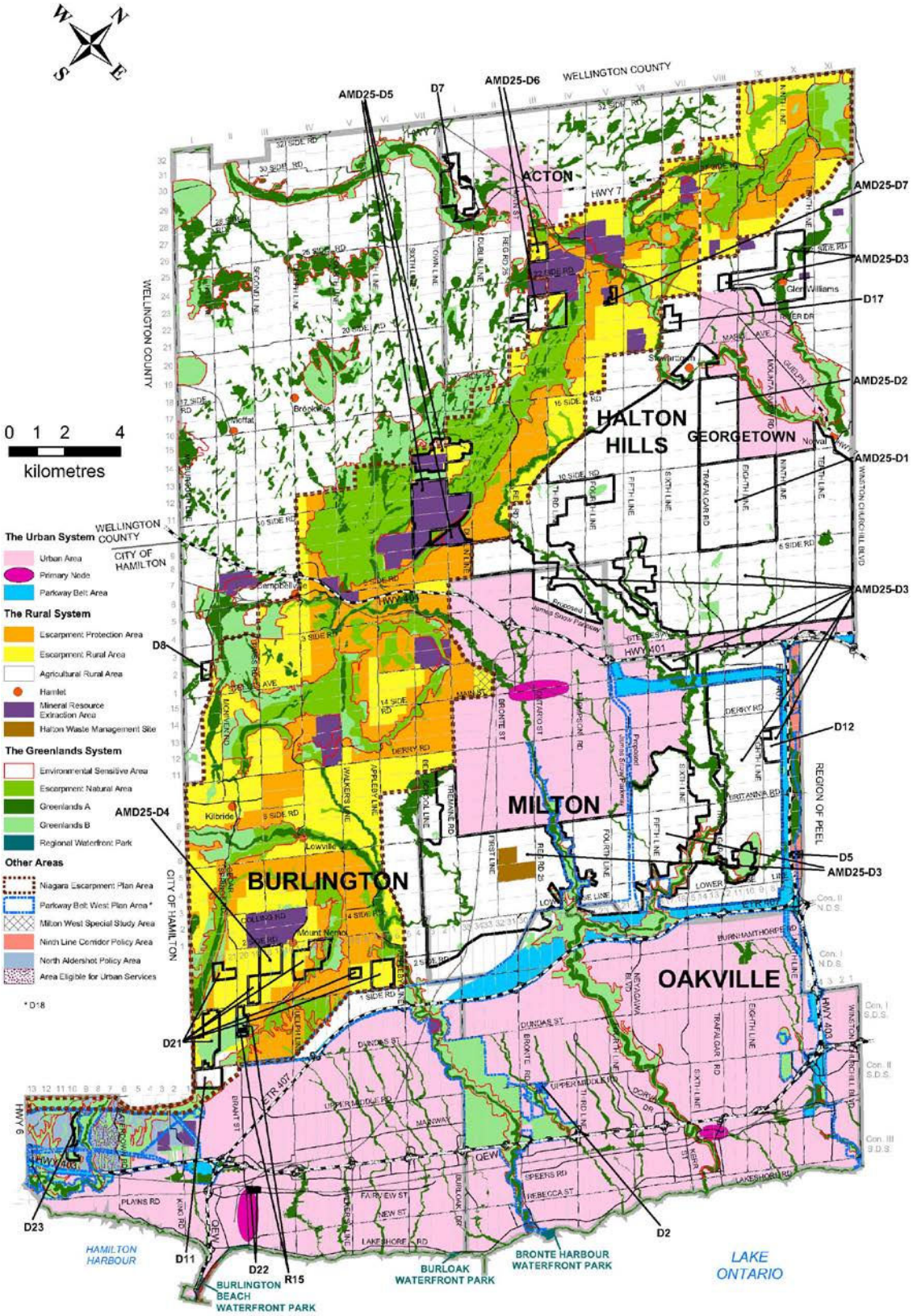


Figure 2.4 Region of Halton Water Framework

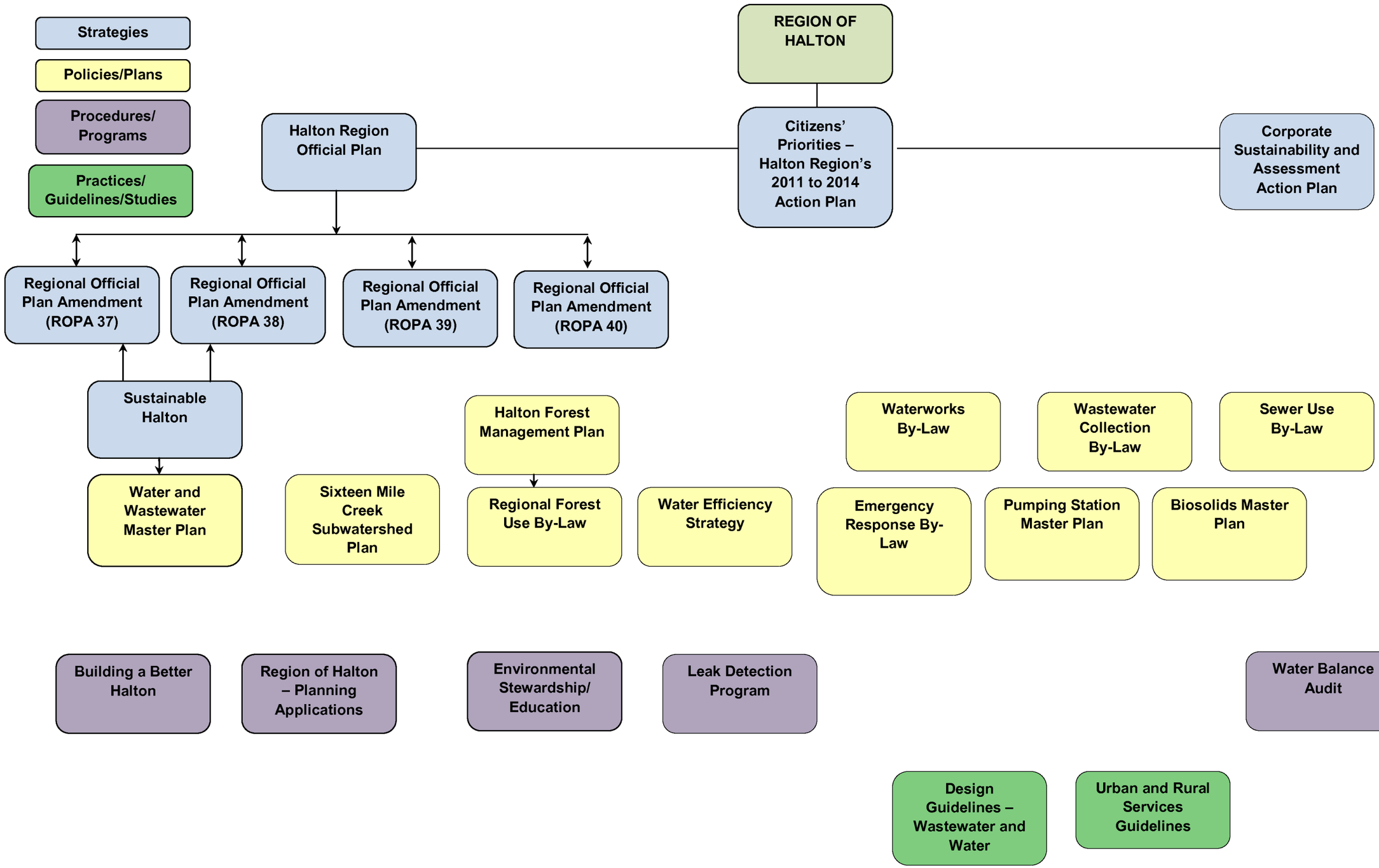


Figure 2.5 Conservation Halton
Jurisdictional Boundary

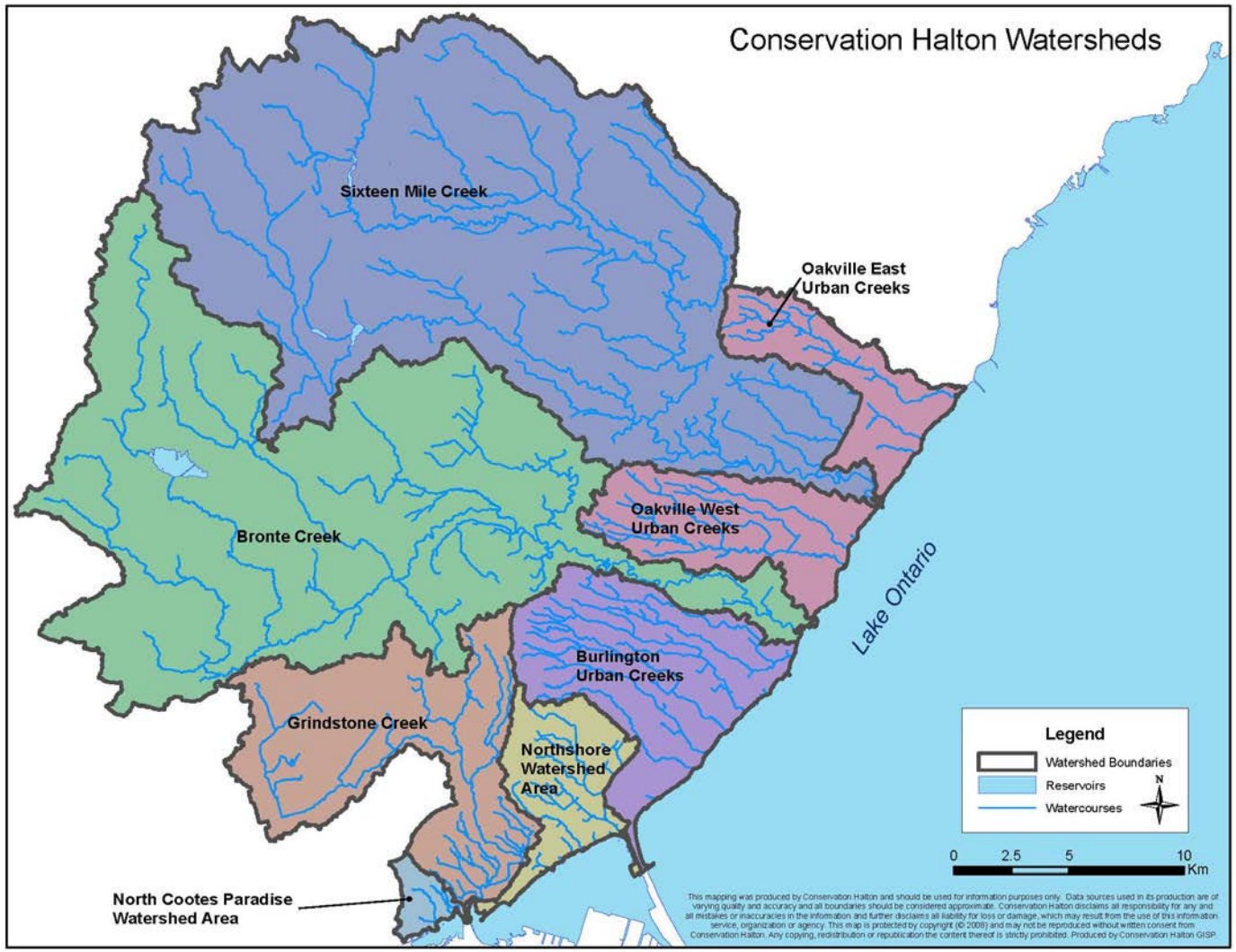


Figure 2.6 Conservation Halton Water Framework

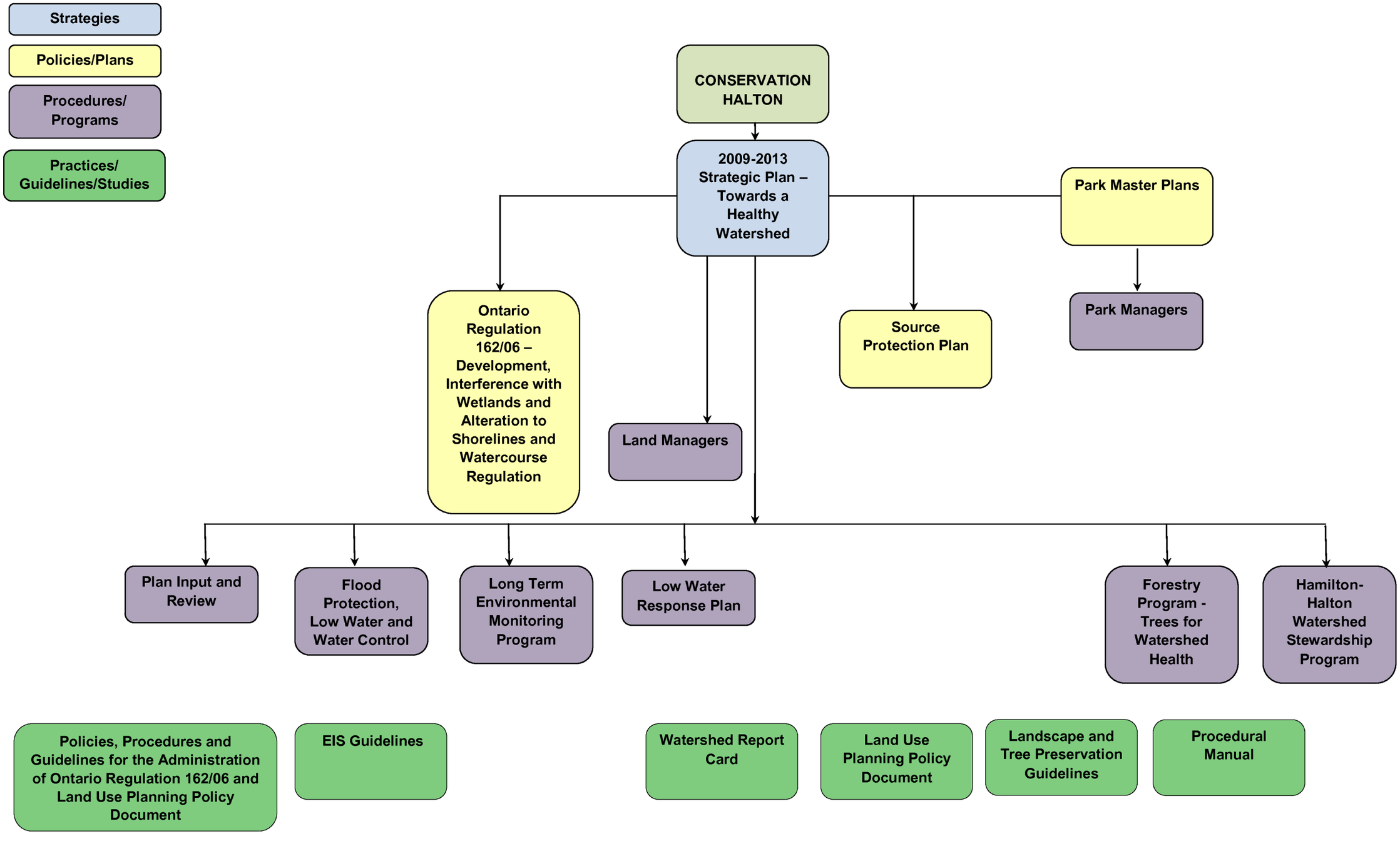
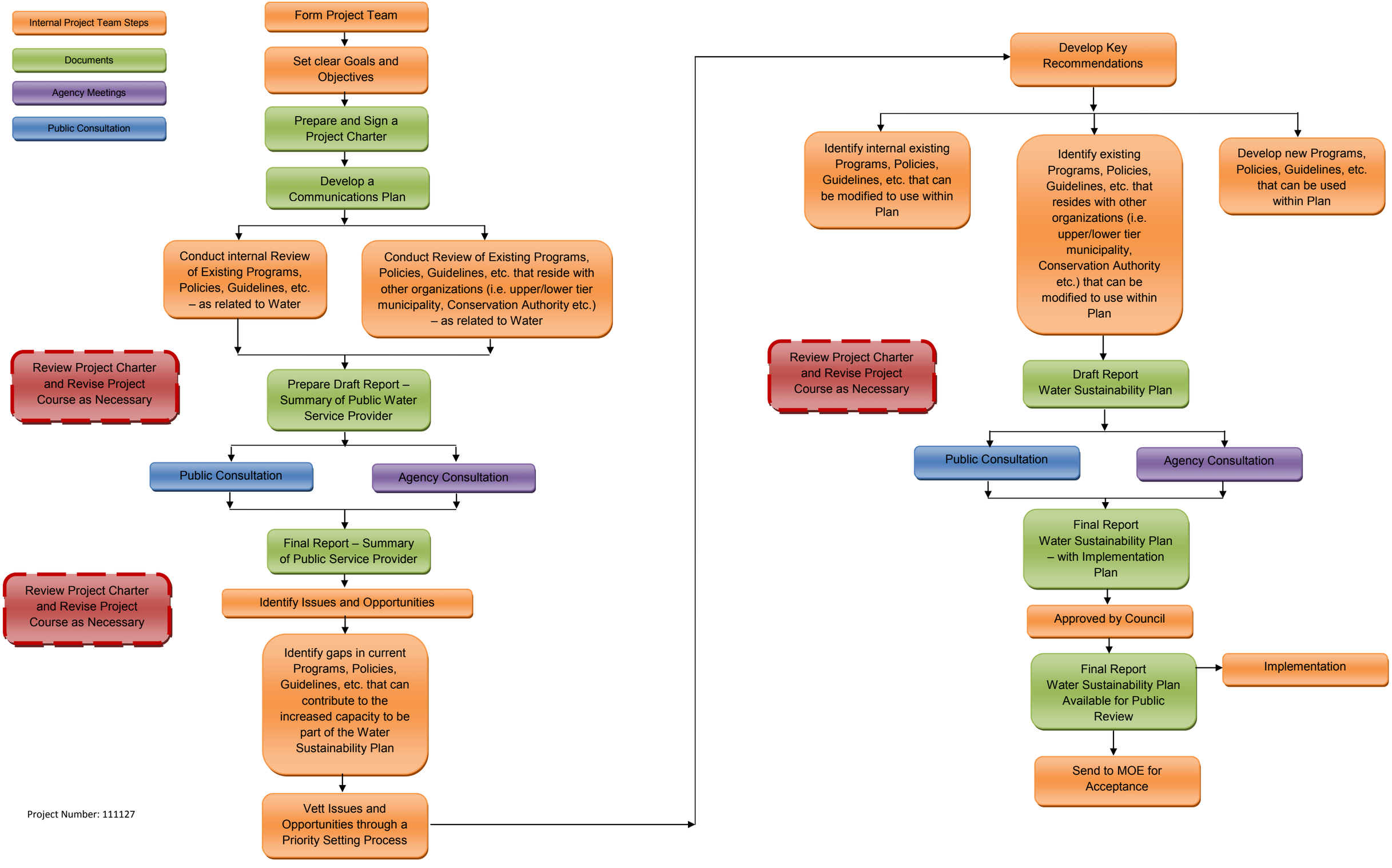


Figure 4.1 Water Sustainability Plan Process Framework



APPENDIX 'A1'
WATER OPPORTUNITIES ACT (2010)

Ontario

ServiceOntario
e-Laws

Français

Water Opportunities Act, 2010

S.O. 2010, CHAPTER 19
SCHEDULE 1

Consolidation Period: From March 2, 2011 to the e-Laws currency date.

Last amendment: 2010, c. 19, Sched. 1, s. 45.

SKIP TABLE OF CONTENTS

CONTENTS

PART I
PURPOSES AND TARGETS

Purposes

1. (1) The purposes of this Act are,

(a) to foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;

(b) to create opportunities for economic development and clean-technology jobs in Ontario; and

(c) to conserve and sustain water resources for present and future generations. 2010, c. 19, Sched. 1, s. 1 (1).

Same

(2) For greater certainty, the purposes of this Act do not include the privatization of publicly owned water, wastewater and stormwater services. 2010, c. 19, Sched. 1, s. 1 (2).

Targets

2. (1) The Minister of the Environment may, to further the purposes of this Act, establish aspirational targets in respect of the conservation of water and any other matter the Minister considers advisable. 2010, c. 19, Sched. 1, s. 2 (1).

Publication

(2) The Minister shall publish targets established under this section on the environmental registry established under section 5 of the *Environmental Bill of Rights, 1993*, together with a summary of the information the Minister relied on to establish each target. 2010, c. 19, Sched. 1, s. 2 (2).

Other targets

(3) The authority to establish targets under this section is in addition to any other authority to establish targets under this Act. 2010, c. 19, Sched. 1, s. 2 (3).

PART II
WATER TECHNOLOGY ACCELERATION PROJECT

Definitions

3. In this Part,

"board" means the board of directors of the Corporation; ("conseil d'administration")

"Corporation" means the corporation established in section 4; ("société")

"Minister" means the Minister of Research and Innovation or any other member of the Executive Council to whom responsibility for the administration of this Part is assigned or transferred under the *Executive Council Act*; ("ministre")

"regulations" means the regulations made under this Part; ("règlements")

"wastewater" includes stormwater. ("eaux usées") 2010, c. 19, Sched. 1, s. 3.

