DON RIVER WATERSHED PLAN

Implementation Guide

2009

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Toronto and Region Conservation

theDon

Toronto and Region Conservation
for The Living City

We look forward to working with these and many other partners in implementation …

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List of Acronyms

AMO..... Association of Municipalities of Ontario
BILD..... Building Industry and Land Development Association
CAMC ..... Conservation Authorities Moraine Coalition
CFIA..... Canadian Food Inspection Agency
CO ..... Conservation Ontario
CSO…….Combined Sewer Overflow
DFO ..... Department of Fisheries and Oceans
EA ..... Environmental Assessment
EFP..... Environmental Farm Plan
FMZ ..... Fish Management Zone
FMP…….Fish Management Plan
GIS……Geographic Information System
GLSF ..... Great Lakes Sustainability Fund
GTA ..... Greater Toronto Area
HIP……Habitat Implementation Plan (TRCA)
LEED ..... Leadership in Energy and Environmental Design
MEI ..... Ministry of Energy and Infrastructure
MESP……..Master Environmental Service Plan
MMAH..... Ministry of Municipal Affairs and Housing
MNR..... Ministry of Natural Resources
MOE..... Ministry of the Environment
NGO..... Non-government organization
OCETA ..... Ontario Centre for Environmental Technology Associations
OFAH…….Ontario Federation of Anglers and Hunters
OIPC…….Ontario Invasive Plant Council
ORC..... Ontario Realty Corporation
ORM ..... Oak Ridges Moraine
RAP…….Remedial Action Plan
RWMN ..... Regional Watershed Monitoring Network (TRCA)
STEP ..... Sustainable Technologies Evaluation Program (TRCA)
SW ..... Stormwater
SWM ..... Stormwater management
TNHS ..... Terrestrial Natural Heritage System (TRCA)
TRCA ..... Toronto and Region Conservation Authority
YPDT ..... York Peel Durham Toronto Groundwater Program

Executive Summary

Introduction

The *Don River Watershed Plan* was prepared by the Toronto and Region Conservation Authority (TRCA) in consultation with its municipal partners and the Don Watershed Regeneration Council to provide effective guidance for the regeneration of the watershed. The plan builds on the hard won gains made to date in protecting, regenerating and taking collective responsibility for this abused but still beautiful feature of our natural heritage. Many stakeholders believe that it may be possible to "hold the line" and possibly improve watershed conditions, but only if every opportunity for regeneration is considered seriously. While the major period of urbanization is nearing completion and the watershed systems are beginning to adjust to these new land uses, our goal is for improved conditions and we know we must prepare for climate change affects. The watershed plan is intended to inform and guide municipalities, provincial and federal governments and TRCA as they update their policies and programs for environmental protection, conservation, and regeneration within the contexts of land and water use, and the planning of future urban growth. The plan provides direction to local non-governmental organizations and private landowners with regard to best management practices and opportunities for environmental stewardship. To accomplish the management strategies set out in the plan, there will need to be coordinated efforts by a variety of implementing partners.

Purpose

The purpose of this *Implementation Guide* is to facilitate implementation of the recommendations contained in the *Don River Watershed Plan* (TRCA, 2009). The Guide organizes the watershed plan recommendations according to relevant implementation tools and assembles additional information to inform initial action. The Guide further summarizes a 10 year work plan of implementation projects, within the context of existing programs and likely implementing partners. Like the watershed plan, the *Implementation Guide* is intended to inform and guide the ongoing implementation and development of programs and policies. **The proposed projects contained in this Guide are intended to serve as a basis for discussion among implementing partners and as a source for the further development of individual partners' own long term work plan and budget preparations.**

Strategic Watershed Management Direction

The *Don River Watershed Plan* concludes that we are beginning to "hold the line" on further degradation of the watershed. Going forward, our primary challenge will be to better manage wet weather flows and to restore a more balanced flow regime to the river and its tributaries. This will be especially important for mitigating the impacts of climate change on this highly urbanized water system. The watershed plan identifies three strategic themes for the regeneration of the watershed:

1. **Build, re-build and retrofit our communities to restore water balance and improve sustainability.**

The *Don River Watershed Plan*, especially the wet weather flow control aspects of the Plan, must be implemented during redevelopment and infilling projects, retrofit of existing built areas, and development of the remaining greenfield areas. Balancing the flow regime of the Don and its tributaries through stormwater source

controls will yield a number of associated benefits. The reduction of peak flows following storms and the maintenance of adequate baseflow between events will reduce the risk of flooding and erosion related damage, while supporting the protection and regeneration of healthy aquatic and terrestrial habitats. Redevelopment throughout the watershed will also provide additional opportunities to protect greenspaces and cultural heritage structures, expand the trail system and urban tree canopy, undertake energy and water conservation improvements, and, otherwise, achieve incremental, cumulative gains in watershed function and condition.

2. Regenerate the aquatic and terrestrial landscapes.

The concerted work of agencies, organizations and individuals has produced improvements in watershed conditions. Some water quality parameters have improved, tens of thousands of trees and aquatic flora have been planted, a number of in-stream barriers to fish have been removed, and trail systems have expanded. There is a continued desire to improve watershed conditions, contribute to de-listing the Toronto Area of Concern (RAP), and regenerate the Mouth of the Don into an internationally recognized example of a healthy urban river. However, continued development and urban intensification, coupled with the impacts of climate change will place additional pressures on the ecosystems of the watershed. Future gains will be contingent on maintaining the enthusiasm and support of the local community, businesses and government for regeneration actions. In addition to 'sweat equity', support must include guaranteed funding to cover the significant capital and on-going maintenance costs of the requisite infrastructure.

3. Engage the people of the Don.

The Don River watershed has a long history of grassroots and agency involvement in and advocacy for regeneration. Annual celebrations, such as Paddle the Don and the Richmond Hill Mill Pond Splash, as well as major naturalization and brownfield rehabilitation projects in the lower Don engage the community and provide a wider awareness of the Don. The time is ripe to capitalize on that interest across the watershed, and reengage the people of the Don to achieve the vision of a revitalized urban river. The engagement and voluntary uptake of sustainable practices — backyard naturalization, lot level stormwater retrofits, water and energy conservation and many others — by residents and businesses in the Don will be essential to achieving the vision. Stewardship and outreach education to build understanding of the links between landowner actions and watershed health will be key.

Top Priority Implementation Projects

This *Implementation Guide* identifies a 10 year work plan of proposed implementation projects addressing all recommendations of the watershed plan, and organized according to primary implementation mechanisms:

Policy;
Regeneration;
Land securement;
Stewardship and outreach education;
Operations and maintenance;
Enforcement; and
Monitoring.

The following list of top priority implementation projects has been selected with consideration for their collective ability to address the three integral actions noted above, in an expeditious and mutually supportive way. They are not listed in any particular order. The reference numbers in brackets (i.e., 1-8) are the respective project numbers, as listed in the implementation work plan tables within the main body of the Guide.

Policy and Policy Related Special Studies

1. Municipalities - Work with TRCA to investigate ways to incorporate the following new policy directions into municipal planning documents (see Table 1.1 for details) (1-1):
    a) All redevelopment should aim to manage for **improved water balance** on the development site and net gain in stormwater control across the larger redevelopment area; all greenfield development should aim to maintain pre-development volumes of infiltration, evapotranspiration and surface runoff, with particular emphasis on areas identified as having **significant groundwater recharge**.
    b) Support **retrofits of source/lot level, conveyance and end of pipe stormwater management measures** in existing developments and redevelopment projects on a comprehensive basis.
    c) Require **Master Environmental Servicing Plans** (MESPs) to be undertaken in conjunction with planning for **urban redevelopment**, including redevelopment in the four provincially designated Urban Growth Centres, municipally identified redevelopment areas, major infrastructure projects, and major regeneration projects.
    d) Develop strategies and policies to promote **sustainable urban form**, including sustainable infrastructure, transportation and energy and resource conservation, at the neighbourhood, site and building/project scales.
    e) Identify a **target Terrestrial Natural Heritage System** and adopt policies to protect and regenerate a minimum of 13% of the land base as natural cover in the Don watershed.
    f) Protect and enhance the quality and extent of public greenspaces and trails, connecting and protecting the **natural and cultural heritage** of the Don watershed.
    g) Conduct **comprehensive flood risk assessment plans** where redevelopment or intensification is proposed in a flood vulnerable area and/or a Special Policy Area that would maintain or decrease the existing level of risk and detail flood remediation, flood proofing, flood warning, and emergency response measures.
    h) Adopt the *Greater Golden Horseshoe Conservation Authorities'* ***Erosion & Sediment Control Guideline for Urban Construction*** and update municipal erosion and sediment control by-laws and fill by-laws as necessary.
    i) Adopt policy to recognize and implement the Don River **Fisheries Management Plan**.
    j) Support **updated and expanded monitoring programs**, including ambient monitoring, requirements for pre-development baseline monitoring, cumulative effects monitoring and the monitoring of new technologies to assess their contributions to watershed improvements.
2. MEI, MMAH, municipalities, TRCA, AMO, CO, BILD - Establish **development standards for sustainable community design** for application to new development proposals, urban expansions, redevelopment, and intensification. Consider incorporation of LEED for Neighbourhood and ecological footprint principles (1-3).
3. TRCA, municipalities and other approval agencies - Develop strategies for **facilitating innovative design projects and approvals** (1-4).
4. Municipalities, TRCA, BILD – Promote a **sustainable redeveloping neighbourhood demonstration project and a sustainable greenfield neighbourhood demonstration** (1-5).

5. Municipalities, TRCA – Partner to **develop a generic Terms of Reference for redevelopment MESPs** (1-7).
6. Each ORM municipality - Recognize the *Don River Watershed Plan* in its official plan, as required by the ***Oak Ridges Moraine Conservation Plan***. (1-10)
7. TRCA, municipalities - Undertake a scoped **economic assessment** of the implications of implementing the watershed plan's integral recommendations, including: valuation of ecosystem services; preparation of a methodology for applying the net gain approach; and development of recommendations for applying fairness and equity in implementation (1-23).

Regeneration

1. TRCA, municipalities and landowners – Develop **sustainable neighbourhood retrofit action plans** using an integrated approach including residential social marketing, naturalization, urban forest enhancement, stormwater management, infiltration, energy and effectiveness monitoring (2-1).
2. Municipalities – Undertake end-of-pipe **stormwater retrofit projects** as opportunities arise, as identified in municipal stormwater retrofit plans (2-2).
3. Municipalities, TRCA, developers, landowners – Implement **stormwater source controls** (infiltration, evapotranspiration, re-use) as opportunities arise in new and re-development, intensification and infrastructure projects, especially in priority sub-basins (2-5).
4. Watershed residents, businesses, landowners – **Adopt lot level sustainable practices** to improve support water balance, natural heritage and resource use objectives (e.g., rain gardens, rain barrels, downspout disconnections, back/front yard naturalization (partial or complete), household water and energy conservation, waste reduction) (2-9).
5. Waterfront Toronto, TRCA, City of Toronto – Continue to implement the **Lower Don River West Remedial Flood Protection Project** and the **Don Mouth Naturalization and Port Lands Flood Protection Project** to address flood and erosion risk, stream form, naturalization and aquatic habitat objectives (2-11, 2-12, 2-22, 2-28).
6. Toronto, TRCA – Complete a **fluvial geomorphology study of Taylor/Massey Creek**, including: a complete geomorphic systems analysis of the creek; a risk assessment for all valley land infrastructure and a long term concept to remediate identified concerns (2-15).
7. Richmond Hill, TRCA – Develop hydrologic and hydraulic **modelling for the Enford Road area** to confirm flood risk and potential mitigation alternatives (2-16).
8. Municipalities, TRCA – **Remediate erosion in ravines** and priority erosion control sites (as identified in municipal and TRCA databases) where human health, property, or infrastructure is at risk (2-17).
9. Municipalities, TRCA, NGOs – Develop and implement **restoration implementation plans** for natural cover in the whitebelt (2-18) and for targeted lands in priority areas on the ORM/Greenbelt (2-19) and in existing urban areas (2-20, 2-21).
10. DFO, MNR, TRCA, municipalities, NGOs - Improve **native aquatic species diversity**, abundance and distribution, and protect and enhance habitat for Target Community Indicator Species as outlined in the *Don River Fisheries Management Plan* (2-29).
11. TRCA, municipalities, NGOs - Undertake detailed planning and develop a long term funding strategy to implement the Don Watershed **Inter-regional Trails network** (2-32) and identify a conceptual route for a Don River Learning Trail (2-33).
12. Establish a facility (GTA-wide) for **archaeological artefact storage** and document collections that is accessible to researchers (2-39).