Corporation established

4. A corporation without share capital is hereby established under the name the Water Technology Acceleration Project in English and Projet de développement accéléré des technologies de l'eau in French. 2010, c. 19, Sched. 1, s. 4.

Objects

5. The objects of the Corporation are,

(a) to assist in promoting the development of Ontario's water and wastewater sectors;

(b) to assist Ontario's water and wastewater sectors by increasing their capacity to,

(i) develop, test, demonstrate and commercialize innovative technologies and services for the treatment and management of water and wastewater, and

(ii) expand their business opportunities nationally and internationally;

(c) to provide a forum for governments, the private sector and academic institutions to exchange information and ideas on how to make Ontario a leading jurisdiction in the development and commercialization of innovative technologies and services for the treatment and management of water and wastewater;

(d) to encourage collaboration and co-operation in Ontario's water and wastewater sectors;

(e) if requested by the Minister, assist in the development of certification, labelling and verification programs for water and wastewater technologies and services;

(f) to provide the Minister with advice on what actions the Government of Ontario should take to assist in fostering the development of Ontario's water and wastewater sectors; and

(g) to carry out the other objects that may be prescribed by the regulations. 2010, c. 19, Sched. 1, s. 5.

Members

6. The members of the Corporation shall consist of the members of its board of directors. 2010, c. 19, Sched. 1, s. 6.

Board of directors

7. The Corporation shall have a board of directors that shall manage or supervise the

management of the affairs of the Corporation. 2010, c. 19, Sched. 1, s. 7.

By-laws

8. The board may make by-laws governing the management of the Corporation and the conduct and administration of the Corporation's affairs. 2010, c. 19, Sched. 1, s. 8.

Powers

9. The Corporation has the capacity and the rights, powers and privileges of a natural person, subject to the limitations set out in this Part or prescribed by the regulations. 2010, c. 19, Sched. 1, s. 9.

Business planning

10. (1) At least 90 days before the beginning of each fiscal year, the board shall adopt a business plan for the fiscal year. 2010, c. 19, Sched. 1, s. 10 (1).

Contents

(2) The business plan must include the following information:

1. A description of the major activities and the objectives of the Corporation for the year and for following years.
2. A description of the policies and strategies of the Corporation to achieve those objectives.
3. A description of the budget of the Corporation for achieving those objectives.
4. Such other information as may be required by the Minister. 2010, c. 19, Sched. 1, s. 10 (2).

Employees and other assistance

11. (1) The Corporation may enter into agreements with any Minister of a Ministry or the head of any Crown agency to have employees of the Crown employed in that Ministry or employees of that Crown agency, as the case may be, provide services to the Corporation. 2010, c. 19, Sched. 1, s. 11 (1).

Professional assistance

(2) The Corporation may,

(a) engage persons, other than those mentioned in subsection (1), to provide professional, technical or other assistance to or on behalf of the Corporation; and

(b) establish the terms of engagement and provide for the payment of the remuneration and expenses of the persons engaged under clause (a). 2010, c. 19, Sched. 1, s. 11 (2).

Directives of the Minister

12. (1) The Minister may issue directives in writing to the Corporation on matters relating to the exercise of its powers or duties. 2010, c. 19, Sched. 1, s. 12 (1).

Implementation

(2) The board shall ensure that the directives issued to the Corporation are implemented promptly and efficiently. 2010, c. 19, Sched. 1, s. 12 (2).

Organization of conferences and programs

(3) Without limiting the generality of subsection (1), the Minister may direct the Corporation to assist ministries of the Government of Ontario or Crown agencies in organizing conferences and other programs relating to Ontario's water and wastewater sectors. 2010, c. 19,

Sched. 1, s. 12 (3).

Application of the *Corporations Act*, *Corporations Information Act*

13. The *Corporations Act* and the *Corporations Information Act* do not apply to the Corporation, except as prescribed by the regulations. 2010, c. 19, Sched. 1, s. 13.

Note: On the later of the day section 13 comes into force and the day subsection 4 (1) of the *Not-for-Profit Corporations Act, 2010* comes into force, section 13 is repealed and the following substituted:

Application of *Not-for-Profit Corporations Act, 2010*, *Corporations Information Act*

13. The *Not-for-Profit Corporations Act, 2010* and the *Corporations Information Act* do not apply to the Corporation, except as prescribed by the regulations. 2010, c. 19, Sched. 1, s. 45 (3).

See: 2010, c. 19, Sched. 1, ss. 45 (3).

No personal liability

14. (1) No action or other proceeding shall be instituted against a member of the board or an officer, employee or agent of the Corporation for any act done in good faith in the execution or intended execution of any duty imposed or power conferred by this Part or the regulations, the by-laws of the Corporation or under a directive issued under section 12 or for any alleged omission in the execution in good faith of that duty or power. 2010, c. 19, Sched. 1, s. 14 (1).

Liability of the Corporation

(2) Subsection (1) does not relieve the Corporation of any liability to which it would otherwise be subject in respect of an act or omission of a person mentioned in that subsection. 2010, c. 19, Sched. 1, s. 14 (2).

Not Crown agents

15. The Corporation and its members, officers, employees and agents are not agents of the Crown in right of Ontario and shall not hold themselves out as agents of the Crown. 2010, c. 19, Sched. 1, s. 15.

No Crown liability

16. No action or other proceeding shall be instituted against the Minister, the Crown in right of Ontario, or any employee of the Crown for any act or omission of the Corporation or a member, officer, employee or agent of the Corporation. 2010, c. 19, Sched. 1, s. 16.

Fiscal year

17. The Corporation's fiscal year commences April 1 in each year and ends on March 31 in the following year. 2010, c. 19, Sched. 1, s. 17.

Audit

18. The board shall appoint one or more licensed public accountants to audit the accounts and financial transactions of the Corporation for each fiscal year. 2010, c. 19, Sched. 1, s. 18.

Annual report

19. (1) The board shall submit an annual report on its affairs to the Minister and make it available to the public within 90 days after the end of each fiscal year. 2010, c. 19, Sched. 1, s. 19 (1).

Contents

(2) The report shall include,

(a) the audited financial statements of the Corporation;

(b) a description of the Corporation's activities and achievements during the fiscal year; and

(c) any other information that the Minister directs to be included in the annual report. 2010, c. 19, Sched. 1, s. 19 (2).

Recommendations to the Minister

(3) The board shall, in every third year, make such recommendations to change this Part and the regulations as it considers advisable, including changes to the objects of the Corporation under section 5. 2010, c. 19, Sched. 1, s. 19 (3).

Other reports

20. The Corporation shall promptly prepare and submit to the Minister any other report that the Minister requires. 2010, c. 19, Sched. 1, s. 20.

Winding up the Corporation

21. (1) The Lieutenant Governor in Council may by order require the board to wind up the affairs of the Corporation. 2010, c. 19, Sched. 1, s. 21 (1).

Preparation of plan

(2) If the Lieutenant Governor in Council makes an order under subsection (1), the board shall prepare a proposed plan for winding up the Corporation and transferring its assets, liabilities, rights and obligations and shall give the proposed plan to the Lieutenant Governor in Council for approval. 2010, c. 19, Sched. 1, s. 21 (2).

Restriction

(3) The plan for winding up the Corporation may provide for,

(a) liquidating assets and transferring the proceeds to the Consolidated Revenue Fund or to an agency of the Crown; and

(b) transferring assets, liabilities, rights and obligations to the Crown in right of Ontario or to an agency of the Crown. 2010, c. 19, Sched. 1, s. 21 (3).

Implementation

(4) If the Lieutenant Governor in Council approves the proposed plan, the board shall wind up the affairs of the Corporation and transfer its assets, liabilities, rights and obligations, including transferring the proceeds from the liquidation of assets, in accordance with the plan. 2010, c. 19, Sched. 1, s. 21 (4).

Notice

(5) The board shall notify the Minister in writing when it has finished complying with subsection (4). 2010, c. 19, Sched. 1, s. 21 (5).

Dissolution

(6) After the Minister receives the notice under subsection (5), the Lieutenant Governor in Council may by order dissolve the Corporation. 2010, c. 19, Sched. 1, s. 21 (6).

Grants

22. The Minister may provide grants to the Corporation for the purpose of defraying its operating costs, on such conditions as the Minister considers advisable, out of money appropriated for that purpose by the Legislature. 2010, c. 19, Sched. 1, s. 22.

Regulations

23. The Lieutenant Governor in Council may make regulations,

(a) governing the composition of the board, the appointment or election of board members, the remuneration of and reimbursement of expenses of board members, and the quorum of the board;

(b) prescribing provisions of the *Corporations Act* and the *Corporations Information Act* that apply to the Corporation, and prescribing any modifications, if necessary;

Note: On the later of the day clause (b) comes into force and the day subsection 4 (1) of the *Not-for-Profit Corporations Act, 2010* comes into force, clause (b) is amended by striking out "*Corporations Act*" and substituting "*Not-for-Profit Corporations Act, 2010*". See: 2010, c. 19, Sched. 1, ss. 45 (4).

(c) prescribing provisions of the *Business Corporations Act* that apply to the Corporation or to the members of the board, and prescribing any modifications, if necessary;

(d) prescribing anything that this Part refers to as prescribed by the regulations. 2010, c. 19, Sched. 1, s. 23.

PART III
MUNICIPAL WATER SUSTAINABILITY PLANS AND PERFORMANCE INDICATORS AND TARGETS

Definitions

24. In this Part,

"Minister" means the Minister of the Environment or any other member of the Executive Council to whom responsibility for the administration of this Part is assigned or transferred under the *Executive Council Act*; ("ministre")

"municipal service" means, subject to the regulations, municipal water services, municipal wastewater services or municipal stormwater services; ("service municipal")

"municipal service provider" means a municipality, person or entity having jurisdiction over one or more municipal services; ("fournisseur de services municipaux")

"plan" means a municipal water sustainability plan required under section 25; ("plan")

"prescribed" means prescribed by the regulations; ("prescrit")

"regulations" means the regulations made under this Part. ("règlements") 2010, c. 19, Sched. 1, s. 24.

Municipal water sustainability plan

25. (1) On becoming a regulated entity under the regulations, a municipal service provider shall, in accordance with such requirements as may be prescribed, prepare, approve and submit to the Minister a municipal water sustainability plan for all municipal services,

(a) that are under the municipal service provider's jurisdiction; and

(b) to which, under the regulations, the regulated entity's initial plan is to apply. 2010, c. 19, Sched. 1, s. 25 (1).

Amendments to plans

(2) A regulated entity shall, in accordance with such requirements as may be prescribed, amend its plan if the regulations subsequently require the regulated entity's plan to include,

(a) a municipal service under its jurisdiction that was not previously required to be included in its plan; or

(b) new or different information. 2010, c. 19, Sched. 1, s. 25 (2).

Approval and submission of amended plans

(3) A regulated entity shall, in accordance with such requirements as may be prescribed, approve amendments to its plan and, in such circumstances as may be prescribed, submit its amended plan to the Minister. 2010, c. 19, Sched. 1, s. 25 (3).

Amendments to achieve targets

(4) The Minister may, by direction, require a regulated entity to amend its plan in such manner and at such time as the Minister may direct in order to assist the regulated entity to achieve performance targets established by the Minister under section 29. 2010, c. 19, Sched. 1, s. 25 (4).

Review of plans

(5) A regulated entity shall ensure that such review of its plan as may be required by the regulations is undertaken and completed in accordance with such requirements as may be prescribed and that the report of the review is approved and submitted to the Minister in accordance with such requirements as may be prescribed. 2010, c. 19, Sched. 1, s. 25 (5).

Approval by municipality

(6) In such circumstances as may be prescribed, if a regulated entity that has jurisdiction over a municipal service is not a municipality, a plan, amendment to a plan or proposed report of a required review of a plan that relates to the municipal service shall not be submitted to the Minister without the approval of the municipality in which the municipal service is provided. 2010, c. 19, Sched. 1, s. 25 (6).

Requirements for plan

26. (1) A plan must satisfy the requirements prescribed by the regulations. 2010, c. 19, Sched. 1, s. 26 (1).

Contents of plan

(2) Without limiting the generality of subsection (1), the regulations may require a plan to include any of the following matters, prepared in accordance with such requirements as may be prescribed, with respect to each municipal service to which the plan applies:

1. An asset management plan for the physical infrastructure.
2. A financial plan.
3. If the municipal service is a municipal water service, a water conservation plan.
4. An assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks.
5. Strategies for maintaining and improving the municipal service, including strategies to,
   i. ensure the municipal service can satisfy future demand,
   ii. consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and
   iii. increase co-operation with other municipal service providers.

6. Such other information or things as may be prescribed relating to the municipal service. 2010, c. 19, Sched. 1, s. 26 (2).

May include additional information

(3) A regulated entity may include in a plan such additional information or things as it considers advisable. 2010, c. 19, Sched. 1, s. 26 (3).

Requirement to assist

(4) When, for the purpose of preparing, amending or reviewing a plan, a regulated entity requires information from a municipality, person or entity relating to a municipal service, the municipality, person or entity shall co-operate with the regulated entity and, on request, shall,

(a) provide the regulated entity with a copy of any record or other document in its possession or under its control that relates to matters to be considered in the preparation, amendment or review of the plan; and

(b) assist the regulated entity in obtaining such other information and things as the regulated entity may require to prepare, amend or review the plan. 2010, c. 19, Sched. 1, s. 26 (4).

Joint plans

27. (1) Two or more regulated entities may prepare a joint plan or a joint part of their plans and, if directed to do so by the Minister, shall prepare a joint plan or joint part of their plans. 2010, c. 19, Sched. 1, s. 27 (1).

Deemed to be plan of each regulated entity

(2) If two or more regulated entities prepare a joint plan, or a joint part of a plan, that satisfies the requirements of section 26, the joint plan or joint part of the plan is deemed to be the plan or a part of the plan, as applicable, of each of them. 2010, c. 19, Sched. 1, s. 27 (2).

Amendments

(3) Unless otherwise directed by the Minister, any amendments to a joint plan or joint part of a plan must be made by the regulated entities that originally prepared the joint plan or part or by their successors. 2010, c. 19, Sched. 1, s. 27 (3).

Review of joint plans

(4) Unless otherwise directed by the Minister, any review of a joint plan or a joint part of a plan must be undertaken by the regulated entities that originally prepared the joint plan or part or by their successors. 2010, c. 19, Sched. 1, s. 27 (4).

Performance indicators

28. (1) The Minister may, by direction, establish performance indicators for any type of municipal service. 2010, c. 19, Sched. 1, s. 28 (1).

Same

(2) Performance indicators established under subsection (1),

(a) may relate to the financing, operation or maintenance of a municipal service or to any other matter in respect of which information may be required to be included in a plan; and

(b) may be different for different municipal service providers or for municipal services in different areas of the Province. 2010, c. 19, Sched. 1, s. 28 (2).

Publication

(3) The Minister shall publish performance indicators established under this section on the environmental registry established under section 5 of the *Environmental Bill of Rights, 1993*, together with a summary of the information the Minister relied on to establish each performance indicator. 2010, c. 19, Sched. 1, s. 28 (3).

Performance targets

29. (1) In relation to a performance indicator established under subsection 28 (1), the Minister may establish, by direction, one or more performance targets for one or more types of municipal services under the jurisdiction of a regulated entity or a class of regulated entities, and a target may be different for different municipal service providers or for municipal services in different areas of the Province. 2010, c. 19, Sched. 1, s. 29 (1).

Publication

(2) The Minister shall publish performance targets established under this section on the environmental registry established under section 5 of the *Environmental Bill of Rights, 1993*, together with a summary of the information the Minister relied on to establish each performance target. 2010, c. 19, Sched. 1, s. 29 (2).

Review and evaluation of performance

30. (1) A regulated entity shall, when directed to do so by the Minister, review and evaluate in accordance with the Minister's directions and such requirements as may be prescribed, the performance of a municipal service under its jurisdiction with reference to the applicable performance indicators and shall,

(a) report the results of its review and evaluation to the Minister in such manner and at such time as the Minister directs and, if a target has been established under section 29, include in the report information on the extent to which the target is being achieved; and

(b) make available, in such manner and at such time as the Minister directs, the results of its review and evaluation to the public in the geographic area in which the regulated entity provides a municipal service. 2010, c. 19, Sched. 1, s. 30 (1).

Public disclosure

(2) The Minister may publicly disclose any of the information provided by regulated entities under subsection (1) in such manner and format as the Minister considers appropriate. 2010, c. 19, Sched. 1, s. 30 (2).

Failure to achieve a target

31. If a regulated entity fails to achieve a target established by the Minister under section 29, the Minister may do one or both of the following:

1. Require the regulated entity to provide such additional information as the Minister specifies relating to the regulated entity's efforts to achieve the target and the reasons for its failure to do so.

2. Invite the regulated entity to prepare and submit to the Minister a report describing,

   i. proposed strategies to be included in the regulated entity's plan to assist it in achieving the target, or

   ii. proposed steps to be taken by the regulated entity to assist it in achieving the target. 2010, c. 19, Sched. 1, s. 31.

Legislation Act, 2006

32. Directions made under this Part are not subject to Part III (Regulations) of the *Legislation Act, 2006*. 2010, c. 19, Sched. 1, s. 32.

Delegation of authority

33. (1) The Minister may in writing delegate any of his or her powers or duties under this Part to one or more public servants employed under Part III of the *Public Service of Ontario Act, 2006*. 2010, c. 19, Sched. 1, s. 33 (1).

Same

(2) A reference in this Part or the regulations to the Minister is deemed, for the purpose of a delegation under subsection (1), to be a reference to the delegate. 2010, c. 19, Sched. 1, s. 33 (2).

Forms

34. The Minister may approve forms for any purpose of this Part or the regulations, specify the procedure for the use of the forms and require their use for any purpose of this Part or the regulations. 2010, c. 19, Sched. 1, s. 34.

Regulations

35. The Lieutenant Governor in Council may make regulations for the purposes of this Part,

(a) prescribing a municipality, person or entity to be a regulated entity and the date on which the municipality, person or entity becomes a regulated entity with respect to one or more municipal services under their jurisdiction;

(b) deeming a water service, wastewater service or stormwater service under the jurisdiction of a regulated entity to be a municipal service;

(c) governing the preparation, approval, submission, amendment and review of plans by regulated entities, including,

(i) governing the content of plans, including the requirements for each part of a plan relating to a type of municipal service,

(ii) requiring that prescribed parts of the plan be certified in the prescribed manner by persons with prescribed qualifications,

(iii) requiring public consultation before a plan, an amendment to a plan or the report of a review under this Part is submitted to the Minister and prescribing the manner for carrying out the public consultation in each case,

(iv) requiring that plans or a class of plans be reviewed within the period prescribed by the regulations and the process to be followed in reviewing the plans;

(d) prescribing circumstances in which a plan, an amendment to a plan or the proposed report of any required review of a plan must be approved by each municipality in which a municipal service is provided to which the plan, amendment or report relates;

(e) prescribing any time periods or time limits for doing anything required to be done under this Part or the regulations;

(f) prescribing anything that this Part describes as being prescribed by the regulations. 2010, c. 19, Sched. 1, s. 35.

PART IV

PUBLIC SECTOR REQUIREMENTS

Definitions

36. In this Part,

"prescribed" means prescribed by the regulations; ("prescrit")

"public agency" means a ministry of the Government of Ontario or an entity, including a municipality, or class of entities that is prescribed as a public agency; ("organisme public")

"regulations" means the regulations made under this Part. ("règlements") 2010, c. 19, Sched. 1, s. 36.

Water conservation plans

Public agencies

37. (1) The Lieutenant Governor in Council may, by regulation, require public agencies to prepare water conservation plans. 2010, c. 19, Sched. 1, s. 37 (1).

Same, regulations

(2) The regulations may provide that a plan required under subsection (1) cover such period as is prescribed and may be required at such intervals as are prescribed and may require that the plan be filed with the Ministry of the Environment. 2010, c. 19, Sched. 1, s. 37 (2).

Specified targets and standards, public agencies

(3) The Lieutenant Governor in Council may, by regulation, require a public agency to achieve prescribed water conservation targets and, in achieving those targets, to comply with prescribed environmental standards and other prescribed requirements. 2010, c. 19, Sched. 1, s. 37 (3).

Contents, public agencies

(4) For the purposes of subsection (1), the plan must be prepared in accordance with the requirements, as may be prescribed, and must include the following information:

1. A summary of annual water use for each of the public agency's prescribed operations.
2. A description and a forecast of the expected results of current and proposed activities and measures being taken or proposed to be taken by the public agency to conserve water, including prescribed measures.
3. A summary of the progress and achievements in water conservation since the previous plan, including,
   i. progress and achievements relating to targets established by the public agency in the plan, and
   ii. progress and achievements relating to targets prescribed under subsection (3).
4. Such additional information as may be prescribed. 2010, c. 19, Sched. 1, s. 37 (4).

Publication

(5) The public agency shall publish the plan in accordance with such requirements as may be prescribed. 2010, c. 19, Sched. 1, s. 37 (5).

Implementation

(6) The public agency shall implement the plan and shall do so in accordance with such requirements as may be prescribed. 2010, c. 19, Sched. 1, s. 37 (6).

Same, regulations

(7) The regulations may require a public agency to co-ordinate, in the prescribed manner, the preparation and implementation of its water conservation plan under this section with the preparation and implementation of the agency's energy conservation and demand management plan under section 6 of the *Green Energy Act, 2009*. 2010, c. 19, Sched. 1, s. 37 (7).

Joint plans, public agencies

38. (1) Two or more public agencies may prepare a joint water conservation plan and may publish and implement it jointly. 2010, c. 19, Sched. 1, s. 38 (1).

Effect

(2) If the joint plan satisfies the requirements established under section 37, the public agencies are not required to prepare, publish and implement separate water conservation plans for the same period. 2010, c. 19, Sched. 1, s. 38 (2).

Duty to consider water
When acquiring goods and services

39. (1) The Lieutenant Governor in Council may, by regulation, require public agencies, in their acquisition of goods and services, to consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and to comply with such requirements as may be prescribed for those purposes. 2010, c. 19, Sched. 1, s. 39 (1).

When making capital investments

(2) The Lieutenant Governor in Council may, by regulation, require public agencies, when making capital investments, to consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and to comply with such requirements as may be prescribed for those purposes. 2010, c. 19, Sched. 1, s. 39 (2).

Regulations

40. The Lieutenant Governor in Council may make regulations prescribing anything that this Part refers to as prescribed. 2010, c. 19, Sched. 1, s. 40.

PART V
MUNICIPAL WATER BILLS

Municipal water bills
Definitions

41. (1) In this section,

"municipal water bill" means a bill for,

(a) fees or charges imposed under the *Municipal Act, 2001* or the *City of Toronto Act, 2006* in respect of a water public utility, or

(b) fees or charges imposed by a corporation established under section 203 of the *Municipal Act, 2001* in respect of a water public utility; ("facture municipale d'eau")

"water public utility" means a public utility as defined in section 1 of the *Municipal Act, 2001* that is used to provide water for the public. ("service public d'approvisionnement en eau") 2010, c. 19, Sched. 1, s. 41 (1).

Regulations

(2) The Minister of the Environment may make regulations prescribing information that a

person who issues a municipal water bill must or may include on or with the bill. 2010, c. 19, Sched. 1, s. 41 (2).

PART VI
TRIENNIAL REPORTS

Triennial reports

42. (1) The Minister of the Environment shall, at least once every three years, prepare a report that,

(a) describes the extent to which each target established under section 2 is being achieved;

(b) summarizes the activities and achievements of the Water Technology Acceleration Project during the reporting period;

(c) summarizes the activities and achievements of the Ontario Clean Water Agency during the reporting period relating to financing and promoting the development, testing, demonstration and commercialization of technologies and services for the treatment and management of water, wastewater and stormwater;

(d) describes actions taken and outcomes achieved during the reporting period by municipalities, persons and entities prescribed as regulated entities for the purposes of Part III in respect of their municipal water, wastewater and stormwater services;

(e) describes actions taken and outcomes achieved during the reporting period by public agencies as defined in Part IV to conserve water and to use technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources; and

(f) includes any other information that the Minister considers advisable. 2010, c. 19, Sched. 1, s. 42 (1).

Report under *Safe Drinking Water Act, 2002*

(2) The Minister may include a report under this section in a report prepared under subsection 3 (4) of the *Safe Drinking Water Act, 2002*. 2010, c. 19, Sched. 1, s. 42 (2).

Publication

(3) If a report under this section is not included in a report prepared under subsection 3 (4) of the *Safe Drinking Water Act, 2002*, the Minister shall publish the report on the environmental registry established under section 5 of the *Environmental Bill of Rights, 1993*. 2010, c. 19, Sched. 1, s. 42 (3).

PART VII
REGULATIONS

Regulations

43. The Lieutenant Governor in Council may make regulations,

(a) defining any word or expression used in any Part of this Act that is not defined in that Part;

(b) exempting any person or thing from this Act or any provision of this Act, subject to such conditions as may be prescribed by the regulations. 2010, c. 19, Sched. 1, s. 43.

Amendments to adopted documents

44. (1) If a regulation made under this Act adopts a document by reference and requires

compliance with the document, the regulation may adopt the document as it may be amended from time to time. 2010, c. 19, Sched. 1, s. 44 (1).

When adoption of amendment effective

(2) The adoption of an amendment to a document that has been adopted by reference comes into effect upon the Ministry publishing notice of the amendment in *The Ontario Gazette* or in the environmental registry established under section 5 of the *Environmental Bill of Rights, 1993*. 2010, c. 19, Sched. 1, s. 44 (2).

PART VIII (OMITTED)

45. Omitted (provides for amendments to this Act). 2010, c. 19, Sched. 1, s. 45.

PART IX (OMITTED)

46. Omitted (provides for coming into force of provisions of this Act). 2010, c. 19, Sched. 1, s. 46.

47. Omitted (enacts short title of this Act). 2010, c. 19, Sched. 1, s. 47.

Français

Back to top

APPENDIX 'A2'
WATER OPPORTUNITIES ACT FACT SHEET

May 2011

Ontario's Water Opportunities Act

Ontario has abundant water resources and some of the best protected water in the world. Ontario's innovative water technology and services sector has the expertise to become a North American leader for water protection and treatment.

Across the province, the clean water industry employs 22,000 and generates $1.8 billion in sales. Ontario firms are recognized leaders in ultraviolet disinfection, compact sewage treatment, water information and systems software, and plant design and operation.

That's why the province set a path to help Ontarians further develop and market clean water technology and services, and use water more efficiently.

An important step to strengthening Ontario's leadership in water protection is the Water Opportunities Act. It will create more jobs in the growing global market for clean water technology and services and support business development in Ontario. The Water Technology Acceleration Project (WaterTAP), a water technology hub, will bring together industry, academia and government to develop the sector and promote it abroad.

More efficient water use

The act sets the framework to help municipalities improve the efficiency of municipal infrastructure and services by:

- Identifying innovative, cost effective solutions for drinking water, sewage and stormwater system challenges.
- Optimizing systems and improving water conservation.
- Identifying opportunities to demonstrate and carry out new and emerging Ontario water technologies, services and practices.

The act enables the authority to require municipalities and other water service providers to prepare municipal water sustainability plans. These plans will promote water efficiency as a cost effective way to generate additional water and wastewater capacity.

We will be working closely with municipalities and all stakeholders when developing regulations to ensure that we are maximizing all of the good work that has already been done.

The act will also help Ontarians do their part to reduce the amount of water they use by allowing the province to:

- Bring in water efficiency standards for consumer products sold in Ontario such as toilets, faucets and showerheads.
- Require standardized information about water use on water bills.

Moving forward

Several activities that support achieving the goals of Water Opportunities Act are already underway or planned.

- The next phase of the Ontario Small Waterworks Assistance Program (OSWAP-3) is a four year, $50 million merit-based capital program for municipalities and Local Services Boards that own residential drinking water or wastewater systems that provide services to 5,000 or fewer people. OSWAP-3 encourages small municipalities to improve water conservation and efficiency through projects such as fixing leaking pipes and installing water meters. OSWAP-3 also promotes more collaboration between small communities. The program builds on the Water Opportunities Act by linking provincial water and wastewater infrastructure funding to tangible improvements in conservation and efficiency.

- Funding of $30 million over three years will be provided for Showcasing Water Innovation, municipal water sustainability planning, and to support public education and awareness about water conservation.

- The Showcasing Water Innovation program will provide grants for projects that demonstrate and encourage innovative and cost-effective approaches for managing drinking water, wastewater and stormwater systems in communities. It will focus on projects that can be used by other communities in Ontario and around the globe. To learn more visit www.ontario.ca/waterinnovation.

- The Innovation Demonstration Fund Water Round focuses on the commercialization of water technologies by assisting water technology companies with the potential to be globally competitive in demonstrating their innovative technologies in Ontario.

- The Ontario Research Fund Research Excellence (ORF-RE) Water Round competition is currently underway to select and invest in research projects in water and wastewater technologies. The fund promotes the development of water-related solutions both for domestic adoption and international export.

- From May 17 to18, 2011, the first Ontario Global Water Leadership Summit will demonstrate Ontario's leadership in advancing innovative solutions for global water challenges. The world's leading water entrepreneurs, innovators, thinkers, catalysts, and researchers will come together for meaningful and interactive dialogue on the future of innovation in the water sector.

- The new Minister's Award for Environmental Excellence recognizes local green achievement, leadership and innovation. The award will honour the individuals and organizations working to enhance and protect our environment. For 2011, awards are focused on water including water innovation, conservation, protecting Lake Simcoe, protecting drinking water, and on reducing toxics.

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APPENDIX 'B'
PUBLIC SECTOR ROLE MATRIX

Note: not intended to be exhaustive, populated With a level of effort/project scope, intended to provide/inform development of a process/framework

Public Service		Public Sector Roles					
		Town of Oakville	Region of Halton	Conservation Halton	Other		
					Provincial	Federal	Non-Government Organization
1.	**Stewardship/Education**						
a)	**Children's Education**	Lake Level sponsor of Halton Children's Water Festival (Halton Children's Water Festival)	Importance of ground and surface water – elementary schools (Halton Children's Water Festival)	Importance of ground and surface water – elementary schools (Halton Children's Water Festival)			The Groundwater Foundation community groups Oakvillegreen school boards other Halton municipalities
		Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)			Trout Unlimited
		Glenburnie School in Oakville sponsors a stormwater management pond		Awareness of local watersheds/watercourses – elementary schools (Streams of Dreams)			
b)	**Forest Stewardship**	education for invasive species response (Gypsy Moth/Emerald Ash Borer),					NGOs: conduct garlic mustard pulls (Oakville Horticultural Society), tree plantings (Oakvillegreen, Groundbreakers, many community groups)
			Funding for preparation of forest management plans (Woodlands Stewardship Program)		Private Lands Forest Stewardship – Ministry of Natural Resources (Trees Ontario)		
			Purchase and planting of nursery stock (Woodlands Stewardship Program)	Volunteer tree planting and educational program (Trees for Watershed Health)			
		Recommendations for improvements to the forest stewardship program (Urban Forest Strategic Management Plan)					
c)	**General Public**	Engage the community as stewards of the environment (Environmental Sustainability Plan and Procedures)			Ontario Stewardship Council – Ministry of Natural Resources		General outreach at community events – Halton Environmental Network

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
	Education and capacity building (Environmental Strategic Plan)		Outdoor educational interpretive programs (Strategic Plan)			
	Partners with the Blue W non-profit organization	Facilitates rain barrel sales, toilet rebate incentives programs				
			Deliver strong community stewardship programs (Hamilton-Halton Watershed Stewardship Program)			
d) Water Efficiency		Efficient use of potable water (i.e. outdoor water use restriction, water efficient fixtures and appliances, etc.)				Ontario Water Works Association
2. Monitoring						
a) Climate/ Meteorological	Climate Monitoring (weather stations)	Weather Stations	Weather Stations	Ministry of the Environment	Water Survey of Canada - Environment Canada	McMaster University
b) Ecosystem Change	State of Environment Reporting including watercourse reporting		Species and ecosystem (Long Term Environmental Monitoring Program)	Provincial Water Quality and Groundwater Monitoring Networks – Ministry of the Environment Provincial Water Quality and Groundwater Monitoring Networks – Ministry of the Environment	Marsh Monitoring Program – Environment Canada Species at Risk Programs/ Recovery Plans	
c) Water Quality	Water quality monitoring at stormwater management ponds, storm sewers, outfalls, and creeks (Water Quality Monitoring Program – annual also through development applications)		Surface water and groundwater quality monitoring throughout watershed (Long Term Environmental Monitoring Program)	Ministry of the Environment - special studies, e.g for phosphorus/algae (cladophora) studies – also defines water quality protection levels for streams etc. Great Lakes Index Station Network Drinking Water Surveillance	Great Lakes Surveillance Program	

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
				Program		
		Lake Intake Water Quality Monitoring				
		Water Treatment Plant Quality Monitoring of Effluent				
	Stormwater management ponds – sedimentation, water quality, hydraulic function (Stormwater Pond Sedimentation Study)					
d) Water Quantity	Assessment at Dundas Street and data available through development applications	Quantity of available drinking water	Water level monitoring (Flood Protection and Low Water and Water Control)	Surface Water Monitoring Centre – Ministry of Natural Resources	HYDAT Stations and Database	
3. Operations, Maintenance and Management/Capital Planning of Water-based infrastructure (built and natural)						
a) Stormwater Management Ponds	Design and use of stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)			Ministry of the Environment		
	Maintenance of stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)					
b) Storm Sewer	Capital projects – major and minor systems (Storm Sewer Master Plan)					

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
c) Watercourses	Erosion assessment (Bi-annual Creek Erosion Assessment and Stream Restoration EA and Construction Projects)					
	Stream restoration EA's and capital projects (Bi-annual Creek Erosion Assessment and Stream Restoration EA and Construction Projects)					
	Flood mitigation capital projects (Town-Wide Flood Study)					
d) Shoreline	Shoreline erosion assessment (Bi-annual Shoreline Assessment, focused EA's and construction projects)					
	Shoreline erosion mitigation - capital projects (Bi-annual Shoreline Assessment, focused EA's and construction projects)					
e) Water and Wastewater		Review, evaluation of water and wastewater servicing strategies (Sustainable Halton Water and Wastewater Master Plan and Citizen's Priorities – Halton Region's 2011 to 2014 Action Plan)				
	Sustainable Building Design Guidleines (Livable Oakville and North Oakville Secondary Plans)	Capital projects (Building a Better Halton and Sustainable Halton Water and Wastewater Master Plan)				

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
	Innovative programs/ practices coming in (e.g. new transit facility is using rainwater capture system to supply bus wash water)					
f) Flood Control	Operation and Maintenance of Stormwater Management Ponds		Operations and maintenance of flood control structures and channels (Flood Protection: Low Water and Water Control)			Conservation Ontario
	Flood Study (Town wide Flood Control Study)					
4. Land Development/Land Use						
a) Urban Uses	Land use and associated patterns including land to be developed and protection of natural features (Livable Oakville Town of Oakville Official Plan and North Oakville East and West Secondary Plan)	Land use and associated patterns including land to be developed and protection of natural features (Halton Region Official Plan and Amendments and Sustainable Halton)	Land use and associated patterns including land to be developed and protection of natural features (Plan Input and Review and Ontario Regulation 162/06)	Ministry of Municipal Affairs and Housing		
		Official Plan Amendments (Region of Halton – Planning Applications)	Official Plan Amendments (Plan Input and Review)			
			Development within and adjacent to wetlands/watercourses (Ontario Regulation 162/06)	Ministry of Natural Resources		
b) Natural Features	Sustain and enhance the natural environment (Environmental Strategic Plan 2011 Update and North Oakville Creeks Subwatershed Study)		Develop and enhance a natural heritage system (Strategic Plan)			
c) Forest Management	Urban Forest Management (Urban Forest Strategic Management Plan and North Oakville Urban Forest Strategic Management Plan)	Large Woodlots Designation (Tree By-law)		Ministry of Natural Resources		

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
d) Process	Site grading and Erosion and Sediment Control review and process (Site Alteration By-law)		Site grading and Erosion and Sediment Control review (Plan Input and Review)			
	Site Plan and Subdivision review and process (Site Plan and Subdivision Process)		Site Plan and Subdivision review (Plan Input and Review)			
	Environmental Implementation Report review and process (eg. North Oakville Creeks Subwatershed Study)		Environmental Implementation Report review (Plan Input and Review)			
5. Environmental Sustainability						
a) Policy	Corporate Sustainability (Environmental Sustainability Policy and Procedures)	Corporate Sustainability (Corporate Sustainability Assessment)	Towards a Healthy Watershed (Strategic Plan 2009-2013)			
	Sustainable Communities (Council's Strategic Plan and 2011-2014 Work Plan)	Sustainable Communities (Citizen Priorities – Halton Region's 2011 to 2014 Action Plan)				
	Climate Change Policy (Climate Change Strategy)					
	Sustainable Building Design Guidelines					
6. Design Standards						
a) Stormwater Management	Stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)			Ministry of the Environment		
b) Urban Design	Urban Design (community) (Urban Design Guidelines for Livable Oakville)		Urban Design (Ontario Regulation 162/06)			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
	Sustainable Building Design Guidelines					
c) Water and Wastewater		Water re-use, grey water system and sewer use by-law				
7. Emergency Planning/Procedures						
a) Flood Control	Emergency planning and flood warning (Town Wide Flood Study)		Emergency planning and flood warning (Flood Protection: Low Water and Water Control)			
b) Spills Response	Town wide procedure	Region wide procedure				
c) Climate Change	Climate change adaptation plan					
8. Compliance/Enforcement						
a) Natural Areas	Parks and other natural areas (Parks Rules and Regulation By-laws)		Parks and other natural areas (Park and Land Managers)			
	Tree protection initiatives (by-law and site plan requirements)					
b) Storm sewer	Uncontrolled discharge to storm sewer (Storm Sewer Use By-law)					
c) Building Code	Water efficient fixtures					
d) Natural Hazards			Development within and adjacent to Wetlands, Watercourses, Shorelines and associated hazards (Ont. Reg. 262/06)			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
9. Other						
a) Financing	Town programs including: Asset Management, PB2 Budgeting, Risk Assessment Policy, and 1% Infrastructure Capital Assessment to ensure infrastructure renewal					
10. Natural Heritage/Green/Open/Park Space – Operations, Maintenance, Management/Capital Planning						
b)						

APPENDIX 'C'
FOCUS GROUP CONSULTATION

Meeting Minutes

Date: March 21, 2012
Our File: 111127-75

Subject: Developing a Process to Prepare a Water Sustainability Plan, Town of Oakville

Date: Wednesday, March 14, 2012

Time: 9:00 am

Location: Town of Oakville Building – Committee Room 1

In Attendance:

Marie Rosati	Region of Halton
Steve Grace	Town of Halton Hills
Martin Bateson	Town of Milton
Arif Shahzad	City of Burlington
Janette Brenner	Conservation Halton
Rita Juliao	Town of Oakville
Samaresh Das	Town of Oakville
Cindy Toth	Town of Oakville
Ron Scheckenberger	AMEC Environment & Infrastructure
Paul Smeltzer	AMEC Environment & Infrastructure
Lisa Vespi	AMEC Environment & Infrastructure
Heather Dearlove	AMEC Environment & Infrastructure

Regrets:

Kiyoshie Oka	Region of Halton
U Malik	City of Burlington
Henry Jun	Ministry of the Environment
Neil Levesque	Ministry of the Environment

MATTERS DISCUSSED **ACTION BY:**

1. Introductions/Study Overview/Objectives/Outcomes/Purpose of Consultation

Ron Scheckenberger provided a brief introduction to the project including a review of the Water Opportunities Act, the purpose of this study and the purpose of the consultation component. The following are points raised during the review:

i. Martin Bateson noted that in terms of the contents of the plan under the Water Opportunities Act, a Financial Plan (26.(2)2.) represents a large implication for municipalities. Some municipalities are already completing this as part of their internal requirements. Will the Financial Plan be similar to that which is

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required for drinking water? There would need to be a separate financial plan from water services that would be completed annually. The financial plan can be drawn from other sources or a Town wide Financial Plan. Extra work of creating this plan could be a burden to municipalities

ii. Arif Shazad noted in response to the statement on the Fact Sheet "*These plans will promote water efficiency as a cost effective way to generate additional water and wastewater capacity":* It does not necessarily mean that efficiencies can free up enough capacity for growth. It may free up enough for resiliency though.

iii. Martin Bateman asked if anyone is aware of the longevity of these Water Sustainability Plans? Do they expire, are they static? Paul Smeltzer commented that the asset management/financial plans are completed annually whereas Master Plans are typically completed every 5 years. There is opportunity to advise MOE that annual audits of the plans would be beneficial. The Clean Water Act requires annual reports, the Water Sustainability Plan could be similar. MOE will likely change to an audit process as opposed to a review process (similar to Class EA process). This could be a "living document" and annual audits could simply be reviews of the document to ensure that the policy is still in line with the objectives of council, other plans, etc.

2. Review of Draft Generic "Project Charter"

Ron Scheckenberger reviewed the Draft Generic "Project Charter". AMEC to send copies of the Draft Generic "Project Charter" to all attendees. **AMEC**

i. Rita Juliao questioned who would sign the charter? Paul Smeltzer commented that the Town manager / CAO / Senior Management would sign the Charter not Council. Council though would be approving it.

ii. Janette Brenner asked if the Project Charter would be a requirement of MOE as part of the Water Sustainability Plan. At this time it is not known if it would be a requirement but you can assume that as it was a requirement of this study that it may become part of the regulation that is currently being developed by the MOE, MOE will advise once regulations in place.