13. Municipalities, TRCA – Pursue additional scoping and study, and implement the Maple Nature Reserve (Quonset Hut), Mud Creek Neighbourhood, and Warden Woods Residential Area **concept site plans** (2-40).
14. Businesses, TRCA, Municipalities, NGOs – Adopt the Partners in Project Green **Eco-Business Zone model** and strategic elements of the Industrial Retrofit concept site plan to engage watershed business communities in adopting sustainable practices. Start with building relationships in the Leaside Business Area (2-41).

Land Securement

1. TRCA, municipalities, NGOs, golf courses, private landowners – **Secure lands to establish the missing links in municipal trails.** Work with private landowners (e.g. golf courses, hydro corridors) to acquire easements for trail access where acquisition is not a suitable alternative (3-2, 3-7).
2. TRCA, Toronto, Waterfront Toronto – Seek opportunities to **secure additional public greenspace** through the remediation of brownfield sites, reestablishment of a naturalized mouth of the Don, and redevelopment of lands adjacent to the naturalized river mouth (3-9).
3. Municipalities, MOE, TRCA – Ensure that publicly-owned lands appropriate for inclusion into the greenspace system (e.g., regenerated landfill sites) remain as **public lands** and any ownership or access issues are resolved (3-10).

Stewardship and Education

1. TRCA, municipalities, Green Building Council, BILD and other partners - Deliver **technology transfer workshops, seminars and materials** for sustainable technologies and urban form, site restoration best management practices, and LEED-type certifications (4-1, 4-6, 4-11, 4-12).
2. Green Building Councils, TRCA, municipalities, BILD, NGOs, media - Continue to provide opportunities for the **public and media** to see and learn about sustainable home products and services (4-13).
3. TRCA, municipalities, NGOs – Develop a strategy for **co-ordination of outreach programs and a lot level marketing campaign** (with residential, business and institutional lands focus), as part of the sustainable neighbourhood retrofit action plans (4-16, see 2-1).
4. Municipalities, TRCA – Develop and implement **pilot outreach education programs for encroachment on valley lands** (residential and industrial) (4-19).
5. Municipalities, TRCA - Implement **demonstration projects** for stormwater management retrofit, naturalization and other sustainable practices with the business and institutional landowners (4-25).
6. TRCA, Municipalities, school boards, utilities, BILD, NGOs - Develop an outreach program based on the results from the **Renewable Energy Road Map** to promote the uptake of renewable energy technologies (4-36).
7. TRCA, School boards - Promote the **EcoSchools** program to all schools in the watershed (4-37).
8. Municipalities, TRCA - Promote existing **park stewardship programs** in parks near Urban Growth Centres. Enhance current programs with support for volunteer naturalization projects, invasive species removal, habitat creation work, and monitoring where suitable (4-47).
9. Develop a **communications plan** in partnership with Aboriginal groups and descendent populations (4-58).

10. TRCA – Incorporate **experiential learning** about past people's as a component to existing public events such as tree plantings, festivals and family nature events (4-61).

Operations and Maintenance

1. Municipalities, TRCA – Develop guidelines for design and establishment of municipal **stormwater facility maintenance programs**, including monitoring, rehabilitation and financing mechanisms, and conduct assessments of sediment accumulation in stormwater ponds and develop prioritized lists of clean-out projects (5-1, 5-2, 5-3)
2. TRCA, municipalities – Undertake a **flood risk reduction study** to improve the hydraulic capacity of road and rail crossings in flood vulnerable areas (5-14).
3. Municipalities, TRCA - Prepare a **flood emergency response plan** for SPAs and flood vulnerable areas, including an inventory of hazards, prioritization, and emergency response protocols (5-16).
4. TRCA - **Track advances in prediction of regional and local climate change** and re-assess local flood risks and management measures (5-17).

Enforcement

1. Various agencies, municipalities - Develop **inter-jurisdictional compliance protocols** for erosion & sediment control, tree cutting, topsoil and land disturbance, dumping, trespassing, and encroachment. Identify gaps in regulatory capability and capacity. Identify options for addressing gaps. Develop resources and an implementation plan (6-5).

Monitoring

1. TRCA and partners - Identify technologies that show promise and monitor their performance using the **Sustainable Technologies Evaluation Program** (STEP) - i.e., rainwater collection and re-use, permeable pavement, infiltration chambers, engineered media to remove phosphorus, groundwater and soil contamination risk with infiltration technologies, chloride removal techniques, long term performance and maintenance costs of any green technology, and green energy systems (7-1, 7-2).
2. TRCA, municipalities, MEI, BILD - Convene discussions with MEI and determine mechanisms for requiring developers to **monitor sustainable technologies** and other innovative design features **in Urban Growth Centres** to ensure performance targets are met (7-4).
3. TRCA, municipalities - Launch **cumulative effects monitoring programs** for innovative development design (7-6).
4. TRCA - Review recommendations for additional monitoring in the Don watershed as part of the next review and update of the **Regional Watershed Monitoring Network** (7-9, 7-11, 7-12, 7-15, 7-19).
5. TRCA, municipalities - Develop and implement a program to **monitor the success of ecological regeneration projects** and effectiveness of invasive species control sites (7-27).

Tracking progress

Progress towards the objectives set out in the watershed plan will be tracked by looking at watershed conditions compared with the target indicators identified in the plan. Changes and trends in the watershed conditions will be monitored under the Regional Watershed Monitoring Network and reported on a regular basis through publications such as the Don newsletter, TRCA website, Don Watershed Report Card and the TRCA Living City Report Card.

In keeping with the theme of taking advantage of every opportunity to make improvements, level of effort by watershed stakeholders will be another measure of success. The top priority projects in the *Implementation Guide* will be used as a guide to track progress on key actions. Regular input from municipal partners, the DWRC and other stakeholder groups will help to capture the full picture of on-going and emerging projects in the watershed that contribute to gains in environmental quality and community health.

Cooperation and sharing of resources and ideas will be essential to implementation of the watershed plan's recommendations. Recognizing that many issues raised in the Don Watershed Plan are applicable to all watersheds in the GTA and are of interest to multiple municipalities, TRCA proposes convening regular ad hoc meetings to build partnerships to address these common challenges.

Introduction

Don River Watershed Plan

The Don River Watershed Plan (TRCA, 2009) was prepared by TRCA in consultation with its municipal partners and the Don Watershed Regeneration Council to provide effective guidance for the regeneration of the watershed. The plan builds on the hard won gains made to date in protecting, regenerating and taking collective responsibility for this abused but still beautiful feature of our natural heritage. The watershed plan has a strong technical foundation, based on decades of monitoring of environmental conditions combined with a leading edge approach to modelling of potential future conditions and expert input during a series of management summits addressing key issues. A list of all supporting documents associated with the study can be found at the end of this Guide.

Many stakeholders believe that it may be possible to "hold the line" and possibly improve watershed conditions, but only if every opportunity for regeneration is considered seriously. While the major period of urbanization is nearing completion and the watershed systems are beginning to adjust to these new land uses, our goal is for improved conditions and we know we must prepare for climate change effects. The watershed plans plays a valuable role to inform and guide municipalities, provincial and federal governments and TRCA as they update their policies and programs for environmental protection, conservation, and restoration within the contexts of land and water use, and the planning of future urban growth. The plan provides direction to local non-governmental organizations and private landowners with regard to best management practices and opportunities for environmental stewardship. **Appendix A** provides the legislative and policy context for watershed plans.

Strategic Watershed Management Direction

The *Don River Watershed Plan* concludes that we are beginning to "hold the line" on further degradation of the watershed. Going forward, our primary challenge will be to better manage wet weather flows and to restore a more balanced flow regime to the river and its tributaries. The watershed plan identifies three strategic themes for the regeneration of the watershed:

1. **Build, re-build and retrofit our communities to restore water balance and improve sustainability**.

The *Don River Watershed Plan*, especially the wet weather flow control aspects of the Plan, must be implemented during redevelopment and infilling projects, retrofit of existing built areas, and development of the remaining greenfield areas. Balancing the flow regime of the Don and its tributaries through stormwater source controls will yield a number of associated benefits. The reduction of peak flows following storms and the maintenance of adequate baseflow between events will reduce the risk of flooding and erosion related damage, while supporting the protection and regeneration of healthy aquatic and terrestrial habitats. Redevelopment throughout the watershed will also provide additional opportunities to protect greenspaces and cultural heritage structures, expand the trail system and urban tree canopy, undertake energy and water conservation improvements, and, otherwise, achieve incremental, cumulative gains in watershed function and condition.

2. Regenerate the aquatic and terrestrial landscapes.

The concerted work of agencies, organizations and individuals has produced improvements in watershed conditions. Some water quality parameters have improved, tens of thousands of trees and aquatic flora have been planted, a number of in-stream barriers to fish have been removed, and trail systems have expanded. There is a continued desire to improve watershed conditions, contribute to de-listing the Toronto Area of Concern (RAP), and regenerate the Mouth of the Don into an internationally recognized example of a healthy urban river. However, continued development and urban intensification, coupled with the impacts of climate change will place additional pressures on the ecosystems of the watershed. Future gains will be contingent on maintaining the enthusiasm and support of the local community, businesses and government for regeneration actions. In addition to 'sweat equity', support must include guaranteed funding to cover the significant capital and on-going maintenance costs of the requisite infrastructure.

3. Engage the people of the Don.

The Don River watershed has a long history of grassroots and agency involvement in and advocacy for regeneration. Annual celebrations, such as Paddle the Don and the Richmond Hill Mill Pond Splash, as well as major naturalization and brownfield rehabilitation projects in the lower Don engage the community and provide a wider awareness of the Don. The time is ripe to capitalize on that interest across the watershed, and re-engage the people of the Don to achieve the vision of a revitalized urban river. The engagement and voluntary uptake of sustainable practices — backyard naturalization, lot level stormwater retrofits, etc. — by residents and businesses in the Don will be essential to achieving the vision. Stewardship and outreach education to build understanding of the links between landowner actions and watershed health will be key.

Purpose of this Implementation Guide

The watershed plan recommends a number of specific management strategies that will be necessary to achieve the goals and objectives for watershed health and that fall within the three areas of integral action identified above. To accomplish these management strategies, we need the co-ordinated efforts of government agencies and community leaders and we need to employ a range of implementation tools, including:

1. Policy;
2. Regeneration;
3. Land Securement;
4. Stewardship, Education and Awareness;
5. Operations, Management and Maintenance;
6. Enforcement; and
7. Monitoring and Research.

The purpose of this *Implementation Guide* is to facilitate implementation of the watershed planning study recommendations by specialized practitioners and various watershed stakeholders. This Guide organizes the watershed plan recommendations according to the relevant implementation tools and assembles additional mapping, criteria or references that will inform *initial* action on the recommendation.