3. Background Review and Characterization to the Provision of Public Water Services

Ron Scheckenberger and Paul Smeltzer presented the draft Background Review and Characterization and Preliminary Issues and Opportunities Report. Some examples of the items captured in the report were presented for the Town of Oakville, the Region of Halton

and Conservation Halton. The following are points raised and discussed during the review:

i. Cindy Toth commented that the graphic that illustrates the Mandates, Strategic Plans, Policies / Procedures / Programs / Practices is a great way to harmonize the Official Plans, Master Plans, and Secondary Plans. Often there are inconsistencies in the documents at different hierarchies. E.g., north vs. south of Dundas Street have different growth strategies (intensification vs. Smart growth of greenfields).

ii. Cindy Toth to send additional information on Development Charges program. **Town**

iii. Janette Brenner to send additional information on items related to Lake Ontario to be included in the Characterization Report. **CH**

iv. The Region of Halton to review its section of the Characterization Report and forward any relevant documents or required revisions. **Region**

4. Issues and Opportunities Matrix/Round Table Discussion

The following comments arose from the break-out session:

General Comments:

i. Rita Juliao requested that some of the wording be softened and made broader.

ii. Financial Planning should be a separate category.

iii. Steve Grace from Halton Hills provided some information on the program they require developers to undertake related to water efficiency. They have incorporated a mandatory education piece that the developers must implement.

iv. Janette Brenner would like to see stormwater recognized as a resource (i.e., reuse, greywater, etc.).

v. Martin Bateson questioned Stormwater financing. Wants to see stormwater become a utility (i.e., planning and maintenance with a user pay rates associated).

vi. Cindy Toth commented that under *7. Emergency Response that Spills Response* will play into the Source Protection Planning for companies such as Suncor in Oakville. Oakville is vulnerable in these areas.

vii. Janette Brenner clarified Conservation Halton's perspective *for 9. Natural Heritage/Green/Open Park Spaces*. It would include government-owned lands, rather than private-owned lands. There is potential to make No. 4 Urban Land Use, and make No. 9 Natural Heritage/Green/Open/Park Space to include greenspace, forest management, etc.

MATTERS DISCUSSED **ACTION BY:**

1. **Stewardship/Education**

Issues:

- The Town of Oakville has some programs for adults. The question is how well are they utilized or is the general public aware of them.
- Need for additional promotion of existing material/programs.

Opportunities:

- Possible use of the Stormwater Practice Group
- Adopt a facility – ie Glenburnie School adopted a stormwater management pond

2. **Monitoring**

Issues:

- There is a need for better co-ordination relating to monitoring including the use of standards/protocols.

Opportunities:

- Questioned if funding could be pooled.

3. **Operations, Maintenance and Management/Capital Planning of Water-Based Infrastructure (built & natural)**

- Consider separation of Operations and Maintenance from Capital Planning. There may be some benefit though in keeping them together as they are both need-based services.
- Having a "Financial Plan / Human Resources" category would be very beneficial as it is a standalone service.

Issues:

- Need for succession training.
- Update of Design Manuals

Opportunities:

- Update of MOE Stormwater Manual to include LID BMPs. This is timely but may take a couple of years to complete.
- Dedicated stormwater funding. Also examine the potential for credit for use of LID BMPs.
- Reverse the approach and make it the responsibility of the developer to implement water efficiencies or to provide rationale for why it is not possible.

4. Land Development/Land Use

- There are several stakeholders involved in this category who may have a role in policy making decisions. The policy / plan must comply with regulations. Each community will have different stakeholders:
    - Niagara Escarpment Commission
    - Department of Fisheries and Oceans Canada
    - Conservation Halton
    - MOE
    - MTO
    - Environment Canada
    - Transport Canada

Issues:

- Necessity to have a monthly review meeting (Town, Conservation Authority, Region, Developers) to review applications and issues (pre-consultation meeting).

Opportunities:

- Education opportunities.
- Land uses should also consider existing systems i.e., forest management, invasive species (including aquatic environments).

5. Environmental Sustainability

- The category of sustainability is very vague as the definition of "sustainability" is vague.
- Sustainability is more about resiliency, more about "change readiness".
- The category should also include "Adaptive Management"
- A definition of sustainability needs to be included in this category. Each municipality will have their own definition based on its servicing requirements.
- Relate policies of protection to sustainability
- Need for consideration of all who are involved in the water service. There should be a joint collaboration with different countries / municipalities, i.e. potable water intake from Lake Ontario involves local municipalities, International Great Lakes Regulation, MOE, etc.
    - Stormwater (lower tier municipalities) → Water / wastewater (upper tier municipalities).
    - Great Lakes municipalities (US / Canada) → Watershed (CA's) and Water / Wastewater (Region) → Service

Sheds (lower tier).
- The Region may not want to take on the responsibility of collaborating for SWM as it is the responsibility of the lower tier.

- There is no recognized method to measure environmental sustainability. How do you measure success?

6. Design Standards

Issues:

- Legacy issues should be identified and addressed, which can be costly, however, money could be saved in the long term. Issues include:
  - Brownfield development (groundwater issues)
  - Downspout connections (retrofits required to alleviate capacity issues in the storm sewers)
  - Leak management on water infrastructure
  - Stormwater Management retrofits
  - Combined Sewer Overflows (not an issue in Oakville)

Opportunities:

- Includes corporate design standards, such as Town buildings, parks, other systems. Extends beyond infrastructure design standards. The Town design standards include Green building design for all new / retrofit buildings.
- Updating of IDF curves to account for changing climate. Some municipalities are overlaying a climate change factor on their existing IDF curves.
- Update stormwater design standards for the following to account for climate change:
  - Sump pump
  - Stormwater management facilities (elimination of forebays).
  - Runoff coefficients (percent imperviousness based)

7. Emergency Planning Procedures

Issues:

- Limited money and resources spent on emergency planning / procedures.
- A need for more upfront planning / “readiness”, especially with the changing climate / weather patterns.
- More planning done in terms of train crashes, etc. rather than

for emergency flood planning. Flood planning may become more prevalent with as climate change becomes more prevalent.

- Issues with flood plain mapping and lack of emergency route planning

Opportunities:

- Ensure the municipality has a good baseline for modeling of water services. Past information can be beneficial and can be built upon. Do not just throw out good work. Unfortunately we cannot just wipe the slate clean as new technologies emerge. Where necessary, updates can be made.

5. Next Steps

- All attendees were asked to provide a definition of what a Water Sustainability Plan is to them. Please forward all definitions to AMEC. **ALL**
- AMEC to update Characterization Report based on any comments received and new items discussed. **AMEC**
- The 2nd round of consultation with members of the Stormwater Discussion Group will be held in early April 2012.

Meeting Minutes prepared by,

AMEC ENVIRONMENT & INFRASTRUCTURE
A division of AMEC Americas Limited

Per: Heather Dearlove, B.Sc.
Environmental Planner

HD/cc
c.c. All present
+ Regrets

Developing a Process to Prepare a Water Sustainability Plan

Halton Municipalities Focus Group

March 14, 2012

Agenda

1. Introduction
2. Study Overview/Objectives/Outcomes
3. Purpose of Consultation
4. Review of Draft/Generic "Project Charter"
5. Background Review and Characterization
6. Issues and Opportunities
7. Round Table Discussion
8. Schedule

2. Study Overview/Objectives/Outcomes

amec

Water Opportunities Act

Municipal water sustainability plan

25. (1) On becoming a regulated entity under the regulations, a municipal service provider shall, in accordance with such requirements as may be prescribed, prepare, approve and submit to the Minister a municipal water sustainability plan for all municipal services,

(a) that are under the municipal service provider's jurisdiction; and

(b) to which, under the regulations, the regulated entity's initial plan is to apply.

OAKVILLE

2. Study Overview/Objectives/Outcomes

amec

Water Opportunities Act

Requirements for plan

26. (1) A plan must satisfy the requirements prescribed by the regulations.

Contents of plan

(2) Without limiting the generality of subsection (1), the regulations may require a plan to include any of the following matters, prepared in accordance with such requirements as may be prescribed, with respect to each municipal service to which the plan applies:

1.
2.
3. If the municipal service is a municipal water service,
that may interfere with the , including,
if required by the the risks posed and a plan to deal with those risks.
5. , including strategies to,
i. ensure the municipal service can satisfy
ii. consider
on Ontario's water resources, and
iii.
6. Such other information or things as may be prescribed relating to the municipal service.

May include additional information

(3) A regulated entity may include in a plan such additional information or things as it considers advisable.

OAKVILLE

2. Study Overview/Objectives/Outcomes

Water Opportunities Act (Fact Sheet)

The Act sets the framework to help municipalities improve the efficiency of municipal infrastructure and services by:

- *Identifying innovative, cost effective solutions for drinking water, sewage and stormwater system challenges.*
- *Optimizing systems and improving water conservation.*
- *Identifying opportunities to demonstrate and carry out new and emerging Ontario water technologies, services and practices.*

The Act enables the authority to require municipalities and other water service providers to prepare municipal water sustainability plans. *These plans will promote water efficiency as a cost effective way to generate additional water and wastewater capacity.*

OAKVILLE

3. Purpose of Consultation

- A primary element of this project is consultation with other similar municipalities to dialogue openly on issues and opportunities related to the preparation of a Water Sustainability Plan, as well as core objectives of the Water Sustainability Plan.
- This is the first of two planned Focus Group sessions.
- Purpose of today's consultation (Halton Municipalities):
  - *Identify problems and concerns associated with the delivery of a future Water Sustainability Plan.*
  - *Provide input on Preliminary Issues and Opportunities.*
- The second Focus Group session will be with representatives from the Stormwater Discussion Group (representing southern Ontario municipalities and Conservation Authorities), in order to examine other issues and opportunities beyond Halton borders.

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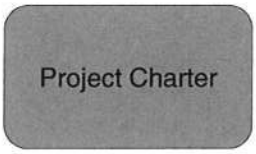
4. Draft/Generic "Project Charter"

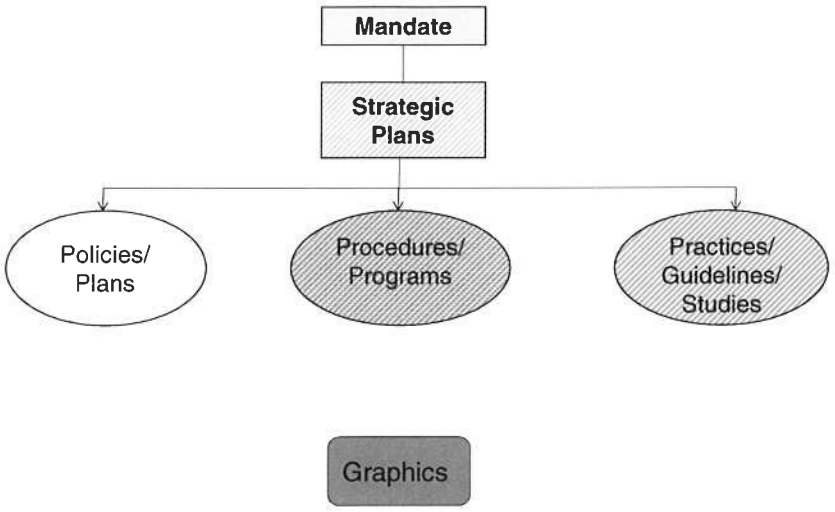
- Project Charter is defined as an official document granting rights to the stakeholders involved, including a Statement of Principles and Objectives under consideration for the development of a Water Sustainability Plan.



5. Background Review and Characterization

- A primary task of this project has focused on the identification and compilation of relevant background documents as related to water, wastewater and more specifically stormwater services.
- Conservation Halton, the Region of Halton and the Town of Oakville have provided specific documentation which summarizes the various policies, procedures and programs for which each is responsible for, as related to the delivery of municipal water, wastewater or stormwater services.
- This information has been used to identify and further define preliminary Issues and Opportunities related to the provision of water-based services in the context of a Water Sustainability Plan including:
  - *Gaps*
  - *Overlaps*
  - *Intersections*
  - *Emerging Science*
  - *Trends*
  - *Other*

5. Background Review and Characterization



5. Background Review and Characterization

Town of Oakville

Climate Change Strategy

Purpose:

The Town of Oakville is one of 12 signatory municipalities working with the International Council for Local Environmental Initiatives (ICLEI) - Local Governments for Sustainability, to create a corporate Climate Change Adaptation Plan. Town staff is moving through a five milestone (Milestone 1 – Initiate, Milestone 2 – Research, Milestone 3 – Plan, Milestone 4 – Implement, and Milestone 5 – Monitor/Review) process with a staff team of individuals from many Town departments. Milestone 1 was completed in early 2011 and Milestone 2 is currently being completed.

Key Elements:

Several key expected impacts related to climate change include more extreme weather events, flooding, and increased evaporation, and increased temperatures, and these will affect water and stormwater management activities. It is expected that this staff-developed plan will consolidate on-going adaptation and mitigation activities and forecast future actions to address potential climate change impacts.

Relevance:

Climate Change is becoming an increasingly more complex issue for municipalities to address. Climate Change and the policies prepared under this initiative will have to be taken into consideration with the development of a Water Sustainability Plan. The Water Opportunities Act recognizes a potential stressor from Climate Change as to its influence on the future delivery of water services. As such, the directions within the Climate Change Strategy and any adaptation approaches which influence water service provisions will need to be recognized in a future Water Sustainability Plan.

5. Background Review and Characterization

Town of Oakville

Bi-annual Creek Erosion Assessment and focused Stream Restoration EA and Construction Projects (Feb 2010)

Purpose:

The Town of Oakville conducts Bi-annual Creek Erosion Inspection and Assessment study to develop, evaluate and recommend preferred alternatives for the stabilization and rehabilitation of the creeks and banks and possible flood/flow control improvements along the different watercourses in the Town.

Key Elements:

The Erosion Assessment is based on a survey of field conditions – identifying the most sensitive geomorphic areas and erosion sites – as well as a broad-scale analysis of the field data to evaluate erosion risk to adjacent property and infrastructure. The objectives of this study have been to:

- Carry out an evaluation of the geomorphic and erosion conditions of each creek identified in the study.
- Identify and prioritize locations where rehabilitation is required.
- Prepare cost estimates and implementation recommendations for rehabilitation.
- Update the creek erosion database with the results of the assessment, including photographs and field data to provide a reference base for future assessments.

The processes contributing to issues within the study area first are assessed by analyzing hydrology, hydraulics, tractive forces and stream processes. These inspections were carried out by walking the creek systems and included photographic inventories of erosion sites. Prioritized lists of sites requiring rehabilitation were identified. These lists were used to forecast capital budget needs for erosion control projects

Relevance:

Natural open waterways within the Town of Oakville serve as important conveyors of stormwater, treated and received from local urban development. The health and stability of these waterways is an important consideration in the Town's effective stormwater system, and as such feedback from this program and related restoration and construction projects is critical to maintain a safe and functioning eco-system. This action aligns well with Water Sustainability Planning and needs to be considered in an overall stormwater-based structure.

5. Background Review and Characterization

Town of Oakville

Stormwater Pond Sedimentation Study

Purpose:

This study was conducted to assess stormwater management pond sediment for toxins. In addition, periodic sedimentation studies carry out assessments to compare design to as-built conditions and to help to prioritize sediment cleanout activities. The Town has conducted the study to develop, evaluate and recommend preferred alternatives for stormwater management pond (SWMP) monitoring including sediment depth surveys, water quality sampling, confirmation of hydraulic functioning (water level loggers), and the implementation of a meteorological monitoring network.

Relevance:

Sediment within stormwater management facilities can, based upon the contributing drainage areas, have various levels of contamination. The proper management of these sediments by way of cleanout of facilities needs to be a focussed component of the Town's overall operations and maintenance of stormwater management facilities. The foregoing would then contribute to a future Water Sustainability Plan in ensuring the protection of area resources.

5. Background Review and Characterization

Region of Halton

Sustainable Halton

Purpose:

Sustainable Halton is Halton Region's growth management and land use response to the province's Places to Grow Plan, the Provincial Policy Statement and the Greenbelt Plan. It involved research, public consultation, staff recommendations and Council approval of policy changes to the Halton's Official Plan. Places to Grow Plan, the provincial growth plan, sets population and employment targets that Halton Region must plan for. This requirement means the Region need to plan for an additional 134,000 people and 54,000 jobs in the years 2021-2031.

Key Elements:

The document identifies Halton's urban growth area to 2031 and what land will be preserved for wildlife, green space and farmland. It clarified what land will be reserved for business and residential use. As well, the report includes the planning for major roads, transit corridors, utilities and other regional infrastructure, including water and wastewater. The Sustainable Halton project lead to the development of ROPA 37 and 38.

Relevance:

The Sustainable Halton Project was the precursor to the Official Plan amendments. As Sustainable Halton is implemented, it will define a strategy and approach to manage urban sprawl optimizing the use of infrastructure, with a view to protecting natural resources and preserving natural spaces and farmland.

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5. Background Review and Characterization

Region of Halton

Citizens' Priorities – Halton Region's 2011 to 2014 Action Plan (June 2011)

Purpose:

On June 22, 2011 Regional Council approved The Citizens' Priorities - Halton Region's 2011-2014 Action Plan. Each new term, Halton Regional Council develops a plan to reflect Council's priorities and focus on what services are important to Halton residents. It is the work plan that will set out Regional Council's agenda for the next four years.

Key Elements:

Key Initiatives and Key Actions include:

- Partnership – Demonstrate transparency and accountability by strengthening collaborative relationships between and among Halton Region, other government levels and government organizations, community agencies and Halton citizens.
- Infrastructure – plan, construct and maintain a complex and integrated system of physical structures to deliver drinking water Halton residents and disposal of wastewater in an efficient and sustainable manner
- Environmental Protection and Conservation of Water – protect water quality and the natural environmental through effective treatment, source protection, conservation and adherence to regulations.
- Waste Management
- Planning Sustainable Communities – implement the Halton Regional Official Plan: a series of goals, objectives and policies to manage change and the effects of growth on the social, economic and natural environment of Halton.

Relevance:

The Citizen's Priorities sets out Council's commitment for the next four years. There is a focus on the protection of the natural environment as well as the principle of sustainable development. This is consistent with the direction taken by the Town of Oakville and would be consistent with the objectives/goals of a Water Sustainability Plan.

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5. Background Review and Characterization

Region of Halton

Sustainable Halton Water and Wastewater Master Plan (October 2011)

Purpose:
A region-wide review, evaluation, and development of water and wastewater servicing strategies for all urban service areas. The Master Plan builds on the previous work undertaken as part of the South Halton Master Plans and Updates, related studies in the North Halton systems and the Wastewater Pumping Station Capital Needs Assessment and Master Plan Study for Oakville and Burlington.

Key Elements:
Includes the identification of Regional Infrastructure needs including 12 Schedule A projects, 222 Schedule A+ projects, 30 Schedule B projects, and 11 Schedule C projects, in accordance with the Municipal Class Environmental Assessment Process.

Relevance:
The Water and Wastewater Master Plan directs Regional initiatives related to the upgrade or replacement of water and wastewater infrastructure. A Water Sustainability Plan initiative would need to ensure that the improvements/upgrades to the water/wastewater are consistent and with the sustainability principles in the Water Sustainability Plan.

5. Background Review and Characterization

Conservation Halton

2009-2013 Strategic Plan *Towards a Healthy Watershed*

Purpose:
Conservation Halton's Strategic Plan, *Towards a Healthy Watershed*, guide environmental protection efforts to ensure that the watershed's health will be maintained or enhanced while meeting the current and future needs of local communities. The strategic plan identifies both current and long-term priorities for the organization. It also tells watershed residents, municipal partners and all other stakeholders what the organization's Board of Directors and staff thinks is important.

Key Elements:
The plan is divided into five main themes – environment, parks, education, community and governance -- reflecting the mandate and activities of Conservation Halton.
Theme 1: Environment
Theme 3: Education

Relevance:
Conservation Halton's Strategic Plan sets out the planning direction for the conservation authority. The built in feedback to the Conservation Board and to the general public holds the Conservation Authority responsible for its actions and will identify if the Conservation Authority is meeting its goals. The Water Sustainability Plan will have to be aware of the Authority's goals and actions for the coming years in order to remain in-step.

5. Background Review and Characterization

Conservation Halton

Ontario Regulation 162/06 – Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation

Purpose:

The Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation allows Conservation Halton to regulate development within wetlands, shoreline hazards, valley systems and their associated allowances with respect to flooding, erosion, dynamic beaches, conservation of land and pollution. Development on lands adjacent to wetlands (varies from a distance of 30 m to 120 m adjacent to wetlands depending on significance and/or size of wetland) is regulated with respect to potential hydrologic impacts to the wetland. The regulation also allows Conservation Halton to regulate alterations and interferences to watercourses and wetlands.

Key Elements:

All applications for permission under Ontario Regulation 162/06 are submitted directly to Conservation Halton (though there is frequently an overlap with Planning Act application reviews due to related issues and coinciding responsibilities). The Town is copied on all approvals within their jurisdiction. The Region and the Town are subject to obtaining all necessary approvals from Conservation Halton pursuant to Ont. Reg. 162/06 for their own projects.

Relevance:

The Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation is the main regulatory agent that the Conservation Authority has to regulate development in its jurisdiction. Any policies or initiatives developed under the Water Sustainability Plan will have to adhere to the Authority's restrictions under this regulation.

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5. Background Review and Characterization

Conservation Halton

Long Term Environmental Monitoring Program

Purpose:

The Long Term Environmental Monitoring Program (LEMP) is designed to monitor species, ecosystems and changes to the watershed over time. Watershed report cards are published on the health of various watersheds. It helps ecologists and land use planners in obtaining the quantitative information they need to establish targets and make informed decisions for the planning, management and/or rehabilitation of our natural resources.

Key Elements:

Monitoring is completed on a two-year cycle with a focus on a particular watershed and/or watershed group each year (Grindstone Creek 2006, Bronte Creek 2007, Urban Creeks 2008, Sixteen Mile Creek and Grindstone Creek 2009).

Tier 1 Indicators
Tier 2 Indicators
Tier 3 Indicators

Relevance:

Monitoring of natural systems including water resources will be necessary to ensure that current policies are working to achieve their specified goals. Monitoring will also need to be fundamental component of a Water Sustainability Plan, hence the co-ordination and alignment of these programs is expected to be integral to any future plans

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6. Issues and Opportunities

As part of the Background Review and Characterization the team has identified Water-based Public Services as follows:

1. *Stewardship/Education*
   - Children's Education
   - Forest Stewardship
   - General Public
   - Water Efficiency
2. *Monitoring*
   - Climate/Meteorological
   - Ecosystem Change
   - Water Quality
   - Water Quantity
3. *Operations, Maintenance and Management/ Capital Planning of Water-based Infrastructure (built and natural)*
   - Stormwater Management
   - Storm Sewer
   - Watercourses
   - Shorelines
   - Water and Wastewater
   - Food Control
4. *Land Development/Land Use*
   - Urban Uses
   - Natural Features
   - Forest Management
   - Process
5. *Environmental Sustainability*
   - Policy
6. *Design Standards*
   - Stormwater Management
   - Urban Design
   - Water and Wastewater
7. *Emergency Planning/Procedures*
   - Flood Control
   - Spills Response
   - Climate Change
8. *Compliance/Enforcement*
   - Natural Areas
   - Storm Sewer
   - Building Code
   - Natural Hazards
9. *Natural Heritage/Green/Open/Park Space*
10. *Other? Financial*

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6. Issues and Opportunities

- The individual service-based matrices have lead to an initial identification of Issues and Opportunities defining where there may be competing or complementary services and/or gaps.

Matrix

Preliminary Issues and Opportunities

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7. Round Table Discussion

- Discussion topics include:
  - Any missing information i.e. Public Service, Public Sector Roles, program elements etc.
  - Input on Issues and Opportunities.

8. Schedule

▪ Receive input from Halton Municipalities	-	End of March
▪ Consult with other Municipal Representatives	-	Early April
▪ Prepare Draft Study Report	-	End of April
▪ Review with Project Team	-	End of April
▪ Submit Final Reports	-	May 2012

Project Name: Town of Somewhere – Municipal Water Sustainability Plan		**Project No.:** TBD	
Project Type: Study/Framework		**Project Partners**: Town of Somewhere Ministry of the Environment Region of Somewhere Conservation Somewhere	
Start Date: TBD	**Target Completion:** TBD	**Version/Revision Number** TBD	**Date Submitted:** TBD

1. Project Purpose and Background (*Describes the purpose and background that will be used to justify the project and the main goals and objectives. Should be fairly high-level.)*

In 2010, the Ontario government passed the Water Opportunities Act which sets out a framework to help municipalities improve the efficiency of municipal infrastructure and services. The purpose of the Act is to:

- Foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
- Create opportunities for economic development and clean-technology jobs in Ontario; and
- Conserve and sustain water resources for present and future generations.

Part of the Water Opportunities Act describes a Municipal Water Sustainability Plan. In the context of the Town of Somewhere a Water Sustainability Plan is defined as:

"The document that outlines the visions, goals, strategies and actions proposed to manage our local water resources with the purpose of achieving, to the best of our abilities, the most efficient and wisest "use" of the water in an attempt to balance the needs of humans and the natural world, now and for future generations."

The Town of Somewhere is proceeding with the development of a municipal Water Sustainability Plan to help promote overall water efficiency as a cost effective way to generate additional water, wastewater and stormwater capacity. It is recognized that the management of water, wastewater and stormwater is governed by the Town of Somewhere, the Region of Somewhere, Conservation Somewhere as well as the Ministry of Environment through numerous policies, programs and procedures. There is a recognized need to maintain balance between human use/consumption and the natural environment and the development of an effective water efficiency plan will aid in achieving this goal.

The municipal Water Sustainability Plan will need to be consistent and assist the Town to reach the mandate set out in it guiding directives including its Corporate Strategic Plan (20__), Official Plan (20__), and Environmental Strategic Plan (20__).

2. Goals and Objective *(Outlines the key goals and objectives and should be presented in enough detail as to limit confusion across all parties involved. Also be depended on the focus of the study whether stormwater or water/wastewater)*

Goal:

Development of a municipal Water Sustainability Plan that satisfies the requirement detailed in the Regulation (Note: Regulation not yet in effect – expected in 2012) and the Water Opportunities Act (2010) while clearly meeting the Town's Vision, and Mission while ensuring a transparent process with continual public consultation.

Objectives

- Develop a Water Sustainability Plan that focuses on identifying innovative, cost effective solutions for water management.
- Effective and meaningful communication with the public and stakeholders throughout the study.
- Meet Town's objectives outlined in its Official Plan, and Environmental Strategic Plan as well as the Town's Sustainability Plan including (Oakville specific by way of example):
  - *Livable Oakville - 2.2.3 Achieving sustainability in order to:*
    - *a) Minimize the Town's ecological footprint*
    - *b) Preserve, enhance and protect the Town's environmental resources, natural features and areas, natural heritage systems and waterfronts; and,*
    - *c) Achieve sustainable building and community design.*
  - *Environmental Strategic Plan Goals*
    - *Goal 1 to sustain and enhance the natural environment*
    - *Goal 4 To create and support a healthy and resilient community*

3. Key Milestones *(outline the key milestones to ensure that there is clear direction and timing for the project)*

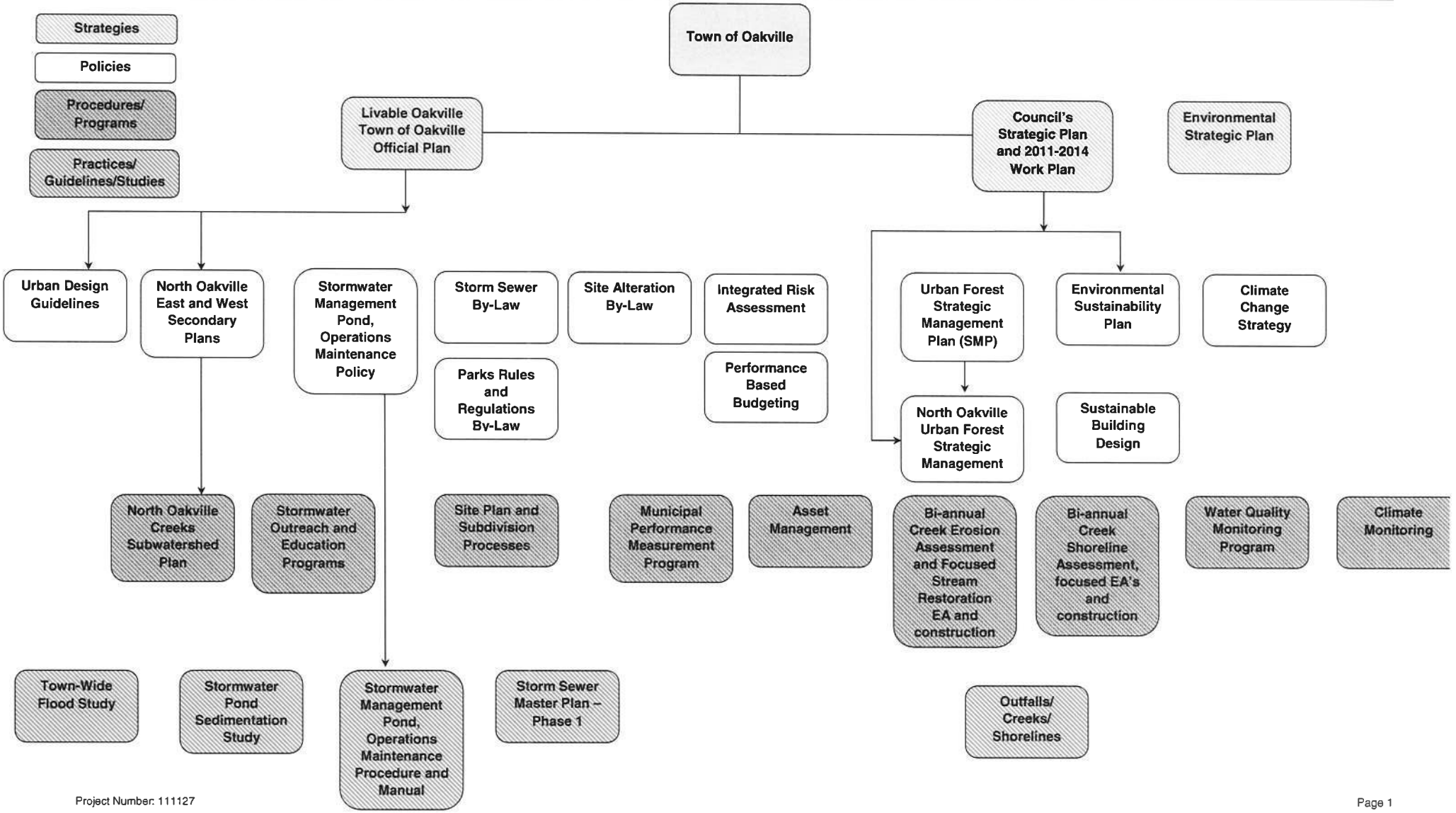
High-Level Milestones	Target Completion
• Project Initiation Meeting	•
• Asset Management Report	•
• Public Consultation Process	•
• Risk Assessment	•
• Financial Plan	•
• Draft Water Sustainability Plan (available for public review)	•
• Final Water Sustainability Plan	•

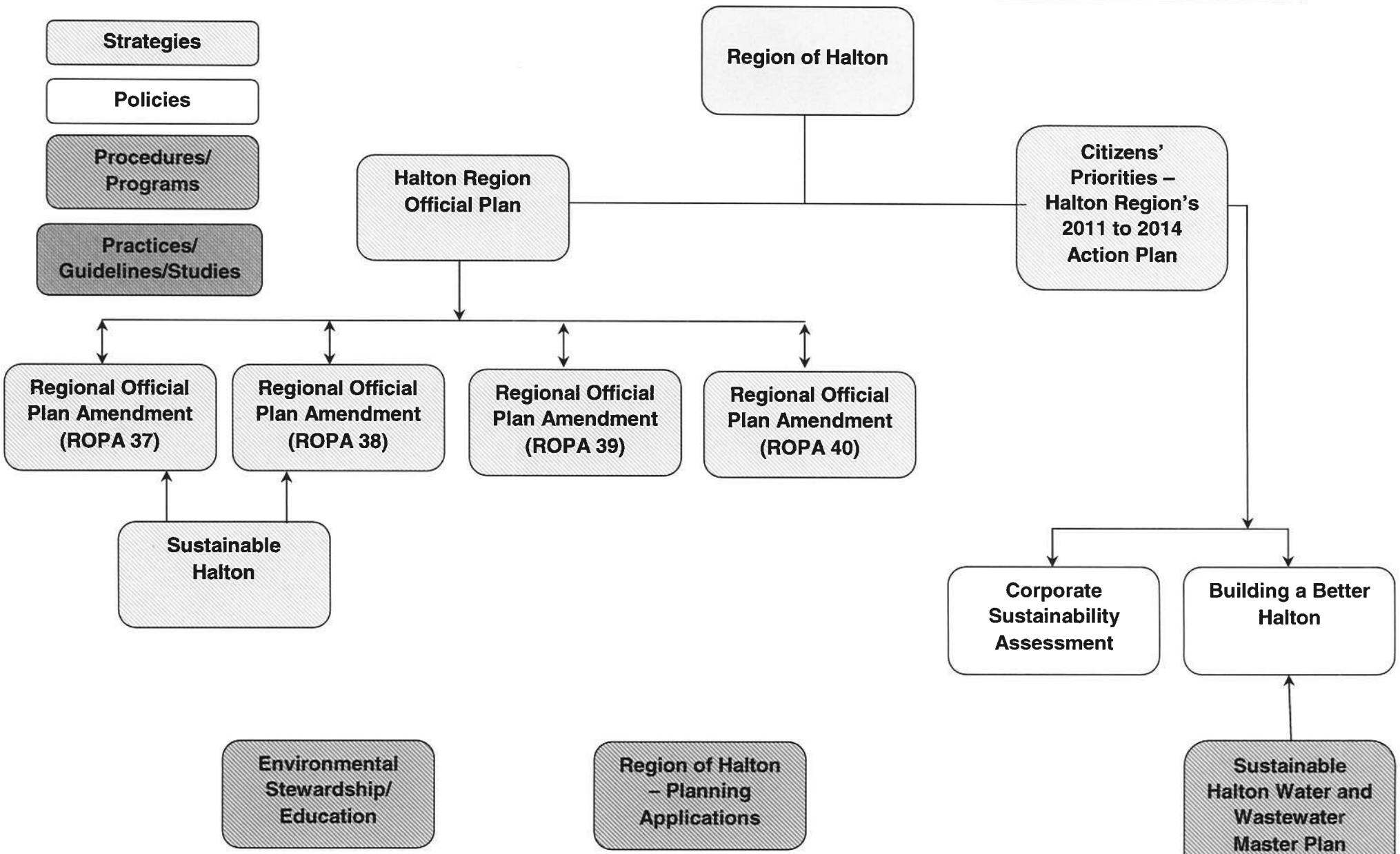
4. Project Team Requirements *(outlines key team members and will be dependent on the lead authority and whether the emphasis is on stormwater or water/wastewater)*

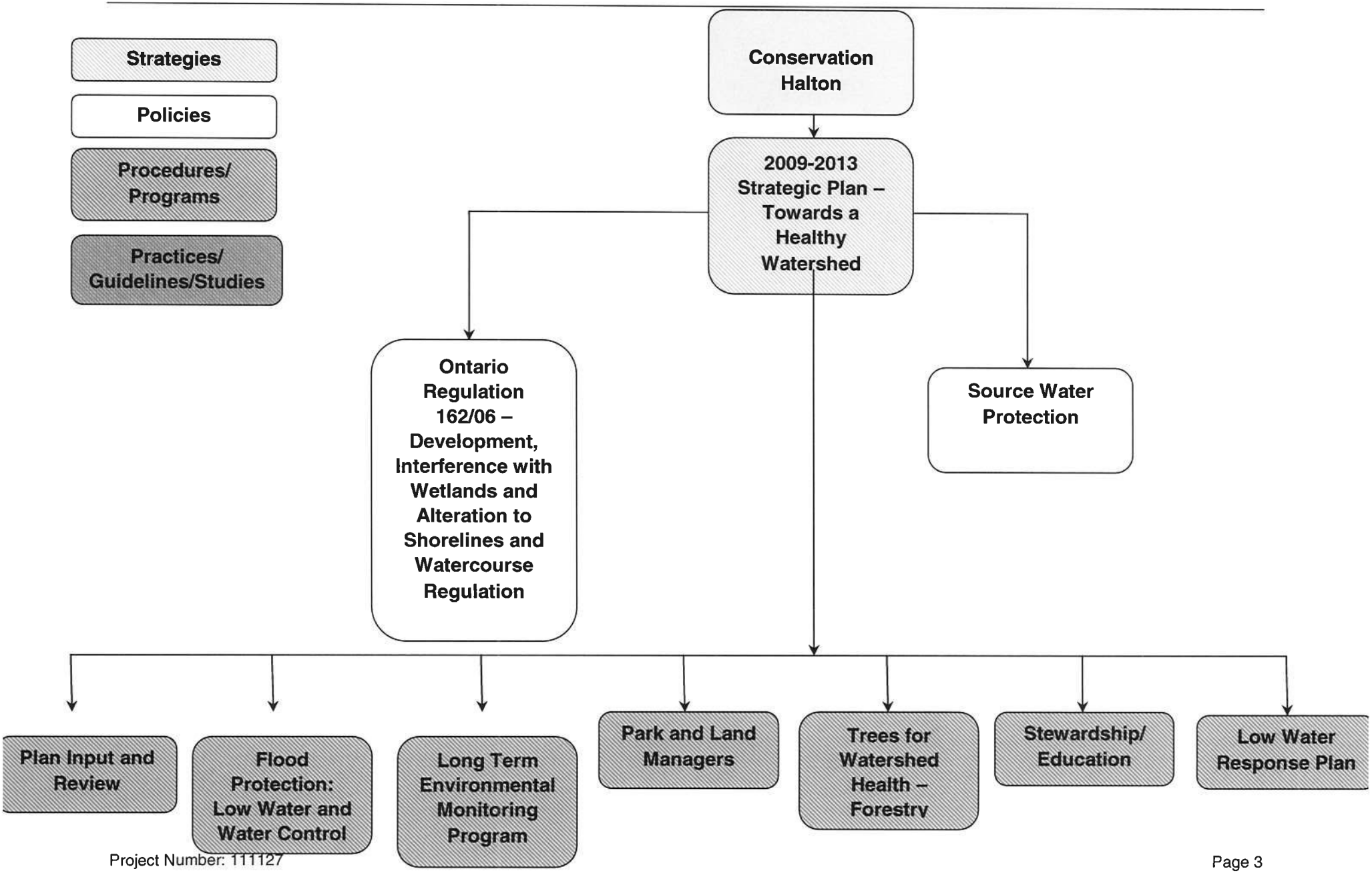
Name	Organization	Project Role\Areas of Responsibility
TBD	Town of Somewhere	Project Sponsor/Overall Manager
TBD	Town of Somewhere	Stormwater Development Lead
TBD	Town of Somewhere	Stormwater Capital Lead

TBD	Town of Somewhere	Environmental Lead
TBD	Ministry of the Environment	Ministry of the Environment Advisor
TBD	Region of Somewhere	Agency Stakeholder
TBD	Great Lakes & St. Lawrence Cities Initiative	Agency Stakeholder
TBD	Conservation Somewhere	Agency Stakeholder

Acceptance & Sign-Off		
Prepared By:		
Project Manager	*Signature*	*Date*
Approved By:		
Project Sponsor	*Signature*	*Date*
Approved By:		
Executive Sponsor	*Signature*	*Date*


Strategies
Policies
Procedures/ Programs
Practices/ Guidelines/Studies
Town of Oakville
Livable Oakville Town of Oakville Official Plan
Council's Strategic Plan and 2011-2014 Work Plan
Environmental Strategic Plan
Urban Design Guidelines
North Oakville East and West Secondary Plans
Stormwater Management Pond, Operations Maintenance Policy
Storm Sewer By-Law
Site Alteration By-Law
Integrated Risk Assessment
Parks Rules and Regulations By-Law
Performance Based Budgeting
Urban Forest Strategic Management Plan (SMP)
Environmental Sustainability Plan
Climate Change Strategy
North Oakville Urban Forest Strategic Management
Sustainable Building Design
North Oakville Creeks Subwatershed Plan
Stormwater Outreach and Education Programs
Site Plan and Subdivision Processes
Municipal Performance Measurement Program
Asset Management
Bi-annual Creek Erosion Assessment and Focused Stream Restoration EA and construction
Bi-annual Creek Shoreline Assessment, focused EA's and construction
Water Quality Monitoring Program
Climate Monitoring
Town-Wide Flood Study
Stormwater Pond Sedimentation Study
Stormwater Management Pond, Operations Maintenance Procedure and Manual
Storm Sewer Master Plan – Phase 1
Outfalls/ Creeks/ Shorelines


Strategies
Policies
Procedures/ Programs
Practices/ Guidelines/Studies
Region of Halton
Halton Region Official Plan
Citizens' Priorities – Halton Region's 2011 to 2014 Action Plan
Regional Official Plan Amendment (ROPA 37)
Regional Official Plan Amendment (ROPA 38)
Regional Official Plan Amendment (ROPA 39)
Regional Official Plan Amendment (ROPA 40)
Sustainable Halton
Corporate Sustainability Assessment
Building a Better Halton
Environmental Stewardship/ Education
Region of Halton – Planning Applications
Sustainable Halton Water and Wastewater Master Plan


Strategies
Policies
Procedures/ Programs
Practices/ Guidelines/Studies
Conservation Halton
2009-2013 Strategic Plan – Towards a Healthy Watershed
Ontario Regulation 162/06 – Development, Interference with Wetlands and Alteration to Shorelines and Watercourse Regulation
Source Water Protection
Plan Input and Review
Flood Protection: Low Water and Water Control
Long Term Environmental Monitoring Program
Park and Land Managers
Trees for Watershed Health – Forestry
Stewardship/ Education
Low Water Response Plan