A 10 year work plan of proposed implementation projects is provided in a table in each section of the Guide. The proposed projects are found in the "next steps" column of each table (highlighted with grey shading), in the context of other reference information including the relevant *Don River Watershed Plan* recommendations being addressed, existing programs, and suggested target audiences, implementing partners and timeframe. Highlighted project numbers (e.g., **1-1***) indicate those projects that are considered to be "top priority" and worthy of initial efforts at implementation. These projects were identified in consideration of their ability to address one or more of the three strategic management directions for the watershed, their urgency due to imminent timing of potential threat or opportunity and their ability to support other priority projects. These top priority projects are listed in the Executive Summary. The proposed projects are intended to serve as a basis for discussion among implementing partners and as a source for the further development of individual partners' own long term work plan and budget preparations.

At this stage, the watershed planning phase draws to a close and the long term process of implementation begins. We expect there will be continued dialogue and transfer of knowledge from those players involved in the development of the watershed plan to the ever-expanding number of players involved in its implementation.

1. Policy

Land use planning policies are an important mechanism for the implementation of watershed plans. Therefore, at the outset of the Don study, TRCA and its municipal partners expressed interest in ensuring that the *Don River Watershed Plan* would provide adequate guidance for implementation of its main findings and recommendations through policy mechanisms.

Under the *Oak Ridges Moraine Conservation Plan* (ORMCP) subsection 24(4), major development on the ORM can only be approved in conformity with the objectives and requirements of the watershed plan. However, very few opportunities remain for major greenfield development on the ORM in the Don River watershed. By and large, these lands are either already developed or developing and subject to urban designations under approved block or subdivision plans. As the era of greenfield development in the Don draws to a close, the policy focus is shifting towards development of mechanisms for enhancing the sustainability of the existing urban form. Infilling, intensification, and redevelopment in provincially designated Urban Growth Centres and other locations across the watershed will offer opportunities to improve water balance, protect and enhance the terrestrial natural heritage system and urban forest, revitalize greenspaces and trails, and incorporate improved water and energy conservation.

The ORMCP Technical Paper Series #9, *Watershed Plans*, provides direction for implementing the results of watershed plans for those portions of the watershed on the ORM. It states: "The objectives and requirements of watershed plans should be incorporated into both upper-tier and lower-tier municipal official plans (ORMCPs s. 24(2)). The upper tier official plan should provide policy direction to the lower-tier municipalities with respect to incorporating the recommendations of the watershed plan into their official plans, secondary plans and zoning by-laws. The lower-tier plans and zoning by-laws should provide more detail." The *Don River Watershed Plan* together with the *Implementation Guide* provide an understanding of the overall health of the watershed and strategies to maintain or improve its ecological and hydrological integrity. These strategies will help guide the development of municipal official plan policy so that the ORMCP conformity requirements for major development are clearly linked to municipal official plans and the land use planning process.

Technical paper series #9 references the guidance document *Watershed Planning – From Recommendations to Municipal Policies*, prepared by the York Peel Durham Toronto (YPDT) Groundwater Study and the Conservation Authorities Moraine Coalition (CAMC), as a framework for translating watershed plan recommendations into municipal official plan policies. The YPDT/CAMC guidance document was crafted through a series of facilitated workshops to address municipal and conservation authority staff questions about how to incorporate watershed plan recommendations into municipal policies. The workshops were attended by a broad spectrum of environmental professionals from both upper and lower tier municipalities and conservation authorities, including planners, ecologists, hydrogeologists and water resource engineers. Model policies were developed for four topic areas – Ground and Surface Water Resources, Natural Heritage, Landform Conservation and Infrastructure. While the project was originally undertaken to address ORM requirements, the project participants felt that the policies had a broader application to the entire Greater Toronto Area.

Policy recommendations of the *Don River Watershed Plan* fall into two groups:

1. New Policy Directions; and
2. Special Policy-Related Studies.

1. New Policy Directions

Table 1.1 summarizes the *Don River Watershed Plan*'s recommendations for new policy directions that should be implemented through the municipal land use planning process, including official plans, secondary plans, plans of subdivision and site plans. Municipalities can use this Table in two ways: 1) to review and update their own Official Plan policies and schedules; and 2) as a checklist in the review of development applications (e.g., to determine study requirements and establish conditions of approval).

The policy recommendations contained in Table 1.1 build on the model policies from the YPDT/CAMC guidance document, by incorporating the science from the *Don River Watershed Plan* and the issues specific to the Don watershed. The policy recommendations are not written to be directly incorporated into municipal official plans. Rather, their intent is to provide a broader policy direction that municipal planners can use as the basis for crafting similar policies, tailored to their local circumstances and formats of their own municipal official plans, while maintaining the substantive intent of the recommended policies. It is recognized that existing municipal official plans already contain many good environmental policies. The policy recommendations in this *Implementation Guide* are meant to strengthen these existing policies or provide policy direction for new/emerging topic areas. They will be particularly useful to inform further official plan policy discussions as they relate to growth planning issues.

2. Special Policy-related Initiatives

Table 1.2 includes recommendations for special policy-related initiatives or studies, often associated with the new policy directions. These recommendations are to be implemented through provincial legislation and plans for the Oak Ridges Moraine, Greenbelt, Growth Management and Source Water Protection, municipal by-laws, and special studies.

One of these recommendations pertains to the need for municipalities to address the watershed plan's recommendations under their official plans, as per requirements of the ORMCP. Under section 24(4) of the ORMCP, major development can only be approved in conformity with the objectives and requirements of the watershed plan. **Figure 1.1** shows the location of the Oak Ridges Moraine and **Figure 1.2** is a compliance checklist for the review of "major development" on the Oak Ridges Moraine in the Don River watershed. This checklist has been assembled to facilitate that review by municipal planners. **Appendix B** contains an assessment of how the watershed plan conforms with the watershed planning requirements of the ORMCP.

Table 1.1 Top 10 New Policy Recommendations for the Don Watershed

1. Water Balance, Volume Control & Groundwater Recharge Areas	
Overall Policy Direction	• All redevelopment should aim to manage for improved water balance on the development site and net gain in stormwater control across the larger redevelopment area. • All greenfield development should aim to maintain pre-development volumes of infiltration, evapotranspiration and surface runoff, with particular emphasis on areas identified as having significant groundwater recharge, high volume groundwater recharge, or ecologically significant groundwater recharge (**Figure 1.3**).
Policy Rationale	• Redevelopment offers opportunities to achieve improvements in stormwater control and flood risk, at the scale of the site and the larger redevelopment area. • Current stormwater management practice is to manage for "peak flows" from a flood risk standpoint, with some degree of erosion and water quality considerations, but this is proving inadequate. Downstream erosion impacts continue to degrade aquatic habitats and alter natural stream-form processes which can put stream-side infrastructure at risk, leading to increased maintenance and repair costs and in some cases, premature failure or replacement. To minimize these risks stormwater management for new development needs to be undertaken on a "volume control" basis that maintains pre-development runoff rates, flow paths and water quality as much as possible. Maintenance of predevelopment recharge rates is especially important in areas on the Oak Ridges Moraine where recharge is expected to maintain local stream baseflow in sensitive aquatic habitats and regional aquifer levels. Maintenance of recharge will contribute to maintenance of pre-development runoff rates.
Policy Recommendations Implement source, conveyance and end-of-pipe stormwater management facilities (retrofit and new) and maintain existing facilities across the watershed – Rec. 1 – Caring for Water Protect groundwater recharge and discharge areas – Rec. 3 – Caring for Water Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings – Rec. 3 – Caring for Community – Land and Resource Use Implement sustainable infrastructure planning, implementation and monitoring – Rec. 7 – Caring	*General* • Implement TRCA's *Stormwater Management Criteria* document and City of Toronto's *Wet Weather Flow Guidelines* (November 2006) (as updated) for redevelopment and new development which require stormwater volume and peak flow control • Protect the functions of significant groundwater recharge areas, high volume groundwater recharge areas and ecologically significant groundwater recharge areas (**Figure 1.3**). *Greenfield* • Eliminate or minimize increases to runoff volume from new development sites. • Undertake hydrological studies and modelling as part of environmental planning associated with large scale new development proposals (e.g., through Master Environmental Servicing Plan (MESP) studies for Secondary Plans or block plans) to confirm or refine recharge rates and groundwater flow directions and the significance of their functions in sustaining aquifer water levels, groundwater flow patterns, aquatic habitat (where target species rely on groundwater discharge) and natural heritage systems and features. • Require site-specific hydrogeological studies and modelling for major development (i.e., subdivisions, major infrastructure) proposed in areas confirmed through the MESP as significant recharge areas in order to define the local pre-development water balance, establish site-specific water balance criteria that maintain ecological functions and demonstrate how the appropriate proportion of infiltration and evaporation/reuse measures for stormwater management will achieve the water balance objectives established through the MESP studies. • When establishing land use designations for planned urban boundary expansions, direct open space, natural heritage system or other compatible land uses (i.e. low imperviousness) to areas identified as significant groundwater recharge areas, high volume groundwater recharge areas or ecologically significant groundwater recharge areas, where possible (**Figure 1.3**). *Redevelopment, Infilling, Intensification* • Reduce runoff volumes from redevelopment sites. • When planning for major redevelopment within the built boundary to meet provincial intensification targets (including road expansion or reconstruction projects) stormwater management plans should be prepared and retrofits designed in an integrated and comprehensive manner.

Table 1.1 Top 10 New Policy Recommendations for the Don Watershed

for Community – Land and Resource Use	• Undertake hydrological studies and modelling as part of environmental planning associated with known or expected redevelopment or intensification areas (including Urban Growth Centres shown in **Figure 1.1** and other redevelopment areas identified in municipal official plans), Environmental Assessments for infrastructure projects, and major regeneration projects, to develop stormwater retrofit plans that will achieve net benefit across the larger redevelopment area. *Infrastructure* • Road, transit and other infrastructure projects that entail expansion of an existing service should provide full stormwater management for not just the new infrastructure, but for the existing infrastructure as well (i.e., for a road widening, stormwater management should treat both the old and new sections of the road).
Best Practices for Implementation	*General* • Incorporate stormwater management measures that meet multiple objectives (e.g. water quality, erosion control, etc.) and require minimal land areas. • Following construction, require replacement of an optimum depth of topsoil in pervious areas (e.g. parks, open spaces, yards, etc.), that has been amended with compost, to maintain or increase pre-development soil moisture storage and infiltration capacity and to provide a suitable environment for restoring vegetation, based on stormwater management and vegetation cover targets. • Incorporate a treatment train hierarchy for stormwater management, with increased emphasis on lot level/source and conveyance methods in addition to the traditional end-of-pipe methods, to meet watershed or local objectives for water quality, erosion control, flood control, and water balance. • Minimize the amount of impervious surface areas (i.e. impervious surfaces that drain directly to storm sewers). Adopt green design standards for all new and retrofitted parking lots to improve on-site stormwater management (e.g., City of Toronto's *Design Guidelines for 'Greening' Surface Parking Lots*). • In developments where water table is shallow (less than 2 metres depth below surface) convey cool, clean groundwater collected by foundation drains directly to watercourse or wetlands rather than stormwater management ponds, where possible, to avoid contamination and increases in temperature. • Identify and protect recharge and discharge as well as subsurface flow directions through municipal plans, policies and regulations. • Maintain groundwater flow directions, particularly where groundwater is believed to be flowing across watershed boundaries. • Adopt policies that allow rainharvesting and use within buildings for nonpotable uses. *Greenfield* • Where high recharge areas are not present and site conditions do not permit infiltration, alternate measures should be provided to evaporate, transpire or reuse a volume of runoff equivalent to pre-development infiltration plus such additional volume as is required to prevent watercourse impacts. *Redevelopment, Infilling, Intensification* • Stormwater management plans for redevelopment projects should be undertaken in consultation with TRCA. • Untreated stormwater run-off from external existing developments should be treated, to the greatest extent possible, in redevelopment projects. • Where infiltration opportunities are limited, stormwater management plans for redevelopment projects should include other practices to address water balance objectives for the reduction of runoff volume, including replacement of an optimum depth of topsoil, naturalization of landscaped areas, rain gardens, rain harvesting and green roofs, especially on commercial/industrial/institutional properties with extensive impervious surfaces.