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
1. Stewardship/Education						
a) Children's Education	Lake Level sponsor of Halton Children's Water Festival (Halton Children's Water Festival)	Importance of ground and surface water – elementary schools (Halton Children's Water Festival)	Importance of ground and surface water – elementary schools (Halton Children's Water Festival)			The Groundwater Foundation community groups Oakvillegreen school boards other Halton municipalities
	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)			Trout Unlimited
	Glenburnie School in Oakville sponsors a stormwater management pond		Awareness of local watersheds/watercourses – elementary schools (Streams of Dreams)			
b) Forest Stewardship	Education for invasive species response (Gypsy Moth/Emerald Ash Borer),					NGOs: conduct garlic mustard pulls (Oakville Horticultural Society), tree plantings (Oakvillegreen, Groundbreakers, many community groups)
		Funding for preparation of forest management plans (Woodlands Stewardship Program)		Private Lands Forest Stewardship – Ministry of Natural Resources (Trees Ontario)		
		Purchase and planting of nursery stock (Woodlands Stewardship Program)	Volunteer tree planting and educational program (Trees for Watershed Health)			
	Recommendations for improvements to the forest stewardship program (Urban Forest Strategic Management Plan)					
c) General Public	Engage the community as stewards of the environment (Environmental Sustainability Plan and Procedures)			Ontario Stewardship Council – Ministry of Natural Resources		
	Education and capacity building (Environmental Strategic Plan)		Outdoor educational interpretive programs (Strategic Plan)			
	Partners with the Blue W non-profit organization	Facilitates rain barrel sales, toilet rebate incentives				

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
		programs				
			Deliver strong community stewardship programs (Hamilton-Halton Watershed Stewardship Program)			
d) Water Efficiency		Efficient use of potable water (i.e. outdoor water use restriction, water efficient fixtures and appliances, etc.)				Ontario Water Works Association
2. Monitoring						
a) Climate/ Meteorological	Climate Monitoring (weather stations)	Weather Stations	Weather Stations	Ministry of the Environment	Water Survey of Canada - Environment Canada	McMaster University
b) Ecosystem Change	State of Environment Reporting including watercourse reporting		Species and ecosystem (Long Term Environmental Monitoring Program)	Provincial Water Quality and Groundwater Monitoring Networks – Ministry of the Environment Provincial Water Quality and Groundwater Monitoring Networks – Ministry of the Environment	Marsh Monitoring Program – Environment Canada Species at Risk Programs/ Recovery Plans	
c) Water Quality	Water quality monitoring at stormwater management ponds, storm sewers, outfalls, and creeks (Water Quality Monitoring Program – annual also through development applications)		Surface water and groundwater quality monitoring throughout watershed (Long Term Environmental Monitoring Program)	Ministry of the Environment - special studies, e.g. for phosphorus/algae (cladophora) studies – also defines water quality protection levels for streams etc.		
		Lake Intake Water Quality Monitoring				
		Water Treatment Plant Quality Monitoring of Effluent				
	Stormwater management ponds – sedimentation, water quality, hydraulic function (Stormwater Pond Sedimentation Study)					

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
d) Water Quantity	Assessment at Dundas Street and data available through development applications	Quantity of available drinking water	Water level monitoring (Flood Protection and Low Water and Water Control)	Surface Water Monitoring Centre – Ministry of Natural Resources		
3. Operations, Maintenance and Management/Capital Planning of Water-based infrastructure (built and natural)						
a) Stormwater Management Ponds	Design and use of stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)			Ministry of the Environment Certificate of Approval Process (Now ECA)		
	Maintenance of stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)					
b) Storm Sewer	Capital projects – major and minor systems (Storm Sewer Master Plan)					
c) Watercourses	Erosion assessment (Bi-annual Creek Erosion Assessment and Stream Restoration EA and Construction Projects)		Permitting of Regulated Waterways		Fisheries Act Authorization	
	Stream restoration EA's and capital projects (Bi-annual Creek Erosion Assessment and Stream Restoration EA and Construction Projects)		Permitting of Regulated Waterways		Fisheries Act Authorization	
	Flood mitigation capital projects (Town-Wide Flood Study)		Permitting of Regulated Waterways	Ministry of Natural Resources LRIA		
d) Shoreline	Shoreline erosion assessment (Bi-annual Shoreline Assessment, focused EA's and construction projects)		Permitting of Regulated Shorelines			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
	Shoreline erosion mitigation - capital projects (Bi-annual Shoreline Assessment, focused EA's and construction projects)					
e) Water and Wastewater		Review, evaluation of water and wastewater servicing strategies (Sustainable Halton Water and Wastewater Master Plan and Citizen's Priorities – Halton Region's 2011 to 2014 Action Plan)				
	Sustainable Building Design Guidelines (Livable Oakville and North Oakville Secondary Plans)	Capital projects (Building a Better Halton and Sustainable Halton Water and Wastewater Master Plan)				
	Innovative programs/ practices coming in (e.g. new transit facility is using rainwater capture system to supply bus wash water)					
f) Flood Control	Operation and Maintenance of Stormwater Management Ponds		Operations and maintenance of flood control structures and channels (Flood Protection: Low Water and Water Control)	Conservation Ontario		
	Flood Study (Town wide Flood Control Study)					
4. Land Development/Land Use						
a) Urban Uses	Land use and associated patterns including land to be developed and protection of natural features (Livable Oakville Town of Oakville Official Plan and North Oakville East and West Secondary Plan)	Land use and associated patterns including land to be developed and protection of natural features (Halton Region Official Plan and Amendments and Sustainable Halton)	Land use and associated patterns including land to be developed and protection of natural features (Plan Input and Review and Ontario Regulation 162/06)	Ministry of Municipal Affairs and Housing		
		Official Plan Amendments (Region of Halton – Planning Applications)	Official Plan Amendments (Plan Input and Review)			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
			Development within and adjacent to wetlands/watercourses (Ontario Regulation 162/06)	Ministry of Natural Resources		
b) Natural Features	Sustain and enhance the natural environment (Environmental Strategic Plan 2011 Update and North Oakville Creeks Subwatershed Study)		Develop and enhance a natural heritage system (Strategic Plan)			
c) Forest Management	Urban Forest Management (Urban Forest Strategic Management Plan and North Oakville Urban Forest Strategic Management Plan)	Large Woodlots Designation (Tree By-law)		Ministry of Natural Resources		
d) Process	Site grading and Erosion and Sediment Control review and process (Site Alteration By-law)		Site grading and Erosion and Sediment Control review (Plan Input and Review)			
	Site Plan and Subdivision review and process (Site Plan and Subdivision Process)		Site Plan and Subdivision review (Plan Input and Review)			
	Environmental Implementation Report review and process (e.g. North Oakville Creeks Subwatershed Study)		Environmental Implementation Report review (Plan Input and Review)			
5. Environmental Sustainability						
a) Policy	Corporate Sustainability (Environmental Sustainability Policy and Procedures)	Corporate Sustainability (Corporate Sustainability Assessment)	Towards a Healthy Watershed (Strategic Plan 2009-2013)			
	Sustainable Communities (Council's Strategic Plan and 2011-2014 Work Plan)	Sustainable Communities (Citizen Priorities – Halton Region's 2011 to 2014 Action Plan)				
	Climate Change Policy (Climate Change Strategy)					
	Sustainable Building Design Guidelines					

Public Service		Public Sector Roles					
		Town of Oakville	Region of Halton	Conservation Halton	Other		
					Provincial	Federal	Non-Government Organization
6.	**Design Standards**						
a)	**Stormwater Management**	Stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)			Ministry of the Environment		
b)	**Urban Design**	Urban Design (community) (Urban Design Guidelines for Livable Oakville)		Urban Design (Ontario Regulation 162/06)			
		Sustainable Building Design Guidelines					
c)	**Water and Wastewater**		Water re-use, grey water system and sewer use by-law				
7.	**Emergency Planning/Procedures**						
a)	**Flood Control**	Emergency planning and flood warning (Town Wide Flood Study)		Emergency planning and flood warning (Flood Protection: Low Water and Water Control)			
b)	**Spills Response**	Town wide procedure	Region wide procedure				
c)	**Climate Change**	Climate change adaptation plan					
8.	**Compliance/Enforcement**						
a)	**Natural Areas**	Parks and other natural areas (Parks Rules and Regulation By-laws)		Parks and other natural areas (Park and Land Managers)			
		Tree protection initiatives (by-law and site plan requirements)					
b)	**Storm sewer**	Uncontrolled discharge to storm sewer (Storm Sewer Use By-law)					
c)	**Building Code**	Water efficient fixtures					
d)	**Natural Hazards**			Development within and adjacent to Wetlands,			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
			Watercourses, Shorelines and associated hazards (Ont. Reg. 262/06)			
9. Other						
a) Financing	Town programs including: Asset Management, PB2 Budgeting, Risk Assessment Policy, and 1% Infrastructure Capital Assessment to ensure infrastructure renewal					
10. Natural Heritage/Green/Open/Park Space – Operations, Maintenance, Management/Capital Planning						
b)						

1. *Stewardship/Education*

Issues	Opportunities
a) General lack of programs to adults	a) Can information be better shared amongst partners/standardize?
b) Potential need for more Provincial support	b) Can messaging around water be more centralized? Less confusing to citizens?

2. *Monitoring*

Issues	Opportunities
a) General lack of co-ordination – upper and lower tier need to co-ordinate	a) Funding of respective programs can be better optimized through pooling efforts, perhaps needs a central champion/lead specifically sharing of data and analysis
b) Standards for collection (equipment, protocols) need to be harmonized for programs to be effective	b) Potential to link with radar/satellite processes
c) Coverage needs to be increased to take into account spatial variability/ and increased intensity/frequency of storms (Climate Change)	
d) Need consideration for broader-based sampling and meteorological data collection	
e) Is sufficient analysis being completed on the data that is being collected (staff resource limitation issue)	

3. *Operations, Maintenance and Management/Capital Planning of Water-based Infrastructure (built and natural)*

Issues

a) Typically maintenance is insufficient in terms of scope and frequency

b) Need for integration of water/wastewater/stormwater system Master Plans including roadway reconstruction

c) Need for resources/co-ordination with respect to major flood control systems managed by Conservation Halton/Province

d) Improve coordination of management efforts by managing studies with inter-department/inter-agency technical teams

e) Need for training

Opportunities

a) Can stormwater management infrastructure be designed more effectively to reduce maintenance (i.e. forebays, LID BMP's)

b) Erosion/Flood Management and resources of Town and Conservation Halton can be optimized with respect to open watercourse systems.

4. *Land Development/Land Use*

Issues

a) Integrated role of Urban land use planning meshing objectives of Region, Town, Conservation Halton, and Proponents continues to be protracted; streamlined processes needed

b) Need for clarity/consistency with respect to emerging issues related to natural systems (i.e. Bobolink/wetlands, other ESA matters)

c) Need for training

Opportunities

a) Forest Management can have potential benefit from stronger partnership with Provincial and local stakeholders

b) Potential to build/encourage more passive on lot measures (LID BMP's) and green infrastructure which reduces reliance and need for end-of-pipe stormwater management and improves level of impact on receiving systems – to be used to reduce demand on water supply

5. *Environmental Sustainability*

Issues	Opportunities
a) How best to transition sustainability principles into tangible on-the-ground action	a) Partnering with other municipalities to develop risk-based approaches to infrastructure assessment (eg. PIEVC – Engineers Canada)
b) How best to monitor/measure success (i.e. reduced water use; increased rainwater harvesting; uptake of LID BMP's)	b) Integration/partnership with respect to other agencies and stakeholders as related to monitoring
c) Inconsistent/Diverse perspectives on Climate Change approaches and directives for building resiliency in infrastructure	c) Investigate new technologies/methods/ tools that may be available to reduce water losses, etc. Includes communications/ sharing of knowledge with other municipalities

6. *Design Standards*

Issues	Opportunities
a) Emerging issues require clarity: • Climate Change • Regional Storm Management • LID BMP Design • Flood Control • Urban Design/Zoning	a) Urban Design Guidelines need to consider more application of LID BMPs and other on-lot/building-oriented standards which reduce ecological impacts particularly to stormwater and other water-based systems
b) Consistency amongst Municipalities and Conservation Authorities	b) Urban design (and other) guidelines need to consider opportunities to utilize stormwater to reduce demands on the water supply (i.e. rain harvesting)

7. *Emergency Planning Procedures*

Issues	Opportunities
a) None currently known with respect to water and wastewater this is likely a gap in knowledge only	a) Excellent synergy between the Town of Oakville and Conservation Halton on flood response and management planning: Town-wide Study needs to be advanced to implementation stage; co-ordination with MNR on criteria and standards related to Regional Storm flood control
b) Potential inconsistency between provincial guidelines and emergency response providers approach to flooded areas	

8. Compliance/Enforcement

Issues	Opportunities
a) Enforcement of applicable by-laws – constrained by by-law staff resources	a) Improve coordination between jurisdictions

9. Natural Heritage/Green/Open Park Spaces

Issues	Opportunities
b) TBD	a) Share expertise between agencies on effective management practices within open spaces that benefit water resources

10. Other

- Financial

Meeting Summary

May 10, 2012
File: TP111127-75

Subject: Developing a Process to Prepare a Water Sustainability Plan
Ontario Municipality Focus Group Session

Date: April 11, 2012 @ 9:00 a.m.

Location: Oakville Room, Town of Oakville Town Hall

Attendance:

Umar Malik	➢	City of Burlington
Jamal Syed	➢	City of Cambridge
Nahed Ghbn	➢	City of Hamilton
Rob Norman	➢	City of Hamilton
Nick Gollan	➢	City of Kitchener
Muneef Ahmed	➢	City of Mississauga
Patrick Lee	➢	City of Oshawa
Bruno Bianco	➢	City of Peterborough
Marilee Gadzovski	➢	City of Pickering
Saad Yousaf	➢	City of Vaughan
Denise McGoldrick	➢	City of Waterloo
Ohi Izirein	➢	Town of Caledon
Steve Grace	➢	Town of Halton Hills
Martin Bateson	➢	Town of Milton
Philip Kelly	➢	Town of Oakville
Kristina Parker	➢	Town of Oakville
Rita Juliao	➢	Town of Oakville
Cindy Toth	➢	Town of Oakville
William Witners	➢	Town of Richmond Hill
Marie Rosati	➢	Halton Region
Ric Robertshaw	➢	Region of Peel
Peter Barbisan	➢	Region of Peel
Steve Gombos	➢	Region of Waterloo
Frank InFante	➢	Region of Waterloo
Neil Levesque	➢	Ministry of the Environment
Janette Brenner	➢	Conservation Halton
James Etienne	➢	Grand River Conservation Authority
Sameer Dhalla	➢	Toronto and Region Conservation Authority
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Meeting Summary
April 11, 2012

The following provides a summary of key points raised in discussion related to the process to prepare Water Sustainability Plans based on the Focus Group Session held April 11, 2012. The meeting summary is not intended to be a repeat of the presentation per se, but rather a highlight and summary of the questions asked and associated responses, as well as the key messages derived from the Breakout Sessions.

1. General Points

i) Setting the benchmarks and/or standards to be achieved for a Water Sustainability Plan was discussed. It was noted that no clear direction is offered in the current documentation and that this may become somewhat clearer through the Regulations. For the time being, it has been suggested that the Municipalities will establish the Targets and Goals.

ii) It is clear that the Water Sustainability Plan will be a "living" document, and as such will need to have an update frequency. The actual definition around this is not currently known and Ministry of the Environment (MOE) will need to advise.

iii) The Water Sustainability Plan development and associated process will likely influence existing Municipal priorities for programs and studies.

iv) There are no straightforward jurisdictional models that apply to more than a few municipal structures, i.e. single tier or two tier. Every tier may have variations in structure, roles, responsibilities and jurisdiction, e.g. single tier – municipal only or combination of municipal and utility; two tier – any possible combination of water, wastewater, stormwater and road jurisdictional splits of treatment, distribution/collection (shared pipes), management, regulatory influences.

v) Some municipalities have Federal operations within their areas that require inclusion of federal mandate/jurisdiction, e.g. airport.

vi) Suggest that any model for WSP development be positioned on a 'flexible platform' and reflects that a WSP must incorporate an 'adaptive management approach' to produce a 'living' document to allow application to many different municipal organizations and provide for the expected pace of change, e.g. budget ups and downs, staffing increases or decreases, changing regulations, standards, public expectations, etc.

vii) Model Development Process should include identifying gaps and ability to recognize that they would be filled over time that may be subject to other factors, budget cuts, etc.

2. Breakout Sessions

During the course of the Focus Group meeting, four (4) separate breakout groups were called upon to provide input as follows:

I) Confirm or add to the list of water-based public services.

II) Input on Issues and Opportunities.

III) Input on potential future external stressors related to the delivery of water-based public services.

IV) Insight into the potential application and/or benefit of New Technologies and Practices (focus on stormwater)

I. Water-based Services:

i) Suggest splitting #4 Land Development/Urban Land Use into two components to reflect short term and long term planning
ii) #3 Infrastructure Life Cycle (age of municipality will be a major factor)
iii) #3 look at separating water and wastewater (water supply, water transmission and distribution, wastewater collection and treatment)
iv) #5 Sustainability is more overarching versus a specific water based services – consider part of everything
v) Level of complexity varies between small/large/rural/urban municipalities
vi) Continuous improvement model/practice part of all services
vii) Issues with performance metrics (i.e. what will be measured, not necessarily targets which are absolute)
viii) Potentially requires a scan of 'state of practice' in municipalities as related to municipal services
ix) Other areas could include Energy and Recreational Areas

II. Issues/Opportunities

The Breakout Groups reviewed the various water-based municipal services and offered the following input on issues and opportunities related to each.

***A.* Stewardship/Education**

Issues

i) Some programs are delivered by staff not involved in front-line work, e.g. outreach by parks staff, sustainability office staff, communications staff
ii) Often in times of economic downturn the outreach programs are cut or put on the table for potential cuts first since their value is often difficult to 'quantify'
iii) Often not seen as priority since outcomes/benefits not clear/quantified
iv) Continual uptake of programs and educational pieces - some programs have become stagnant even though funding is still available.

Opportunities

i) Better coordination of messaging to address priorities, e.g. basement or surface flooding, downspouts, dumping down storm catchbasins, etc. can get public to take actions that would help solve an ongoing problem, and produce more informed, accurate messaging, a better product and therefore better awareness.
ii) Link outreach to risk management with associated business case (with outcomes) to rationalize budget/staff commitment
iii) Develop approach to better define expectations/outcomes/value to public (business case)
iv) Ability to pool efforts and money to streamline consistency - the age of the audience influences media and the approach to use.
v) Use of a 'credit policy/program' (i.e. City of Kitchener Stormwater Utility Rate/Program) - partner with an organization like Green Communities Canada for the development and implementation of an educational component to a 'credit policy/program'
vi) Consider strategic corporate messaging and priorities to determine level of messaging

Other

i) Need to define target audience and tools for key messaging
ii) Need periodic review and update of key messaging
iii) Role for Province to lead in the development of educational resources
iv) Determine what types and messaging that works then share resources (provincial role?)
v) Need for inter-department and inter-agency awareness of material.
vi) The general public do not understand technical terminology (i.e. what a 100 year storm event means) - this limits the general public appreciation of the work being completed by municipalities
vii) There is a need for consistent messaging across municipalities and with the Conservation Authorities

B. Monitoring

Issues

i) Need to start monitoring stormwater management ponds prior to assumption; mechanism needs to be put in place requiring staff support and political will to require monitoring and clean out by developers
ii) Many municipalities are at differing stages of monitoring for meteorological and water quality data (ponds/receiving waters/outfalls, etc.)
iii) There is a need for better understanding of what is available/objective to share/disseminate information (use of a central database) eg. the City of Kitchener is in the process of creating a central database which will include standard formats and protocols used for the data collection. The database will be available to all through the use of a data licensing agreements.
iv) Need to recognize scale – weather (broad) versus sewer (local) performance
v) Need for consistent reporting and analysis of data being collected

Opportunities

i) Quality control on assumed ponds, assumption of ponds with 'design' functionality, reduction of assumed risks
ii) Through sharing can reduce/spread costs and staff resource needs (MOE has new 'gateway')

C. Operations/*Maintenance*, etc. (Infrastructure Life Cycle)

Issues

i) Many municipalities are dealing with old infrastructure and will need to deal with retrofit of existing infrastructure – will need to be a priority
ii) Need for innovation in approach to stormwater management facility maintenance
iii) Disconnect between revenue stream – water rates vs. stormwater rates
iv) There is no reporting mechanism for operation/maintenance programs - the results are not disseminated to staff or other interested parties
v) Operations and Maintenance are done annually but there is 10-yr capital planning and 20-yr development charges planning – there is a need for future planning

Opportunities

i) Better planning for assumption responsibilities including operational budget and staff requirements
ii) Review by a broader number of departments (planning, development, public works, engineering, parks, etc.) can result in better understanding of assumption issues, e.g. number of ponds, state of ponds upon assumption, even possibly identifying better technical options or defining constraints early to avoid management issues later
iii) Better define life cycle costs in the planning and design stages

Other

i) May be able to utilize the existing asset management program (most municipalities currently have one) to design/implement a operations/maintenance program

D. Land Development/Urban Land Use

Issues

i) Development Application Review and Site Plan Review require explicit discussion and analysis (mapping out review process) since many issues relate to the ineffectiveness of existing review circulation processes both internally and externally (same as above).
ii) Provincial Places to Grow intensification requirements for 'growth areas' do not seem to present many opportunities – just increasing pressure on existing infrastructure (including green infrastructure) without consideration of accompanying servicing capacity constraints.
iii) Ontario government planning municipalities by numbers - conflicting information and policies between the various levels of government also with the Conservation Authorities

Opportunities

i) Create a process for coordination (between levels of government and approval authorities) for review of planning/development applications. This may allow for flexibility with requirements during the review process

Other

i) Corporate – top down approach is favoured - Oakville good example as well as Caledon
ii) Influence of Source Water Protection on land development differs between different areas (Oakville – Lake, versus GRCA – ground-based water supply communities)

E. Environmental Sustainability

Issues

i) Sustainability often not spread throughout municipality, poorly understood, decision-making based on narrow focus instead of broader 'pillars'

Opportunities

i) Identify clear principles at the top that are connected to all municipal actions, can support projects integral to WSP (builds rationale), can define linkages more clearly, e.g. to urban forest management (protection, enhancement)
ii) MOE to regulate universal benchmark for measuring/monitoring LID and water use reduction including classification

Other

i) Perhaps not a specific service vs. overarching direction.
ii) Consider making part of whole e.g. Cindy Toth's role at Town
iii) Some municipalities are not willing to take on the issue of sustainability either due to lack of knowledge or resources (i.e. smaller lower tier municipalities)

F. Design Standards

Issues

i) MOE used to develop standards and best practice manuals in consultation with municipalities that served to (a) bring forward funded innovative municipal case studies/pilots, (b) establish a network of 'subject matter experts' with connection to MOE
ii) Development of standards that impact municipal work by external agencies without advising/consulting municipality
iii) Design standards that provide for equivalencies, e.g. technology other than Stormceptor, that is less well known, or technologies that may not be as effective (understood that there is move to less prescriptive approaches by the Province, but sometimes prescriptive is better, and supportive of innovation and QA/QC)
iv) Potential for municipal standards to be developed for future scenarios, i.e. climate change that include requirements which are different and at odds with existing Conservation Authority and Provincial permits or standards, e.g. bigger pipes/outfall, access roads to grates to deal with increased cleaning after more extreme weather events.
v) Climate change – moving target; IDF curves difficult to adapt to a Regional scale (not sophisticated enough)
vi) Individuals not knowing what information is available from various sources and accessing information

Opportunities

i) Dialogue, fostering innovation, promoting reward for risk-taking on pilot applications, transfer of knowledge/technology
ii) Develop standards in consultation or at least advising municipalities in order to support understanding, potential harmonization, avoidance of conflicts and improved compliance
iii) Specify more innovative technologies; implement better technologies (not cheaper)
iv) Development of a credit program through implementation of LID BMPs

G. Emergency Planning/Procedures

Issues

i) Notification and warnings are not disseminated down from the various levels of government and are not consistent – need for a coordinated plan/approach
ii) Current emergency planning more based on operation and maintenance
iii) Watermain (sinkholes) and wastewater pipes exposure (leaks) are risks.

Opportunities

i) Need to be able to connect to educational programs and emergency planning (interaction between water based public services)

H. Compliance/Enforcement

Issues

i) Enforcement tends to be on compliant basis only

Opportunities

i) Coordination between roles of Region/Conservation Authority/Municipalities (upper and lower)/MOE
ii) Consider link to spills management and response

J. Natural Heritage/Green Open Space

Issues

i) Conflicting issue between users (i.e. between passive use and recreational use (sports fields) – difficult to agree on the level of human use
ii) Private property
iii) Need to have a way to define the value of Green Infrastructure and natural spaces; consistency required

Opportunities

i) Dual use – quantity control and park space

K. Financial/Human Resources

Issues

i) Service level analysis required
ii) Funding – capital planning, staffing, operations and maintenance, and identification of other funding sources

Opportunities

i) Focus on better use of existing resources

Other

i) Overarching not really a service
ii) May highlight the short comings of other plans – needs to be a living document
iii) Crisis can become opportunity to get funding and support

L. Other

Add Risk Management

Issues

i) Often risk management value is not given enough publicity as a rationale for work (capital, operational, etc.);

Opportunities

i) Factor in risk management assessment into each Water-based Public Service (level of effort/degree of assessment to match potential risk) to better understand, e.g. impact on budget/staffing/resources upon assumption

Add Jurisdictional Mandates

Issues

i) As stated under General Points;

Opportunities

i) Clarify mandates, points of redundancy (sometimes this is good – multi-barrier, or spread costs/risk), points of overlaps and, importantly, gaps

III. Future External Stressors

i. Climate change
ii. Growth
iii. Changing regulatory requirements
iv. Technological improvements (require operations and maintenance of wider variety of technologies)
v. Pressure to sell off public lands that have WSP value (revenue generation, political), sometimes projects with associated lands go forward expecting lands to remain in public hands but this may not be the case

vi. Budgets
vii. Aging infrastructure
viii. Changing demographics/populations
ix. Competing priorities
x. Changing Provincial Policy(s)
xi. Infill and intensification
xii. Linking water/wastewater/stormwater resources to collectively work together – cumulative impacts and source to receiver watershed based approach
xiii. Increasing cost of commodities

IV. New Technologies and Practices

i. Often if on lot controls are installed, can be subject to owner influence causing reduced or no effectiveness, out of municipal control but still has been factored into design of stormwater controls on the public side (therefore relying on controls that may not function as expected)
ii. Application of new technologies, e.g. LIDs need fairly specific 'matrix' application to account for effectiveness in different areas, e.g. with clay, sand, etc
iii. Still difficult to balance existing level of conservatism in design that addresses risk and the potential for on lot controls to be less effective than designed over time
iv. Treatment train approach is being implemented, under a 'no regrets' approach

Meeting Summary prepared by,

AMEC ENVIRONMENT & INFRASTRUCTURE
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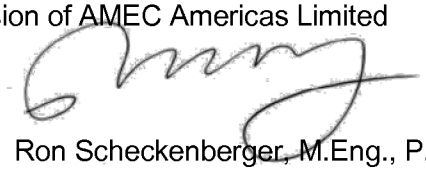


Per: Ron Scheckenberger, M.Eng., P.Eng.
Principal Consultant

HD/RBS/ll

Developing a Process to Prepare a Water Sustainability Plan

Southern Ontario Municipalities Focus Group

April 11, 2012

Agenda

9 a.m. to 10:15 a.m.

1. Introduction
2. Study Overview/Objectives/Outcomes
3. Purpose of Consultation
4. Review of Draft/Generic “Project Charter”
5. Background Review and Characterization

Break – 10:15 a.m. to 10:30 a.m.

6. Issues and Opportunities

11:00 a.m. to 1:00 p.m.

7. Breakout Session
8. Schedule

2. Study Overview/Objectives/Outcomes

Water Opportunities Act

Municipal water sustainability plan

25. (1) On becoming a regulated entity under the regulations, *a municipal service provider shall*, in accordance with such requirements as may be prescribed, *prepare, approve and submit to the Minister a municipal water sustainability plan for all municipal services*,

(a) that are under the municipal service provider's jurisdiction; and

(b) to which, under the regulations, the regulated entity's initial plan is to apply.

2. Study Overview/Objectives/Outcomes

Water Opportunities Act

Requirements for plan

26. (1) A plan must satisfy the requirements prescribed by the regulations.

Contents of plan

(2) Without limiting the generality of subsection (1), *the regulations may require a plan to include any of the following matters*, prepared in accordance with such requirements as may be prescribed, *with respect to each municipal service to which the plan applies*:

1. An asset management plan for the physical infrastructure.
2. A financial plan.
3. If the municipal service is a municipal water service, a water conservation plan.
4. An assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks.
5. Strategies for maintaining and improving the municipal service, including strategies to,
   i. ensure the municipal service can satisfy future demand,
   ii. consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and
   iii. increase co-operation with other municipal service providers.
6. Such other information or things as may be prescribed relating to the municipal service.

May include additional information

(3) A regulated entity may include in a plan such *additional information or things as it considers advisable*.

2. Study Overview/Objectives/Outcomes

Water Opportunities Act (Fact Sheet)

The Act sets the framework to help municipalities improve the efficiency of municipal infrastructure and services by:

- *Identifying innovative, cost effective solutions for drinking water, sewage and stormwater system challenges.*
- *Optimizing systems and improving water conservation.*
- *Identifying opportunities to demonstrate and carry out new and emerging Ontario water technologies, services and practices.*

The Act enables the authority to require municipalities and other water service providers to prepare municipal water sustainability plans. *These plans will promote water efficiency as a cost effective way to generate additional water and wastewater capacity.*

3. Purpose of Consultation

- A primary element of this project involves consultation with other similar municipalities to dialogue openly on issues and opportunities related to the preparation of Water Sustainability Plans, as well as core objectives of the Water Sustainability Act.
- This is the second of two planned Focus Group sessions.
- Purpose of today's consultation (Sothern Ontario Municipalities):
  - *Identify problems and concerns associated with the delivery of a future Water Sustainability Plan (WSP).*
  - *Provide input on Preliminary Issues and Opportunities to potentially be addressed by a future WSP.*

4. Draft/Generic "Project Charter"

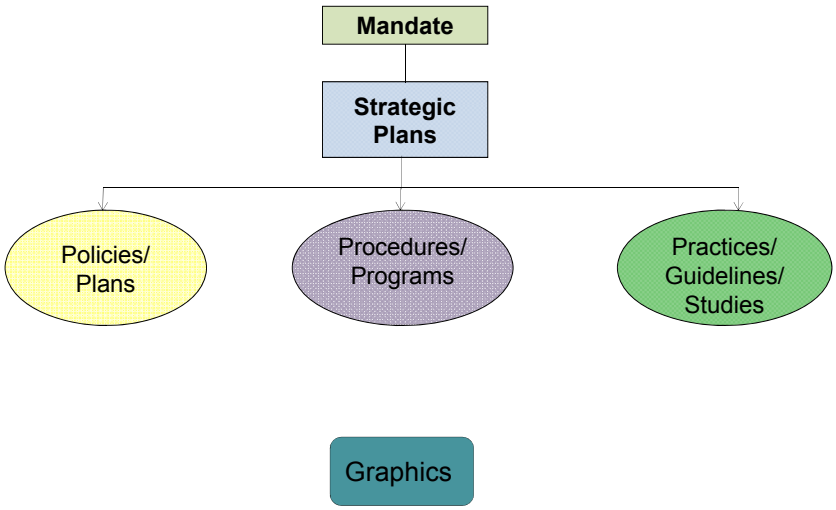
- Project Charter is defined as an official document endorsing the rights of the stakeholders involved, including a Statement of Principles and Objectives under consideration for the development of a Water Sustainability Plan.

Project Charter

5. Background Review and Characterization

- A primary task of this project has focused on the identification and compilation of relevant background documents as related to water, wastewater and more specifically for Oakville - stormwater services.
- Conservation Halton, the Region of Halton and the Town of Oakville have provided specific documentation which summarizes the various policies, procedures and programs for which each is responsible for, as related to the delivery of municipal water, wastewater or stormwater services.
- This information has been used to identify and further define preliminary Issues and Opportunities related to the provision of water-based public services in the context of a Water Sustainability Plan including:
  - *Gaps*
  - *Overlaps*
  - *Intersections*
  - *Emerging Science*
  - *Trends*
  - *Other*

5. Background Review and Characterization



5. Background Review and Characterization

Town of Oakville

Climate Change Strategy (Plan)

Purpose:

The Town of Oakville is one of 12 signatory municipalities working with the International Council for Local Environmental Initiatives (ICLEI) - Local Governments for Sustainability, to create a corporate Climate Change Adaptation Plan. Town staff is moving through a five milestone (Milestone 1 – Initiate, Milestone 2 – Research, Milestone 3 – Plan, Milestone 4 – Implement, and Milestone 5 – Monitor/Review) process with a staff team of individuals from many Town departments. Milestone 1 was completed in early 2011 and Milestone 2 is currently being completed.

Key Elements:

Several key expected impacts related to climate change include more extreme weather events, flooding, and increased evaporation, and increased temperatures, and these will affect water and stormwater management activities. It is expected that this staff-developed plan will consolidate on-going adaptation and mitigation activities and forecast future actions to address potential climate change impacts.

Relevance:

Climate Change is becoming an increasingly more complex issue for municipalities to address. Climate Change and the policies prepared under this initiative will have to be taken into account during the development of a Water Sustainability Plan. The Water Opportunities Act recognizes a potential stressor from Climate Change as to its influence on the future delivery of water services. As such, the directions within the Climate Change Strategy and any adaptation approaches which influence water service provisions will need to be recognized in a future Water Sustainability Plan.

5. Background Review and Characterization

Town of Oakville

Bi-annual Creek Erosion Assessment and focused Stream Restoration EA and Construction Projects (Feb 2010) (procedures/programs)

Purpose:

The Town of Oakville conducts Bi-annual Creek Erosion Inspection and Assessment study to develop, evaluate and recommend preferred alternatives for the stabilization and rehabilitation of the creeks and banks and possible flood/flow control improvements along the different watercourses in the Town.

Key Elements:

The Erosion Assessment is based on a survey of field conditions – identifying the most sensitive geomorphic areas and erosion sites – as well as a broad-scale analysis of the field data to evaluate erosion risk to adjacent property and infrastructure. The objectives of this study have been to:

- Carry out an evaluation of the geomorphic and erosion conditions of each creek identified in the study.
- Identify and prioritize locations where rehabilitation is required.
- Prepare cost estimates and implementation recommendations for rehabilitation.
- Update the creek erosion database with the results of the assessment, including photographs and field data to provide a reference base for future assessments.

The processes contributing to issues within the study area first are assessed by analyzing hydrology, hydraulics, tractive forces and stream processes. These inspections were carried out by walking the creek systems and included photographic inventories of erosion sites. Prioritized lists of sites requiring rehabilitation were identified. These lists were used to forecast capital budget needs for erosion control projects.

Relevance:

Natural open waterways within the Town of Oakville serve as important conveyors of stormwater, treated and received from local urban development. The health and stability of these waterways is an important consideration in the Town's effective stormwater system, and as such feedback from this program and related restoration and construction projects is critical to maintain a safe and functioning eco-system. This action aligns well with Water Sustainability Planning and needs to be considered in an overall stormwater-based structure.

5. Background Review and Characterization

Region of Halton

Sustainable Halton (strategy)

Purpose:

Sustainable Halton is Halton Region's growth management and land use response to the province's Places to Grow Plan, the Provincial Policy Statement and the Greenbelt Plan. It involved research, public consultation, staff recommendations and Council approval of policy changes to the Halton's Official Plan. Places to Grow Plan, the provincial growth plan, sets population and employment targets that Halton Region must plan for. This requirement means the Region need to plan for an additional 134,000 people and 54,000 jobs in the years 2021-2031.

Key Elements:

The document identifies Halton's urban growth area to 2031 and what land will be preserved for wildlife, green space and farmland. It clarified what land will be reserved for business and residential use. As well, the report includes the planning for major roads, transit corridors, utilities and other regional infrastructure, including water and wastewater. The Sustainable Halton project lead to the development of ROPA 37 and 38.

Relevance:

The Sustainable Halton Project was the precursor to the Official Plan amendments. As Sustainable Halton is implemented, it will define a strategy and approach to manage urban sprawl optimizing the use of infrastructure, with a view to protecting natural resources and preserving natural spaces and farmland.

5. Background Review and Characterization

Region of Halton

Sustainable Halton Water and Wastewater Master Plan (October 2011) (policies/plans)

Purpose:
A region-wide review, evaluation, and development of water and wastewater servicing strategies for all urban service areas. The Master Plan builds on the previous work undertaken as part of the South Halton Master Plans and Updates, related studies in the North Halton systems and the Wastewater Pumping Station Capital Needs Assessment and Master Plan Study for Oakville and Burlington.

Key Elements:
Includes the identification of Regional Infrastructure needs including 12 Schedule A projects, 222 Schedule A+ projects, 30 Schedule B projects, and 11 Schedule C projects, in accordance with the Municipal Class Environmental Assessment Process.

Relevance:
The Water and Wastewater Master Plan directs Regional initiatives related to the upgrade or replacement of water and wastewater infrastructure. A Water Sustainability Plan initiative would need to ensure that the improvements/upgrades to the water/wastewater are consistent and with the sustainability principles in the Water Sustainability Plan.

5. Background Review and Characterization

Conservation Halton

Ontario Regulation 162/06 – Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation (policies/plans)

Purpose:
The Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation allows Conservation Halton to regulate development within wetlands, shoreline hazards, valley systems and their associated allowances with respect to flooding, erosion, dynamic beaches, conservation of land and pollution. Development on lands adjacent to wetlands (varies from a distance of 30 m to 120 m adjacent to wetlands depending on significance and/or size of wetland) is regulated with respect to potential hydrologic impacts to the wetland. The regulation also allows Conservation Halton to regulate alterations and interferences to watercourses and wetlands.

Key Elements:
All applications for permission under Ontario Regulation 162/06 are submitted directly to Conservation Halton (though there is frequently an overlap with Planning Act application reviews due to related issues and coinciding responsibilities). The Town is copied on all approvals within their jurisdiction. The Region and the Town are subject to obtaining all necessary approvals from Conservation Halton pursuant to Ont. Reg. 162/06 for their own projects.

Relevance:
The Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation is the main regulatory tool that the Conservation Authority has to regulate development in its jurisdiction. Any policies or initiatives developed under the Water Sustainability Plan will have to adhere to the Authority's restrictions under this regulation.

5. Background Review and Characterization

Conservation Halton

Long Term Environmental Monitoring Program (procedures/programs)

Purpose:

The Long Term Environmental Monitoring Program (LEMP) is designed to monitor species, ecosystems and changes to the watershed over time. Watershed report cards are published on the health of various watersheds. It helps ecologists and land use planners in obtaining the quantitative information they need to establish targets and make informed decisions for the planning, management and/or rehabilitation of our natural resources.

Key Elements:

Monitoring is completed on a two-year cycle with a focus on a particular watershed and/or watershed group each year (Grindstone Creek 2006, Bronte Creek 2007, Urban Creeks 2008, Sixteen Mile Creek and Grindstone Creek 2009).

Tier 1 Indicators
Tier 2 Indicators
Tier 3 Indicators

Relevance:

Monitoring of natural systems including water resources will be necessary to ensure that current policies are working to achieve their specified goals. Monitoring will also need to be fundamental component of a Water Sustainability Plan, hence the co-ordination and alignment of these programs is expected to be integral to any future plans.

Break – 10:15 a.m. to 10:30 p.m.

6. Issues and Opportunities

As part of the Background Review and Characterization the team has identified Water-based Public Services as follows:

1. *Stewardship/Education*
   - Children's Education
   - Forest Stewardship
   - General Public
   - Water Efficiency
2. *Monitoring*
   - Climate/Meteorological
   - Ecosystem Change
   - Water Quality
   - Water Quantity
3. *Operations, Maintenance and Management/ Capital Planning of Water-based Infrastructure (built and natural)*
   - Stormwater Management
   - Storm Sewers
   - Watercourses
   - Shorelines
   - Water and Wastewater
   - Flood Control
4. *Land Development/ Urban Land Use*
   - Urban Uses
   - Natural Features
   - Forest Management
   - Process
5. *Environmental Sustainability/Adaptive Management*
   - Policy
6. *Design Standards*
   - Stormwater Management
   - Urban Design
   - Water and Wastewater
7. *Emergency Planning Procedures*
   - Flood Control
   - Spills Response
   - Climate Change
8. *Compliance/Enforcement*
   - Natural Areas
   - Storm Sewer
   - Building Code
   - Natural Hazards
9. *Publically-owned Natural Heritage/Green/Open Space*
10. *Financial Plan/Human Resources*
11. *Other*

6. Issues and Opportunities

- The individual water service-based matrices have lead to an initial identification of Issues and Opportunities defining where there may be competing or complementary services and/or gaps.

Matrix

Preliminary Issues and Opportunities

7. Breakout Session

- Questions to be discussed:
  i. Confirm or add to the list of water-based public services.
  ii. Input on Issues and Opportunities.
  iii. Input on potential future external stressors related to the delivery of water-based public services.
    - *i.e. Climate Change*
  iv. Insight into the potential application and/or benefit of New Technologies and Practices (focus on stormwater)

8. Schedule

▪ Consult with Southern Ontario Municipal Representatives	-	April 11, 2012
▪ Prepare Draft Study Report	-	Early May
▪ Review with Project Team	-	Early May
▪ Submit Final Reports	-	End of May, 2012

Project Name: Town of Somewhere – Municipal Water Sustainability Plan		**Project No.:** TBD	
Project Type: Study/Framework		**Project Partners**: Town of Somewhere Ministry of the Environment Region of Somewhere Conservation Somewhere	
Start Date: TBD	**Target Completion:** TBD	**Version/Revision Number** TBD	**Date Submitted:** TBD

1. Project Purpose and Background (*Describes the purpose and background that will be used to justify the project and the main goals and objectives. Should be fairly high-level.)*

In 2010, the Ontario government passed the Water Opportunities Act which sets out a framework to help municipalities improve the efficiency of municipal infrastructure and services. The purpose of the Act is to:

- Foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
- Create opportunities for economic development and clean-technology jobs in Ontario; and
- Conserve and sustain water resources for present and future generations.