Table 1.1 Top 10 New Policy Recommendations for the Don Watershed

	Infrastructure • In planning and design of subsurface infrastructure (e.g. sewers and watermains) avoid areas where the water table is predicted to be shallow (less than 2 metre depth below surface). Where construction below the water table is necessary, mitigate impacts on groundwater flow and discharge. • Avoid or mitigate disruptions to water balance and groundwater recharge areas during underground infrastructure projects.
2. Stormwater Retrofits in Existing Developments	
Overall Policy Direction	• Support retrofits of source/lot level, conveyance and end of pipe stormwater management measures in existing developments and redevelopment projects on a comprehensive basis.
Policy Rationale	• There is a critical need to improve stormwater management throughout the watershed, but especially in developed areas lacking stormwater control. Uncontrolled stormwater flows have led to flooding, erosion and degraded water quality, as well as impacts on municipal infrastructure and aquatic and valley habitats. • The aim is to develop and implement co-ordinated plans to improve stormwater quality and manage quantity on a "volume control" basis in urban areas where controls are either absent or do not meet current standards.
Policy Recommendations Implement source, conveyance and end-of-pipe stormwater management facilities (retrofit and new) and maintain existing facilities across the watershed – Rec. 1 – Caring for Water	• Existing developments with outdated or absent stormwater controls should be retrofit to the degree possible, to incorporate a treatment train hierarchy with source, conveyance and end-of-pipe measures to provide water quality treatment, erosion control, flood control and address water balance objectives. • Implement City of Toronto's *Wet Weather Flow Management Master Plan* according to the *25-year Implementation Plan* (as updated). • Implement end-of-pipe stormwater retrofits (outfalls and ponds) as outlined in City of Vaughan, Town of Richmond Hill, and Town of Markham retrofit studies (as updated).
Best Practices for Implementation	• See the Best Practices under the "Water Balance, Volume Control, and Groundwater Recharge Areas" section in Table 1.1

3. Master Environmental Servicing Plans (MESPs) for Redevelopment and Regeneration Areas[1]	
Overall Policy Direction	• Require MESPs to be undertaken in conjunction with planning for urban redevelopment, including redevelopment in the four provincially designated Urban Growth Centres (Downtown Toronto, Yonge-Eglinton Centre, North York Centre, Richmond Hill – Langstaff Gateway) (**Figure 1.1**), municipally identified redevelopment areas, major infrastructure projects, and major regeneration projects.
Policy Rationale	• Redevelopment is likely to proceed in a piecemeal fashion without the coordination that MESPs could provide. Improvements in stormwater control, flood risk, terrestrial natural heritage, and the greenspace and trail networks often are considered infeasible during site-by-site redevelopment, but may be achieved through careful planning of larger redevelopment areas. • Sustainable community planning and development requires that the environmental systems framework and the functional relationship and interdependencies of the water resources system and the natural heritage system be scientifically understood and commitments made to regenerate or enhance the systems before redevelopment proceeds. As the key tool for determining development form in

[1] *The term redevelopment MESP is used in the implementation guide to refer to comprehensive strategic plans undertaken in advance of redevelopment or regeneration projects. Individual municipalities may adopt their own names for these types of plans as a whole or on a case-by-case basis related to the study trigger.*

	relation to the natural system and environmental servicing infrastructure, MESPs identify features, functions and linkages and define protection and mitigation measures to address watershed policy recommendations such as those listed in the other sections of this table.

Policy Recommendations
 	
MESPs for redevelopment areas and regeneration areas should be required to coordinate property redevelopment and regeneration in a comprehensive way – Rec. 2 – Caring for Community – Land and Resource Use
	• Planning triggers for redevelopment MESPs could include designation of intensification and/or redevelopment areas (including provincial Urban Growth Centres and municipally identified areas), single or multiple planning applications in an area, an environmental assessment, a major regeneration project, identification of a problem area (e.g., areas in need of flood mitigation), or identification of a sustainable neighbourhood retrofit location (see Chapter 2),
	• The appropriate study area of redevelopment MESPs should be determined in part by the planning trigger (above) and informed by natural and human system boundaries (e.g., surface hydrology, sewershed, Urban Growth Centre area, secondary plan area, etc.). The scale should allow for consideration of the cumulative as well as upstream and downstream effects of all proposed redevelopment in the study area.
	• The Terms of Reference and study area for a redevelopment MESP should be set by the municipality.
	• The MESP will generally include water resource system studies to address and confirm:
	  • Groundwater recharge and discharge areas, flow rates and flow paths;
	  • Aquifer vulnerability;
	  • Water balance;
	  • Flood and erosion risks and controls, and mitigation opportunities;
	  • Geomorphic analysis to identify least risk areas for infrastructure stream crossings; and
	  • A conceptual water management strategy describing the stormwater drainage design including source, conveyance and end-of-pipe measures to be utilized in proposed developments including approximate locations and preliminary sizing.
	• The MESP will generally include terrestrial natural heritage system studies to address and confirm:
	  • The extent and composition of the existing natural heritage system;
	  • How the Target Terrestrial Natural Heritage System may be refined and implemented based on locally identified opportunities and the most current field data; and
	  • The functional relationship and interdependencies of the water resources system and the natural heritage system.
	• The MESP should also address at the appropriate level of detail:
	  ▪ Implementation of transportation strategies and servicing master plans relative to minimizing the number of crossings of the natural heritage system and stream corridors and minimizing interference with significant recharge areas;
	  ▪ Implementation of water and energy conservation strategies;
	  ▪ Establishment of the pre-development baseline monitoring program;
	  ▪ Cultural heritage and archaeological investigations and consultation requirements; and
	  ▪ Conceptual trail routes and greenspace enhancements.

Best Practices for Implementation	• See other sections of Table 1.1 for Best Practices relating to water balance and stormwater management, urban form, terrestrial natural heritage, greenspace, flood mitigation, erosion and sediment control, fisheries management and monitoring. These elements should be integrated into urban design. • Identify and map the water and natural heritage features, functions and a recommended system that should be regenerated, enhanced and protected. • Identify sensitive or significant areas where further detailed study is required in order to establish criteria for development and a suite of potential mitigation measures. • Identify significant stream corridors where natural heritage objectives require optimum design and opening size of crossings to minimize impacts to terrestrial, aquatic or geomorphic function (as per TRCA's *Watercourse Crossing Design and Submission Requirements*). • Establish a monitoring program to inform future adaptive management needs.
4. Sustainable Urban Form	
Overall Policy Direction	• Develop strategies and policies to promote sustainable urban form, including sustainable infrastructure, transportation and energy and resource conservation, at the neighbourhood, site and building/project scales.
Policy Rationale	• To create and retrofit compact and healthy communities that maximize the efficient use of resources while minimizing the negative community, personal health and environmental effects of energy-intensive sprawling land use patterns.
Policy Recommendations Implement sustainable urban form and adopt green development standards for neighbourhoods, sites and buildings – Rec. 3 – Caring for Community – Land and Resource Use Implement sustainable infrastructure planning, implementation and monitoring – Rec. 7 – Caring for Community – Land and Resource Use Implement source, conveyance and end-of-pipe stormwater management facilities (retrofit and new) and maintain existing facilities across the watershed – Rec. 1 – Caring for Water	• Adopt Sustainable Neighbourhood Development guidelines and encourage certification (e.g., LEED for Neighbourhood Developments) for all new and retrofit neighbourhoods, subdivisions, and sites. • At the community scale, implement innovative design during retrofit and greenfield development to achieve more pedestrian oriented, transit supportive, ecologically sustainable, mixed use communities. • Develop partnerships between utilities and municipalities to facilitate the use of district energy schemes and renewable energy sources as part of the community design. • Promote residential and industrial grid-tied energy generation capacity using renewable energy sources, with surplus energy purchased by the utility at the market rate. • Implement Regional and City transportation strategies and master plans by undertaking strategic transportation corridor and network planning studies at the MESP stage in order to reduce the number of crossings of streams and other natural heritage corridors, before environmental assessments are undertaken for specific projects. • Municipalities and TRCA should strengthen policies to direct infrastructure outside of natural and hazard areas for new development and explore opportunities to remove existing infrastructure from natural areas when redevelopment occurs, or when infrastructure is at risk or undergoing maintenance. • Adopt a triple bottom line approach to infrastructure planning through the Environmental Assessment process. • See other sections of Table 1.1 for Policy Recommendations relating to water balance and stormwater management, terrestrial natural heritage, greenspace, flood mitigation, erosion and sediment control, fisheries management and monitoring.
Best Practices for Implementation	• See other sections of Table 1.1 for Best Practices relating to water balance and stormwater management, terrestrial natural heritage, greenspace, flood mitigation, erosion and sediment control, fisheries management and monitoring.

	General • Promote standards or certification programs such as LEED for neighbourhoods or Green Globes • Incorporate green building design such as green roofs and solar panels • Secure additional public lands or make multiple use of public recreation lands for infiltration and stormwater management to complement lot level practices (e.g., along road rights of way, along trails, in parks and open space, on municipal properties) • Minimize the amount of impervious surface area including reduced street widths in low-traffic areas, innovative road network designs, shared and underground parking, etc. • Make provisions for near urban agriculture and community gardens. *Energy* • Orient buildings to maximize sunlight, passive solar energy, wind shelter and natural ventilation, and incorporate landscaping to reduce energy needs. • Require new homes to meet at a minimum standard such as Energy Star certification requirements or an EnerGuide rating greater than 80. *Water Conservation* • Require use of water conservation practices (e.g., ultra low flush toilets, low flow shower heads, rain sensor switches for automated irrigation systems). • Integrate dual plumbing to use rain water for toilet flushing or irrigation, especially where abstraction is desirable to meet water balance objectives. *Infrastructure* • Require Environmental Management Plans for major infrastructure at the detailed design stage to serve as a due diligence and adaptive management tool for mitigation measures during construction based on observed vs. predicted impacts • Consolidation of infrastructure in utility corridors (i.e., utilidors) may be recommended to minimize present and future disruption to natural systems during maintenance.
5. Target Terrestrial Natural Heritage System	
Overall Policy Direction	• Identify a target Terrestrial Natural Heritage System based on the system recommended in the watershed plan for inclusion in municipal plans (see **Figure 1.7**) and adopt policies to protect and regenerate a minimum of 13% of the land base as natural cover in the Don watershed.
Policy Rationale	• Natural cover provides multiple benefits such as: reducing storm runoff volumes, mitigating climate change, enhancing urban aesthetics and increasing property values, recreational opportunities, increasing biodiversity and improving air quality.
Policy Recommendations Secure the Target Terrestrial Natural Heritage System and look for additional opportunities for expansion – Rec. 2 – Caring for Nature – Terrestrial System	• Identify a target natural heritage system for the Don Watershed in official plans and adopt policies to protect and regenerate natural cover. • Start securing the target system with unprotected lands subject to greenfield development or intensification, lands in the Protected Countryside areas of the *Greenbelt Plan/Oak Ridges Moraine Conservation Plan* (ORMCP), and lands in the Natural Core and Linkage areas of the ORMCP. • Apply the principle of "net gain" to provide compensatory habitats to replace features and habitats within the NHS that cannot be retained during private development, infrastructure and other public sector projects. Develop an ecosystem services based financial tool to adequately value features and functions • Manage the interface of development with the natural heritage system in new and re-developments and infrastructure to enhance natural