Part of the Water Opportunities Act describes a Municipal Water Sustainability Plan. In the context of the Town of Somewhere a Water Sustainability Plan is defined as:

“The document that outlines the visions, goals, strategies and actions proposed to manage our local water resources with the purpose of achieving, to the best of our abilities, the most efficient and wisest “use” of the water in an attempt to balance the needs of humans and the natural world, now and for future generations.”

The Town of Somewhere is proceeding with the development of a municipal Water Sustainability Plan to help promote overall water efficiency as a cost effective way to generate additional water, wastewater and stormwater capacity. It is recognized that the management of water, wastewater and stormwater is governed by the Town of Somewhere, the Region of Somewhere, Conservation Somewhere as well as the Ministry of Environment through numerous policies, programs and procedures. There is a recognized need to maintain balance between human use/consumption and the natural environment and the development of an effective water efficiency plan will aid in achieving this goal.

The municipal Water Sustainability Plan will need to be consistent and assist the Town to reach the mandate set out in it guiding directives including its Corporate Strategic Plan (20__), Official Plan (20__), and Environmental Strategic Plan (20__).

2. Goals and Objective *(Outlines the key goals and objectives and should be presented in enough detail as to limit confusion across all parties involved. Also be depended on the focus of the study whether stormwater or water/wastewater)*

Goal:

Development of a municipal Water Sustainability Plan that satisfies the requirement detailed in the Regulation (Note: Regulation not yet in effect – expected in 2012) and the Water Opportunities Act (2010) while clearly meeting the Town's Vision, and Mission while ensuring a transparent process with continual public consultation.

Objectives

- Develop a Water Sustainability Plan that focuses on identifying innovative, cost effective solutions for water management.
- Effective and meaningful communication with the public and stakeholders throughout the study.
- Meet Town's objectives outlined in its Official Plan, and Environmental Strategic Plan as well as the Town's Sustainability Plan including (Oakville specific by way of example):
    - *Livable Oakville - 2.2.3 Achieving sustainability in order to:*
        a) *Minimize the Town's ecological footprint*
        b) *Preserve, enhance and protect the Town's environmental resources, natural features and areas, natural heritage systems and waterfronts; and,*
        c) *Achieve sustainable building and community design.*
    - *Environmental Strategic Plan Goals*
        - *Goal 1 to sustain and enhance the natural environment*
        - *Goal 4 To create and support a healthy and resilient community*

3. Key Milestones *(outline the key milestones to ensure that there is clear direction and timing for the project)*

High-Level Milestones	Target Completion
• Project Initiation Meeting	•
• Asset Management Report	•
• Public Consultation Process	•
• Risk Assessment	•
• Financial Plan	•
• Draft Water Sustainability Plan (available for public review)	•
• Final Water Sustainability Plan	•

4. Project Team Requirements *(outlines key team members and will be dependent on the lead authority and whether the emphasis is on stormwater or water/wastewater)*

Name	Organization	Project Role\Areas of Responsibility
TBD	Town of Somewhere	Project Sponsor/Overall Manager
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TBD	Town of Somewhere	Environmental Lead
TBD	Ministry of the Environment	Ministry of the Environment Advisor
TBD	Region of Somewhere	Agency Stakeholder
TBD	Great Lakes & St. Lawrence Cities Initiative	Agency Stakeholder
TBD	Conservation Somewhere	Agency Stakeholder

Acceptance & Sign-Off			
Prepared By:			
	Project Manager	*Signature*	*Date*
Approved By:			
	Project Sponsor	*Signature*	*Date*
Approved By:			
	Executive Sponsor	*Signature*	*Date*

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
1. Stewardship/Education						
a) Children's Education	Lake Level sponsor of Halton Children's Water Festival (Halton Children's Water Festival)	Importance of ground and surface water – elementary schools (Halton Children's Water Festival)	Importance of ground and surface water – elementary schools (Halton Children's Water Festival)			The Groundwater Foundation community groups Oakvillegreen school boards other Halton municipalities
	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)	Importance of storm sewer and the connection to receiving water bodies (Yellow Fish Road Program)			Trout Unlimited
	Glenburnie School in Oakville sponsors a stormwater management pond		Awareness of local watersheds/watercourses – elementary schools (Streams of Dreams)			
b) Forest Stewardship	Education for invasive species response (Gypsy Moth/Emerald Ash Borer),					NGOs: conduct garlic mustard pulls (Oakville Horticultural Society), tree plantings (Oakvillegreen, Groundbreakers, many community groups)
		Funding for preparation of forest management plans (Woodlands Stewardship Program)		Private Lands Forest Stewardship – Ministry of Natural Resources (Trees Ontario)		
		Purchase and planting of nursery stock (Woodlands Stewardship Program)	Volunteer tree planting and educational program (Trees for Watershed Health)			
	Recommendations for improvements to the forest stewardship program (Urban Forest Strategic Management Plan)					
c) General Public	Engage the community as stewards of the environment (Environmental Sustainability Plan and Procedures)			Ontario Stewardship Council – Ministry of Natural Resources		
	Education and capacity building (Environmental Strategic Plan)		Outdoor educational interpretive programs (Strategic Plan)			
	Partners with the Blue W non-profit organization	Facilitates rain barrel sales, toilet rebate incentives				

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
		programs				
			Deliver strong community stewardship programs (Hamilton-Halton Watershed Stewardship Program)			
d) Water Efficiency		Efficient use of potable water (i.e. outdoor water use restriction, water efficient fixtures and appliances, etc.)				Ontario Water Works Association
2. Monitoring						
a) Climate/ Meteorological	Climate Monitoring (weather stations)	Weather Stations	Weather Stations	Ministry of the Environment	Water Survey of Canada - Environment Canada	McMaster University
b) Ecosystem Change	State of Environment Reporting including watercourse reporting		Species and ecosystem (Long Term Environmental Monitoring Program)	Provincial Water Quality and Groundwater Monitoring Networks – Ministry of the Environment Provincial Water Quality and Groundwater Monitoring Networks – Ministry of the Environment	Marsh Monitoring Program – Environment Canada Species at Risk Programs/ Recovery Plans	
c) Water Quality	Water quality monitoring at stormwater management ponds, storm sewers, outfalls, and creeks (Water Quality Monitoring Program – annual also through development applications)		Surface water and groundwater quality monitoring throughout watershed (Long Term Environmental Monitoring Program)	Ministry of the Environment - special studies, e.g. for phosphorus/algae (cladophora) studies – also defines water quality protection levels for streams etc.		
		Lake Intake Water Quality Monitoring				
		Water Treatment Plant Quality Monitoring of Effluent				
	Stormwater management ponds – sedimentation, water quality, hydraulic function (Stormwater Pond Sedimentation Study)					

Public Service		Public Sector Roles					
		Town of Oakville	Region of Halton	Conservation Halton	Other		
					Provincial	Federal	Non-Government Organization
d)	**Water Quantity**	Assessment at Dundas Street and data available through development applications	Quantity of available drinking water	Water level monitoring (Flood Protection and Low Water and Water Control)	Surface Water Monitoring Centre – Ministry of Natural Resources		
3.	**Operations, Maintenance and Management/Capital Planning of Water-based infrastructure (built and natural)**						
a)	**Stormwater Management Ponds**	Design and use of stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)			Ministry of the Environment Certificate of Approval Process (Now ECA)		
		Maintenance of stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)					
b)	**Storm Sewer**	Capital projects – major and minor systems (Storm Sewer Master Plan)					
c)	**Watercourses**	Erosion assessment (Bi-annual Creek Erosion Assessment and Stream Restoration EA and Construction Projects)		Permitting of Regulated Waterways		Fisheries Act Authorization	
		Stream restoration EA's and capital projects (Bi-annual Creek Erosion Assessment and Stream Restoration EA and Construction Projects)		Permitting of Regulated Waterways		Fisheries Act Authorization	
		Flood mitigation capital projects (Town-Wide Flood Study)		Permitting of Regulated Waterways	Ministry of Natural Resources LRIA		
d)	**Shoreline**	Shoreline erosion assessment (Bi-annual Shoreline Assessment, focused EA's and construction projects)		Permitting of Regulated Shorelines			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
	Shoreline erosion mitigation - capital projects (Bi-annual Shoreline Assessment, focused EA's and construction projects)					
e) Water and Wastewater		Review, evaluation of water and wastewater servicing strategies (Sustainable Halton Water and Wastewater Master Plan and Citizen's Priorities – Halton Region's 2011 to 2014 Action Plan)				
	Sustainable Building Design Guidelines (Livable Oakville and North Oakville Secondary Plans)	Capital projects (Building a Better Halton and Sustainable Halton Water and Wastewater Master Plan)				
	Innovative programs/ practices coming in (e.g. new transit facility is using rainwater capture system to supply bus wash water)					
f) Flood Control	Operation and Maintenance of Stormwater Management Ponds		Operations and maintenance of flood control structures and channels (Flood Protection: Low Water and Water Control)	Conservation Ontario		
	Flood Study (Town wide Flood Control Study)					
4. Land Development/Urban Land Use						
a) Urban Uses	Land use and associated patterns including land to be developed and protection of natural features (Livable Oakville Town of Oakville Official Plan and North Oakville East and West Secondary Plan)	Land use and associated patterns including land to be developed and protection of natural features (Halton Region Official Plan and Amendments and Sustainable Halton)	Land use and associated patterns including land to be developed and protection of natural features (Plan Input and Review and Ontario Regulation 162/06)	Ministry of Municipal Affairs and Housing		
		Official Plan Amendments (Region of Halton – Planning Applications)	Official Plan Amendments (Plan Input and Review)			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
			Development within and adjacent to wetlands/watercourses (Ontario Regulation 162/06)	Ministry of Natural Resources		
b) Natural Features	Sustain and enhance the natural environment (Environmental Strategic Plan 2011 Update and North Oakville Creeks Subwatershed Study)		Develop and enhance a natural heritage system (Strategic Plan)			
c) Forest Management	Urban Forest Management (Urban Forest Strategic Management Plan and North Oakville Urban Forest Strategic Management Plan)	Large Woodlots Designation (Tree By-law)		Ministry of Natural Resources		
d) Process	Site grading and Erosion and Sediment Control review and process (Site Alteration By-law)		Site grading and Erosion and Sediment Control review (Plan Input and Review)			
	Site Plan and Subdivision review and process (Site Plan and Subdivision Process)		Site Plan and Subdivision review (Plan Input and Review)			
	Environmental Implementation Report review and process (e.g. North Oakville Creeks Subwatershed Study)		Environmental Implementation Report review (Plan Input and Review)			
5. Environmental Sustainability/Adaptive Management						
a) Policy	Corporate Sustainability (Environmental Sustainability Policy and Procedures)	Corporate Sustainability (Corporate Sustainability Assessment)	Towards a Healthy Watershed (Strategic Plan 2009-2013)			
	Sustainable Communities (Council's Strategic Plan and 2011-2014 Work Plan)	Sustainable Communities (Citizen Priorities – Halton Region's 2011 to 2014 Action Plan)				
	Climate Change Policy (Climate Change Strategy)					
	Sustainable Building Design Guidelines					

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
6. Design Standards						
a) Stormwater Management	Stormwater management ponds (Stormwater Management Pond, Operations Maintenance Policy and Procedure)			Ministry of the Environment		
b) Urban Design	Urban Design (community) (Urban Design Guidelines for Livable Oakville)		Urban Design (Ontario Regulation 162/06)			
	Sustainable Building Design Guidelines					
c) Water and Wastewater		Water re-use, grey water system and sewer use by-law				
7. Emergency Planning Procedures						
a) Flood Control	Emergency planning and flood warning (Town Wide Flood Study)		Emergency planning and flood warning (Flood Protection: Low Water and Water Control)			
b) Spills Response	Town wide procedure	Region wide procedure				
c) Climate Change	Climate change adaptation plan					
8. Compliance/Enforcement						
a) Natural Areas	Parks and other natural areas (Parks Rules and Regulation By-laws)		Parks and other natural areas (Park and Land Managers)			
	Tree protection initiatives (by-law and site plan requirements)					
b) Storm sewer	Uncontrolled discharge to storm sewer (Storm Sewer Use By-law)					
c) Building Code	Water efficient fixtures					
d) Natural Hazards			Development within and adjacent to Wetlands,			

Public Service	Public Sector Roles					
	Town of Oakville	Region of Halton	Conservation Halton	Other		
				Provincial	Federal	Non-Government Organization
			Watercourses, Shorelines and associated hazards (Ont. Reg. 262/06)			
9. Publically Owned Natural Heritage/Green/Open Space						
a) <to be completed>						
10. Financial Plan/Human resources						
a) Financing	Town programs including: Asset Management, PB2 Budgeting, Risk Assessment Policy, and 1% Infrastructure Capital Assessment to ensure infrastructure renewal					
11. Other						

April 5, 2012

Preliminary Issues and Opportunities

To-date, the Water-based Public Services premised on a review of the respective background information, as well as consultation with Halton Municipalities include:

1. *Stewardship/Education*
2. *Monitoring*
3. *Operations, Maintenance and Management/Capital Planning of Water-based Infrastructure (built and natural)*
4. *Land Development/Urban Land Use*
5. *Environmental Sustainability*
6. *Design Standards*
7. *Emergency Planning/Procedures*
8. *Compliance/Enforcement*
9. *Natural Heritage/Green Open Space*
10. *Financial/Human Resources*
11. *Other?*

The individual service-based matrices have lead to an initial identification of Issues and Opportunities defining where there may be competing or complementary services and/or gaps as follows:

1. Stewardship/Education

Issues	Opportunities
a) General lack of programs to adults or uptake of existing programs	a) Can information be better shared amongst partners; can it be standardized? Can information be promoted or disseminated better? Use existing groups such as the Stormwater Practice Group.
b) Potential need for more Provincial support	b) Can messaging around water be more centralized? Less confusing to citizens?

2. Monitoring

Issues	Opportunities
a) General lack of co-ordination – upper and lower tier need to co-ordinate i.e. the use of standards and protocols	a) Funding of respective programs can be better optimized through pooling efforts, perhaps needs a central champion/lead specifically sharing of data and analysis
b) Standards for collection (equipment, protocols) need to be harmonized for programs to be effective	b) Potential to link with radar/satellite processes at Federal scale

Issues	Opportunities
c) Coverage needs to be increased to take into account spatial variability/ and increased intensity/frequency of storms (Climate Change)	
d) Need consideration for broader-based sampling and meteorologic data collection	
e) Is sufficient analysis being completed on the data that is being collected (staff resource limitation issue)	

3. Operations, Maintenance and Management/Capital Planning of Water-based Infrastructure (built and natural)

Issues	Opportunities
a) Typically maintenance is insufficient in terms of scope and frequency	a) Can stormwater management infrastructure be designed more effectively to reduce maintenance (i.e. reduce use of forebays, promote LID BMP's)
b) Need for integration of water/wastewater/stormwater system Master Plans including roadway reconstruction	b) Erosion/Flood Management and resources of Town and Conservation Halton can be optimized with respect to open watercourse systems
c) Need for resources/co-ordination with respect to major flood control systems managed by Conservation Halton/Province	c) Update of MOE Stormwater Manual to include LID BMPs
d) Improve coordination of management efforts by managing studies with inter-department/inter-agency technical teams	d) Dedicated stormwater funding and may include the potential for credits for the use of LID BMPs
e) Need for training (i.e. succession training)	e) Reverse the approvals approach and make it the responsibility of the developer to implement water efficiencies or to provide rationale for why it is not possible
f) Requirement to update design manuals to promote better maintenance and operations of infrastructure	

4. Land Development/Urban Land Use

Issues	Opportunities
a) Integrated role of Urban land use planning meshing objectives of Region, Town, Conservation Halton, and Proponents continues to be protracted; streamlined processes needed (i.e. monthly review meetings)	a) Forest Management can have potential benefit from stronger partnership with Provincial and local stakeholders
b) Need for clarity/consistency with respect to emerging issues related to natural systems (i.e. Bobolink/wetlands, other ESA matters)	b) Potential to build/encourage more passive on lot measures (LID BMP's) and green infrastructure which reduces reliance and need for end-of-pipe stormwater management and improves level of impact on receiving systems – to be used to reduce demand on water supply
c) Numerous stakeholders includes NEC, DFO, MOE, MTO, EC, TC, and others	c) Land use should also consider existing systems (i.e. forest management or invasive species)
	d) Education opportunities for design practitioners

5. Environmental Sustainability/Adaptive Management

Issues	Opportunities
a) How best to transition sustainability principles into tangible on-the-ground action	a) Partnering with other municipalities to develop risk-based approaches to infrastructure assessment (eg. PIEVC – Engineers Canada)
b) How best to monitor/measure success (i.e. reduced water use; increased rainwater harvesting; uptake of LID BMP's); no recognized method to measure environmental sustainability	b) Integration/partnership with respect to other agencies and stakeholders as related to monitoring and knowledge sharing
c) Inconsistent/Diverse perspectives on Climate Change approaches and directives for building resiliency in infrastructure	c) Investigate new technologies/methods/ tools that may be available to reduce water losses, etc. Includes communications/ sharing of knowledge with other municipalities

6. Design Standards

Issues	Opportunities
a) Emerging issues require clarity: • Climate Change • Regional Storm Management • LID BMP Design • Flood Control • Urban Design/Zoning	a) Urban Design Guidelines need to consider more application of LID BMPs and other on-lot/building-oriented standards which reduce ecological impacts particularly to stormwater and other water-based systems
b) Consistency amongst Municipalities and Conservation Authorities	b) Urban design (and other) guidelines need to consider opportunities to utilize stormwater to reduce demands on the water supply (ie. rainwater harvesting)
c) Legacy issues should be identified and addressed: • Brownfield Development • Downspout connections • Leak management on water infrastructure • Stormwater management retrofits • Combined sewer overflows	c) Update IDF curves to account for climate change (overlaying a climate change factor on existing IDF curves)
	d) Update stormwater design standards to account for climate change in design/ implementation of: • Sump pumps • Stormwater management facilities • Runoff coefficients

7. Emergency Planning Procedures

Issues	Opportunities
a) None currently known with respect to water and wastewater this is likely a gap in knowledge only	a) Excellent synergy between the Town of Oakville and Conservation Halton on flood response and management planning: Town-wide Study needs to be advanced to implementation stage;
b) Limited resources allocated to emergency planning/procedures	b) Co-ordination with MNR on criteria and standards related to Regional Storm flood control

Issues	Opportunities
c) Requires more upfront planning especially in light of climate change (i.e. flood planning) including outdated flood mapping and lack of emergency route planning	c) Could extend to Spills Management (relates to Source Protection objectives) d) Ensure existing planning tools and models are current and accurate.

8. Compliance/Enforcement

Issues	Opportunities
a) Enforcement of applicable by-laws – constrained by by-law staff resources	a) Improve coordination between jurisdictions

9. Publicly-owned Natural Heritage/Green Open Space

Issues	Opportunities
a) TBD	a) Share expertise between agencies on effective management practices within open spaces that benefit water resources

10. Financial Plan / Human Resources

Issues	Opportunities
a) TBD	a) Most municipalities weighing 'pros' and 'cons' of Stormwater Utilities; some have implemented (i.e. Kitchener and Waterloo)

11. Other

Issues	Opportunities
a) TBD	a) TBD

APPENDIX 'D'
SAMPLE PROJECT CHARTER

Project Name: Town of Somewhere – Municipal Water Sustainability Plan		**Project No.:** TBD	
Project Type: Study/Framework		**Project Partners**: Town of Somewhere Ministry of the Environment Region of Somewhere Conservation Somewhere	
Start Date: TBD	**Target Completion:** TBD	**Version/Revision Number** TBD	**Date Submitted:** TBD

1. Project Purpose and Background (*Describes the purpose and background that will be used to justify the project and the main goals and objectives. Should be fairly high-level.)*

In 2010, the Ontario government passed the Water Opportunities Act which sets out a framework to help municipalities improve the efficiency of municipal infrastructure and services. The purpose of the Act is to:

- Foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
- Create opportunities for economic development and clean-technology jobs in Ontario; and
- Conserve and sustain water resources for present and future generations.

Part of the Water Opportunities Act describes a Municipal Water Sustainability Plan. In the context of the Town of Somewhere a Water Sustainability Plan is defined as:

> *“The document that outlines the visions, goals, strategies and actions proposed to manage our local water resources with the purpose of achieving, to the best of our abilities, the most efficient and wisest “use” of the water in an attempt to balance the needs of humans and the natural world, now and for future generations.”*

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Development of a municipal Water Sustainability Plan that satisfies the requirement detailed in the Regulation (Note: Regulation not yet in effect – expected in 2012) and the Water Opportunities Act (2010) while clearly meeting the Town's Vision, and Mission while ensuring a transparent process with continual public consultation.

Objectives

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Acceptance & Sign-Off			
Prepared By:			
	Project Manager	*Signature*	*Date*
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