Improve ecological function of the entire urban landscape, from the natural areas to the built areas, by increasing vegetation covers through better urban design and land management – Rec. 1 – Caring for Nature – Terrestrial System Terrestrial natural cover on historical lots of record that extend into ravines should be protected from loss during redevelopment or intensification by designating it "open space" in municipal official plans and conforming zoning designations – Rec. 5 – Caring for Community – Land and Resource Use	heritage through completion of Naturalization, Restoration and/or Edge Management Plans. • Develop urban forest management plans addressing planting and maintenance conditions of street trees, yard trees, and trees in parks and natural areas. • Consider integrating into the Terrestrial Natural Heritage System (TNHS) potentially significant groundwater recharge areas, high volume groundwater recharge areas, and ecologically significant groundwater recharge areas (**Figure 1.3**), where they are shown to make an important contribution to the ecological integrity of the TNHS (i.e. where possible, give protection to lands that provide multiple function). • All lands deemed to be part of the Terrestrial Natural Heritage System should be dedicated into public ownership through any subsequent applications for development or land use change. • Terrestrial natural cover on historical lots of record that extend into ravines should be protected from loss during redevelopment or intensification by designating it "open space" in municipal official plans and conforming zoning designations. • Adopt policies to address habitat regulations under the *Endangered Species Act*.
Best Practices for Implementation	• Incorporate design elements into urban developments, including buffers, barrier plantings and trails, which improve the interface of the urban fabric with existing natural areas. • Require the use of native species in site restoration planting plans and a sign-off by a qualified professional on an "as installed" basis.
6. Protection and Enhancement of Greenspace[2] and Trails, and Cultural Heritage	
Overall Policy Direction	• Protect and enhance the quality and extent of public greenspaces and trails, connecting and protecting the natural and cultural heritage of the Don watershed (see **Figures 1.6, 1.7 and 1.8).**
Policy Rationale	• The greenspaces and trails of the Don watershed are heavily used and enjoyed by a growing population. • Lack of trail and natural and cultural destination connectivity, as well as management challenges (conflicting and incompatible uses, impact on sensitive ecological areas, informal trails, dumping and litter, erosion) are limiting the quality of nature-based experiences and straining operations and maintenance budgets. • Long-term parks growth planning and funding are needed to ensure the current and future condition and accessibility of greenspaces, trails, and destinations, to meet local and regional demands.
Policy Recommendations Protect and enhance the quality and extent of public greenspaces throughout the watershed, and, in particular, in areas of increasing population density and redevelopment – Rec. 1 –	• Protect existing greenspace lands and add to the greenspace system, where possible, during redevelopment and greenfield development. • Develop regeneration plans for greenspaces based on monitoring/research into threats/stressors to ensure protection of the integrity of greenspaces and natural areas, with consideration for growth plan population density projections and anticipated intensification of use. High priority sites are the Don Valley Brick Works and other parks near the provincially designed urban growth centres (**Figure 1.1**). • Develop new funding mechanisms for operations, maintenance and retrofit of existing green spaces (e.g., capital facilities such as land and improvements to valleys and the urban forest under Section 37 of the *Planning Act*) during redevelopment and intensification. • Expand the inter-regional trail network and implement municipal trail and cycling plans during greenfield and redevelopment.

[2] *"Greenspaces" are defined as all publicly-owned land available for nature-based recreation, including municipal parks and conservation lands, and valley and stream corridors. This does not include golf courses, cemeteries, and municipal parks intended for intensive recreational use.*

Caring for Community – Nature-based Experiences Expand the network of formal trails to connect key destinations and improve connectivity with neighbouring watersheds, the Oak Ridges Moraine, and the waterfront – Rec. 2 - Caring for Community – Nature-based Experiences Identify, investigate and conserve cultural heritage prior to changes in land use or redevelopment – Rec. 1 – Caring for Community – Cultural Heritage	• Secure lands to establish the missing links in municipal trails. Work with private landowners (e.g. golf courses, hydro corridors) to acquire easements for trail access where acquisition is not a suitable alternative • Adopt standards of practice for public use operators, such as environmental management systems for public agencies and Audubon Program or equivalent for golf courses, where these uses are adjacent to the Natural Heritage System in order to maintain or enhance the NHS. • Designate pet off-leash areas outside of sensitive natural heritage areas, in partnership with user groups. • Apply the conservation measures outlined in the *Ontario Heritage Act* as a component of the municipal planning process, namely property listing and designation, protective easements, architectural design guidelines, the support role of municipal heritage committees, and grants, loans, and incentives for heritage conservation. • Conduct thorough archaeological assessments in remaining areas potentially subject to greenfield development or intensification and development, and minimize impacts to cultural heritage landscapes resulting from future development, as per the mandate of the *Provincial Policy Statement* (2005) and the directives of the *Planning Act* and the *Environmental Assessment Act*. These reviews should incorporate field investigations and evaluation of 19th century farm, industry, and community features and built heritage, as well as identification, preservation, and interpretation of below ground and marine archaeological resources. • Retain Aboriginal archaeological sites as greenspaces, to the extent possible, with limited investigative excavations, preserved and protected as designated properties or cultural heritage landscapes under the *Ontario Heritage Act*. • Maintain the countryside character of sections of the remaining rural roads, such as Kirby Road, as part of the cultural heritage landscape. Associated historic farmsteads could be maintained or adapted for future uses. • Conduct detailed reviews of archaeological potential as part of the master planning process. • Update Archaeological Master Plan studies for the Town of Markham and Town of Richmond Hill.
Best Practices for Implementation	• During parks redevelopment, consider opportunities to incorporate stormwater control. • Prevent incompatible uses in proximity to sensitive natural and cultural heritage landscapes. • Dedicate lands for public trail purposes through the planning process (see **Figure 1.6**). • Incorporate heritage buildings and their contextual surroundings (i.e. an appropriate buffer) into proposed developments • Consult with community and local descendant populations regarding cultural heritage features • Employ avoidance or mitigation measures for the protection of cultural heritage resources, including: ➢ Alternative development approaches ➢ Isolating development and site alteration from significant built and natural features and vistas ➢ Design guidelines that harmonize mass, setback, setting and materials ➢ Allowing only compatible in fill and additions ➢ Reversible alterations ➢ Buffer zones, site plan control, etc. (See Ministry of Culture. 2005. *Heritage Resources in the Land Use Planning Process*)
7. Comprehensive Flood Risk Assessment Plans	
Overall Policy Direction	• Conduct comprehensive flood risk assessment plans where redevelopment or intensification is proposed in a flood vulnerable area (FVA) and/or a Special Policy Area (SPA) (**Figure 1.9**) that would maintain or decrease the existing level of risk and detail flood remediation, flood proofing, flood warning, and emergency response measures.
Policy Rationale	• To maintain or decrease the existing level of risk where redevelopment or intensification is proposed in flood vulnerable areas and/or Special Policy Areas. Notwithstanding the provincial direction for SPAs in the Provincial Policy Statement, there is still pressure for new development in FVAs and this trend is expected to continue with implementation of the Growth Plan. • Mitigation of existing flood risk may help to reduce the impacts of more severe or frequent flooding under climate change conditions. • Comprehensive flood risk planning will help offset potential long term economic costs to municipalities of flood mitigation (e.g., financial

	implications associated with aging municipal infrastructure at risk from severe or frequent flooding events and increased capacity demands).
Policy Recommendations **Manage flood risks – Rec. 2 – Caring for Water** **Improve planning for and continue implementation of flood remediation – Rec. 4 – Caring for Community – Land and Resource Use**	• No new development should be permitted in the floodplain. • Where a change in land use, redevelopment or intensification is proposed in a flood vulnerable area, the municipality should work with the proponent, TRCA, and the Province (where applicable) to conduct a comprehensive risk assessment plan that would maintain or decrease the existing level of risk and detail flood remediation, flood proofing, flood warning, and emergency response measures. • Prior to secondary plan approval, undertake as part of an MESP, an updated hydrologic and hydraulic study at the appropriate scale (subwatershed) to evaluate the effects on potential future flooding and to confirm the level of stormwater management control required. • Work with municipalities to update their zoning by-laws where restrictive zoning for flood vulnerable areas is not in place • Complete and implement basement flooding remediation programs. • Flood remediation opportunities should be integrated with community planning and urban design.
Best Practices for Implementation	• Support flood risk reduction programs to improve hydraulic capacity of road and rail crossings in flood vulnerable areas and identify prioritized remediation plans. • Use a treatment train hierarchy for stormwater management practices to ensure no increase in pre-development peak flows, based on the most recent hydrologic and hydraulic studies. • Incorporate opportunities to remediate flood vulnerable roads or sites when designing infrastructure improvements to service, such as watercourse crossings. • Restore natural cover in the catchments upstream of flood vulnerable areas to help attenuate flood flows (e.g., no mow zones, riparian plantings, grass swales). See also Section 5 (O & M of this *Implementation Guide*)
8. Erosion Prevention & Sediment Control	
Overall Policy Direction	• Adopt the *Greater Golden Horseshoe Conservation Authorities' Erosion & Sediment Control Guideline for Urban Construction* and update municipal Erosion and Sediment Control by-laws and Fill by-laws as necessary.
Policy Rationale	• Current guidelines and enforcement have not been adequate to prevent degradation of watercourses and fish habitat from sedimentation from construction sites.
Policy Recommendations Improve erosion and sediment control and site restoration – Rec. 4 – Caring for Water	• Require adherence to the *Greater Golden Horseshoe Conservation Authorities' Erosion & Sediment Control Guideline for Urban Construction*, as amended from time to time. • Update municipal Erosion and Sediment Control by-laws and Fill by-laws to current standards. • Restrict topsoil stripping until draft approval.
Best Practices for Implementation	• Ensure appropriate erosion prevention and sediment controls are in place prior to topsoil stripping. • Improve construction management practices by developers by adopting a "M.O.R.E." approach to erosion prevention and sediment control – Multi-barrier; Ongoing process; Regular inspection; Education. • Phase topsoil stripping to smaller geographic areas and require site stabilization/re-vegetation as soon as possible using site appropriate species. See also Section 6 (Enforcement) of this Guide
9. Fisheries Management Plan	
Overall Policy Direction	• Adopt policy to recognize and implement the *Don River Watershed Based Fisheries Management Plan*.

Policy Rationale	• To protect, regenerate and enhance the health and diversity of native aquatic habitat, communities and species in the Don. • To protect and maintain existing populations of redside dace (listed as endangered under the provincial *Endangered Species Act* and listed as a species of special concern under the federal *Species at Risk Act*).
Policy Recommendations Protect and improve instream habitat for the Indicator Species, as per the Fisheries Management Plan – Rec. 2 0 Caring for Nature – Aquatic System Implement Redside Dace Recovery Team recommendations – Rec. 1 – Caring for Nature – Aquatic System	• Require proponents of land use change to implement best management practices as documented in the *Don River Watershed Based Fisheries Management Plan* (FMP). • Protect and improve instream habitat for the Indicator Species identified for each Fisheries Management Zone (**Figure 1.4**). • In areas identified in the FMP as habitat for the fish species redside dace, adherence to the recommendations listed for minimum riparian buffer width in the Redside Dace Recovery Strategy (Draft MNR, 2005 or as updated) should be upheld. The highest level of protection between the two "plans" (FMP/Recovery Strategy) should be applied. • Adopt policies to address habitat regulations under the *Endangered Species Act*.
Best Practices for Implementation	• Protect natural stream form, using TRCA's *Valley and Stream Corridor Management Program* (or as updated) and *Ontario Regulation 166/06*, municipal official plan policies, *the Fisheries Act*, the *Oak Ridges Moraine Conservation Plan* and the *Greenbelt Plan*. • DFO, conservation authorities and municipalities should continue to work in partnership to apply interim guidelines for assessing the function and appropriate treatment of headwater drainage features through the development planning process and refine them where necessary (*Evaluation, Classification and Management of Headwater Drainage Features: Interim Guidelines*, Credit Valley Conservation and TRCA, 2007). • Road crossings over watercourses should be sized appropriately and sited at appropriate locations to minimize potential for alterations to channel form and allow for natural movement of the channel within the flood plain (for example, not on a meander). • Increase and improve natural cover along stream corridors (restoration of riparian areas) and on tableland as identified in the Target Terrestrial Natural Heritage System (**Figure 1.5**). • Apply recommendations of the *Don River Watershed Based Fisheries Management Plan* at the Fisheries Management Zone scale. • Protect the conveyance and habitat functions of headwater drainage features by maintaining and managing for: ▪ landform and topographical characteristics; ▪ existing surface flow regimes and their seasonal distribution; ▪ the amount and pattern of groundwater contributions (**Figures 1.3**); and ▪ instream habitat structure (e.g. pool riffle sequences, undercut banks, woody material).
10. Monitoring & Adaptive Management	
Overall Policy Direction	• Support updated and expanded monitoring programs, including ambient monitoring, requirements for pre-development baseline monitoring, cumulative effects monitoring and the monitoring of new technologies to assess their contributions to watershed improvements.
Policy Rationale	• Long term, watershed-wide and shorter term site-specific monitoring data are needed to establish baseline conditions, measure impacts from development, assess new technologies and practices and to inform any necessary remedial actions.
Policy Recommendations Monitor, evaluate and adjust –	• Maintain municipal support for ongoing ambient monitoring on a long term basis, as part of the Regional Watershed Monitoring Network, for baseflows, stream flows, groundwater levels, evaporation and precipitation in the Don watershed, as baseline data to inform adaptive management.

Rec. 7 – Caring for Water	• As part of the planning process to designate "Whitebelt" lands for urban development (e.g., Block 27 in Vaughan), require a minimum of 3 years of monitoring data prior to beginning construction and site alteration in order to establish baseline parameters for ground and surface water, natural heritage, fluvial geomorphology and aquatic systems. • Require monitoring of the effects of new and retrofitted urban development and stormwater management practices on receiving watercourses and the hydrologic water balance in order to apply adaptive management measures as necessary to adjust the balance of infiltration/evaporation/reuse stormwater management technologies needed to maintain water balance. • Require Environmental Management Plans for large scale and/or high uncertainty projects (including infrastructure projects). See also Section 7 (Monitoring) of this *Implementation Guide*.
Best Practices for Implementation	• Arrange for third-party verification of technology performance when using new or untested technologies. • Require developers to provide "as-built" certification to ensure stormwater facilities are constructed properly. • Require developers to undertake or contribute to compliance monitoring to ensure stormwater management facility performance targets are met. • Require the preparation of conceptual post-development monitoring plans as a condition of draft plan of subdivision approval to inform adaptive management.

Table 1.2 Policy Initiatives and Special Studies

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Sustainable Urban Design, Development, and Redevelopment ➤ *Growth Plan* ➤ *Retrofit*	As municipal Official Plans are updated across Don watershed municipalities, TRCA should work with municipalities to incorporate watershed plan strategies into these plans and to encourage strategic planning in advance of redevelopment, to enhance the sustainability of urban form and resource use - Rec. 1 – Caring for Community – Land and Resource Use Develop cooperative working arrangements among municipal and conservation authority staff for resolving potential conflicts and creating synergies among opportunities for stormwater management, terrestrial natural cover, greenspace and trails networks, and cultural heritage during infrastructure EAs, redevelopment, infilling, and retrofit, using the initial guidance on priorities as set out in the watershed plan - Action under Rec. 2 – Caring for Community – Land and Resource Use Encourage behavioural shifts and innovative urban design forms that minimize impervious area and aim to achieve pre-development rates of infiltration, evapotranspiration and	Municipal official plans and update studies Municipal growth management and sustainability strategies: ➢ York Region Planning for Tomorrow Growth Management, Sustainability Strategy: Towards a Sustainable Region ➢ Vaughan Tomorrow Growth Management ➢ Richmond Hill Strategic Plan: A Plan for People, A Plan for Change ➢ Markham Growth Management Strategy ➢ Toronto Strategic Plan, Sustainability Roundtable, Change is in the Air Climate Change Strategy Municipal wet weather flow and stormwater retrofit studies City of Toronto Wet Weather Flow Guidelines Toronto Green Standard Toronto Green Roof By-law Toronto Tower Renewal Program TRCA's Stormwater Management Criteria	**1-1* Municipalities** - Work with TRCA to investigate ways to incorporate the new policy directions into their planning documents (see Table 1.1 of this Implementation Guide for details on the policy directions) 1-2 **MEI** – Initiate discussions with municipalities regarding Growth Plan Sub-Area Assessment. **1-3* MEI**, MMAH, municipalities, TRCA, AMO, CO, BILD - Establish development standards for sustainable community design for application to new development proposals, urban expansions, redevelopment, and intensification. Consider incorporation of principles from frameworks such as LEED for Neighbourhood and Zerofootprint. **1-4* TRCA**, municipalities and other approval agencies - Develop strategies for facilitating innovative design projects and approvals. **1-5* Municipalities**, TRCA, BILD **–** Promote a sustainable redeveloping neighbourhood demonstration project and a sustainable greenfield neighbourhood demonstration.	✓ ✓ ✓ ✓ ✓	

Table 1.2 Policy Initiatives and Special Studies

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Sustainable Urban Design, Development, and Redevelopment *(continued)*	surface runoff, in new developments and redevelopments. Implement TRCA's and the City of Toronto's water management criteria and guidelines for redevelopment and new development which require stormwater volume and peak flow control (as updated) (City of Toronto, 2006; Aquafor Beech Limited, 2008). Adopt Sustainable Neighbourhood Development guidelines and encourage certification (e.g., LEED for Neighbourhood Developments) for all new and retrofit neighbourhoods, subdivisions, and sites. Develop protocols for an expedited approvals process for development applications incorporating green design standards. Action under Rec. 3 – Caring for Community – Land and Resource Use Terrestrial natural cover on historical lots of record that extend into ravines should be protected from loss during redevelopment or intensification by designating it open space in municipal Ops and conforming zoning. – Rec. 5 under Caring for Community – Land and Resource Use Ministry of Energy and Infrastructure and all relevant agencies should address the Don River Watershed Plan recommendations through Implementation Analysis and Sub-Area Assessment (s.5.3/p. 35 of Growth Plan for the Greater Golden Horseshoe) – Chapter 6, Watershed Plan	document	1-6 **TRCA** – Update planning and development guidelines and policies. 1-7* **Municipalities**, TRCA – Partner to develop a generic Terms of Reference or checklist for redevelopment MESPs, including identification of any implications for Bill 51 "complete application" requirements. 1-8 **Green Building Councils** – Complete development of an Ontario version of LEED for Neighbourhoods. 1-9 – **Municipalities**, TRCA - Explore how Section 37 Planning Act could be used as part of an incentive program to landowners for allowing intensification on their properties, while protecting terrestrial natural cover	✓ ✓ ✓ ✓	

Table 1.2 Policy Initiatives and Special Studies

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Oak Ridges Moraine	Recognize and act on the *Don River Watershed Plan's* recommendations as per section 24 of the *Oak Ridges Moraine Conservation Plan* which states: "The objectives and requirements of each watershed plan are to be incorporated into the municipality's official plan, and major development commenced after April 23, 2007 is prohibited unless it conforms with the watershed plan." - Chapter 6, Watershed Plan	Oak Ridges Moraine Conservation Plan and technical paper series	**1-10*** Each **ORM municipality** - Recognize the Don River Watershed Plan in its official plan, as required by the Oak Ridges Moraine Conservation Plan (ORMCP). See also **Figures 1.1** (ORMCP land use designation) and **1.2**, a compliance review checklist for major development on the ORM.	✓	
Provincial Initiatives	Use the Watershed Plan to support and provide more specific guidance to implement Provincial initiatives – Chapter 6, Watershed Plan	Oak Ridges Moraine Conservation Plan Greenbelt Plan Growth Plan for the Greater Golden Horseshoe Area Provincial Policy Statement	1-11 **Provincial ministries** - Use the watershed plan to inform future reviews of relevant legislation and plans such as those for the Oak Ridges Moraine, Greenbelt, Growth Management and the Provincial Policy Statement.	✓	✓
Source Water Protection	Address the Don River Watershed Plan's recommendations in the fulfillment of source water protection planning requirements of the *Clean Water Act* – Rec. 121	Drinking Water Source Protection – CTC Region	1-12 **TRCA** - Address the watershed plan's recommendations during source protection planning	✓	
Flood Control	Master Plans for flood remediation should be created for flood vulnerable areas and Special Policy Areas in advance of contemplating new land uses for areas designated for redevelopment and intensification - Action under Rec. 4 – Caring for Community – Land and Resource Use Work with the Province, municipalities and developers to reconcile the conflict inherent in intensifying development in flood prone areas, through flood risk assessment plans, flood remediation and flood proofing measures, as well as seeking opportunities	TRCA Valley and Stream Corridor Management Program and Floodplain Management Guidelines	1-13 Municipalities, TRCA – Undertake flood risk reduction plans to mitigate Flood Vulnerable Areas (**Figure1.9**). 1-14 TRCA – Update planning and development guidelines and policies, including floodplain development guidelines. 1-15 Municipalities – Update official plans and zoning by-laws to reflect up to date floodplain information, and intensification and growth planning. 1-16 Municipalities, TRCA, MEI, MNR, MMAH - Coordinate comprehensive flood risk assessment plans and fund flood remediation opportunities and flood emergency planning	✓ ✓ ✓ ✓	✓

Table 1.2 Policy Initiatives and Special Studies

1-1* = Top priority project

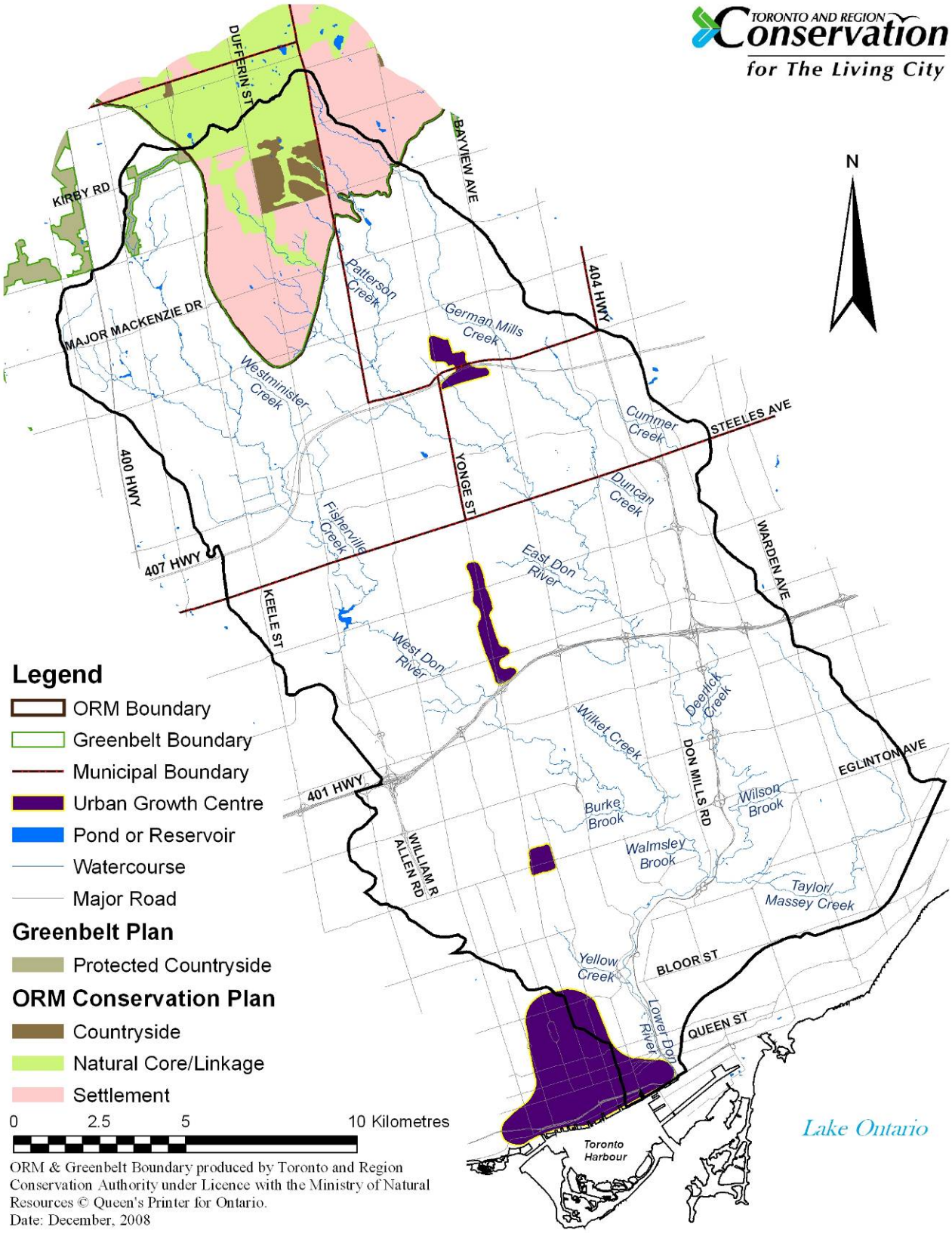
Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
	for intensification outside the flood plain. Update zoning by-laws and official plans to restrict development in flood plains. Develop and/or update flood emergency response plans. Incorporate opportunities to remediate flood vulnerable roads or sites when designing infrastructure improvements to service, such as watercourse crossings. - Actions under Rec. 2 Caring for Water		when land use change, redevelopment or intensification is proposed for flood vulnerable areas and Special Policy Areas.		
Pollution Prevention	Municipalities should ensure that sewer use by-laws are up to date include application to storm sewers and regional roads, requirements to prepare pollution prevention plans, and provisions for the establishment of an inspection program. The design of stormwater ponds should aim to minimize chemostratification of chloride by eliminating or reducing dead storage zones (e.g., increasing length-to-width ratio, including bottom draw outlet). Encourage adoption of technologies and methods for optimizing salt applications (dry, pre-wet, direct liquid), and use of alternatives to salt for winter maintenance, where appropriate. Encourage the Ontario Ministry of the Environment to update its Guidelines for Snow Disposal and Deicing Operations in Ontario (1994). - Actions under Rec. 6 Caring for Water	Municipal sewer use by-laws Municipal salt management plans MOE Guidelines for Snow Disposal and Deicing Operations in Ontario	1-17 **MOE**, MNR - Develop stormwater management guidelines for the protection of aquatic systems from changes in water temperature and chloride concentrations. 1-18 **Municipalities** – Update sewer use by-laws to include application to storm sewers and regional roads, requirements for pollution prevention plans and provisions for establishing inspection programs.	✓ ✓	
			1-19 MOE – Update the Guidelines for Snow Disposal and Deicing Operations in Ontario to provide current guidance on management of chlorides and impacts on terrestrial and aquatic habitat. 1-20 Municipalities, TRCA - Review and implement snow disposal and road salt management plans, prepared in response to the Federal designation of road salt as a toxic substance under the Environmental Protection Act, with special consideration for roads on vulnerable aquifer recharge areas on the Oak Ridges Moraine.	✓ ✓	

Table 1.2 Policy Initiatives and Special Studies

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Public Access	Develop a plan to achieve a balance between public access and protection of sensitive ecological and cultural heritage resources including: ➢ Policies and guidelines for the phasing out or relocation of public uses that are incompatible with the objectives of this Watershed Plan. ➢ Decommissioning of unauthorized trails. ➢ Development of policies and enforcement of regulations for unauthorized or incompatible uses and harmonization of appropriate by-laws among municipalities. Standards of practice for public use operators, such as environmental management systems for public agencies and Audubon Program or equivalent for golf courses.	TRCA's Trails Planning and Design Guidelines TRCA's Conservation Land Care Program (pilot in Peel Region)	1-21 **TRCA**, municipalities - Prepare a plan for the watershed, including: ➢ baseline study of trail use; ➢ develop method for assessing recreational carrying capacity of the natural heritage system; ➢ integrate with municipal plans/policies for providing access to active recreation opportunities in public parks ➢ establish criteria for triggering development or review of management plans for public greenspace and trails (e.g. criteria for unacceptable impacts on natural and cultural heritage resources or visitor experiences). 1-22 **TRCA –** Update TRCA's Trail Planning and Design Guidelines and share with municipal partners	 ✓	✓
Economics			**1-23*** **TRCA**, municipalities - Undertake a scoped economic assessment of the implications of implementing the watershed plan's integral recommendations, including: - valuation of ecosystem services; - preparation of a methodology for applying the net gain approach; and - development of recommendations for applying fairness and equity in implementation.	✓	

Figure 1-1: Special Land Use Policy Areas



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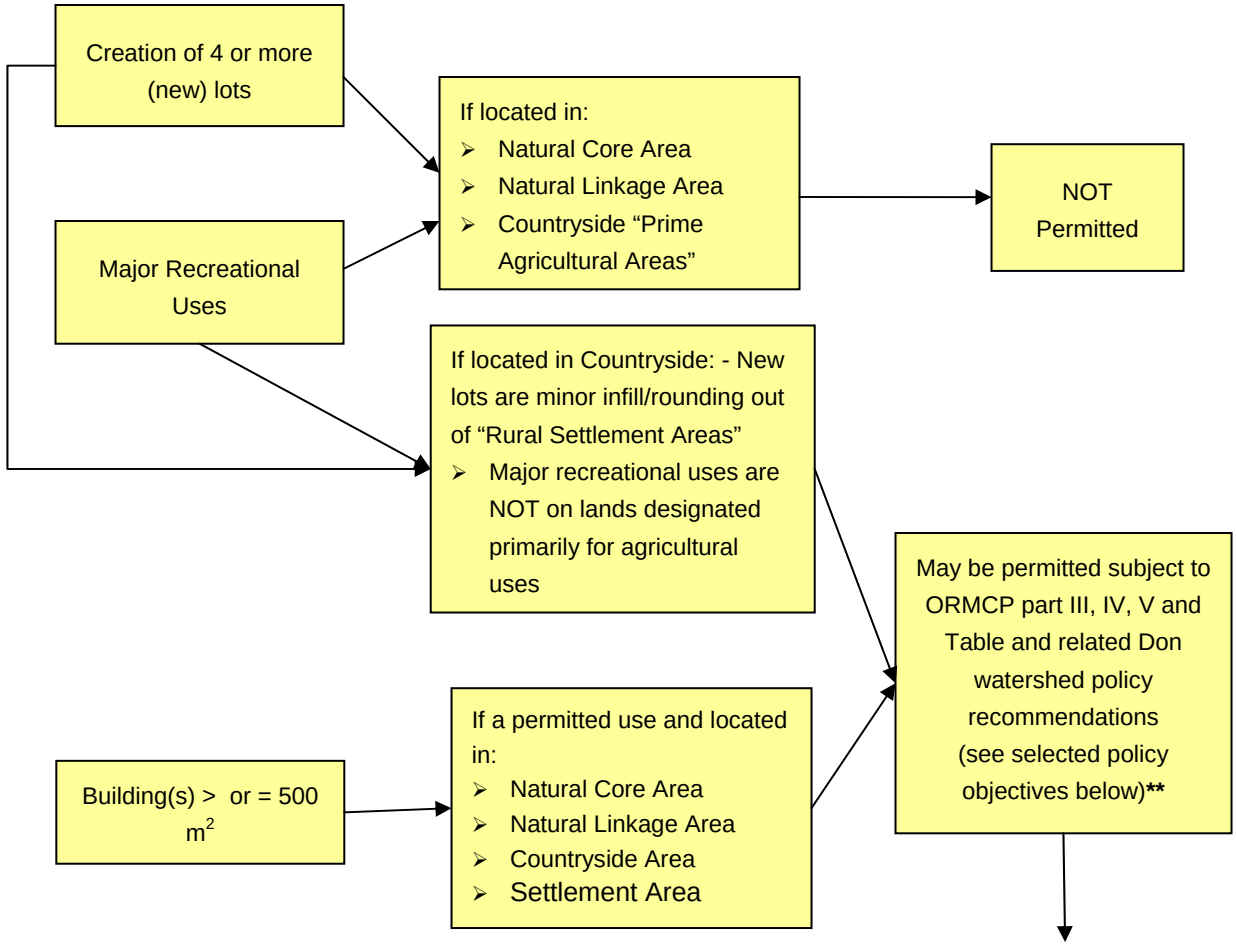
Date: December, 2008

Figure 1-2 Compliance Checklist for "Major Development" on ORM in Don Watershed

Major Development definition (from ORMCP):

1. the creation of 4 or more (new) lots
2. the establishment of a major recreational use as described in section 38
3. the construction of a building or buildings with a ground floor area of 500m^2 or more.



- Does the proposal respect and implement the Target Terrestrial Natural Heritage System? (Fig. 1.5; Policy Table 1.1, #3 and 5)
- Does the proposal address potentially significant recharge areas and manage for the pre-development water balance on the site as much as possible? (Figs. 1.3; Policy Table 1.1, # 1, 2 and 3)
- If applicable, does the proposal address Flood Vulnerable sites? (Fig. 1.9; Policy Table 1.1, # 2 and 3)
- Does the proposal maintain impervious surfaces, outside of Settlement Areas, to less than 10% of the sub-watershed?
- Does the proposal, outside of Settlement Areas, contain a Landform Conservation Plan?
- Does the proposal for a major recreational use contain a "Recreation plan" and "Vegetation Management plan" and does it demonstrate compatibility with the natural character of the surrounding area and adjacent land uses? (Figs. 1.5 and 1.7; Policy Table 1.1 #6)
- Does the proposal contain a "Sewage and Water System plan"?
- Does the proposal contain a stormwater management plan? (Policy Table 1.1, # 1, 2,3, and 7)
- **If the answer to any question above is "NO", then the proposal is NOT in conformity with the Oak Ridges Moraine Conservation Plan (ORMCP) or the Don Watershed Plan and should be deemed "incomplete" until the area(s) of non-conformity is/are addressed.**

Notes: Figures referenced above are taken from the Don Watershed Plan and, together with associated policy recommendations (Table 1.1-Top 10 New Policy Recommendations), will provide guidance in achieving conformity with the objectives and requirements of the watershed plan.

**Only selected policies from the ORMCP specifically related to major development and watershed plan requirements have been included in this checklist. The applicant is responsible for ensuring all relevant policies of the ORMCP have been conformed to.

Figure 1-3 Potentially Significant Groundwater Recharge Areas

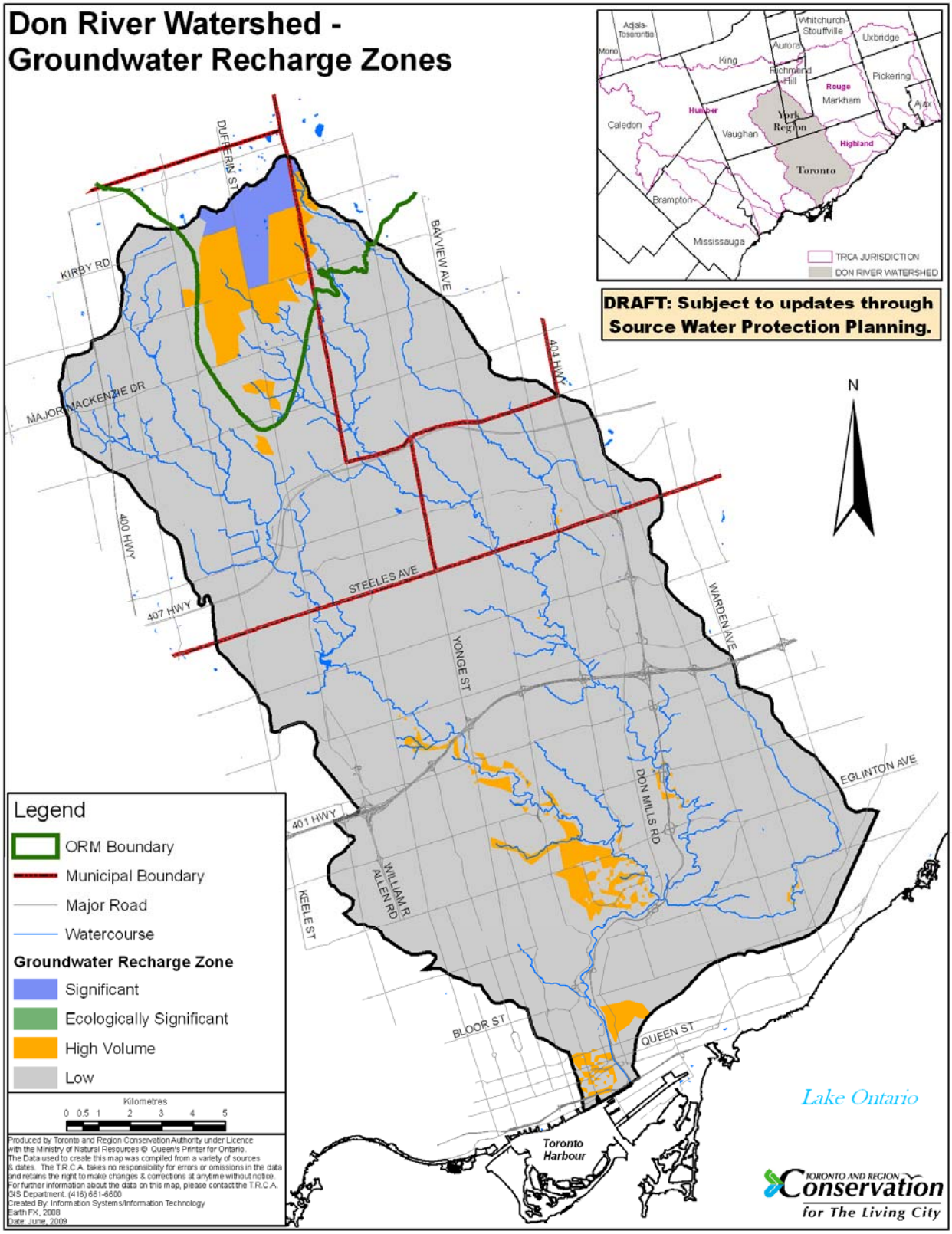


Figure 1-4 Target Aquatic Community Indicator Species

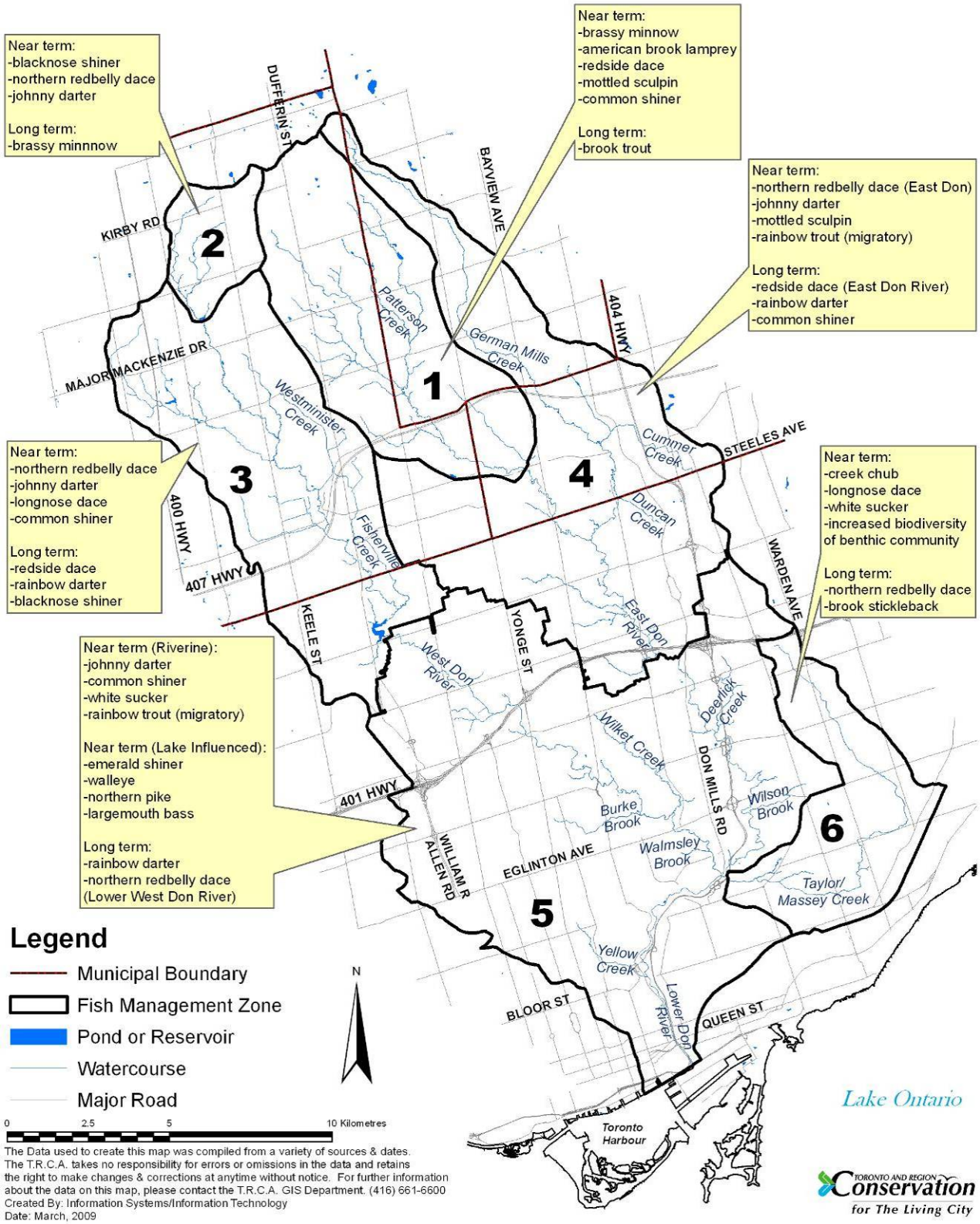


Figure 1-5 Target Terrestrial Natural Heritage System

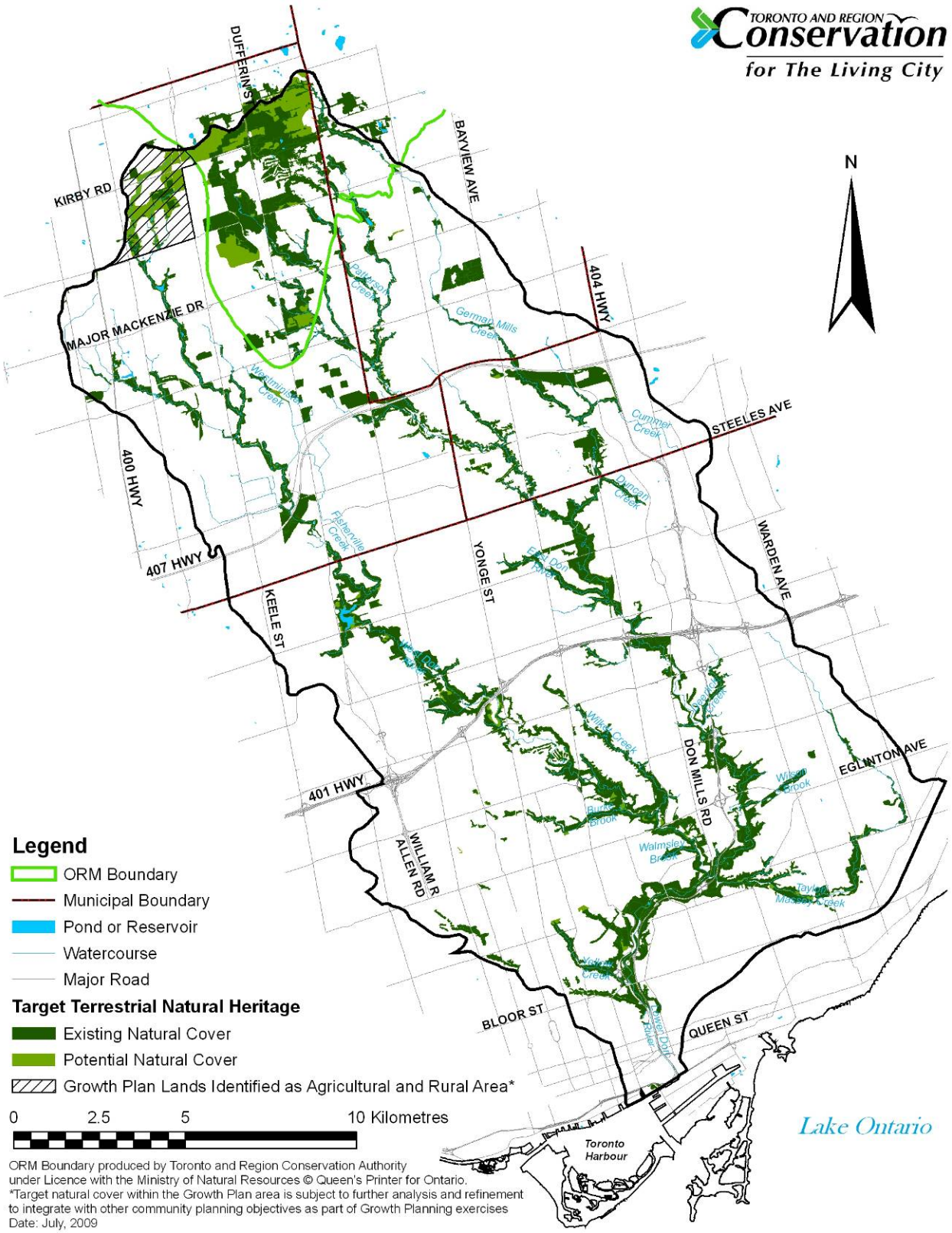
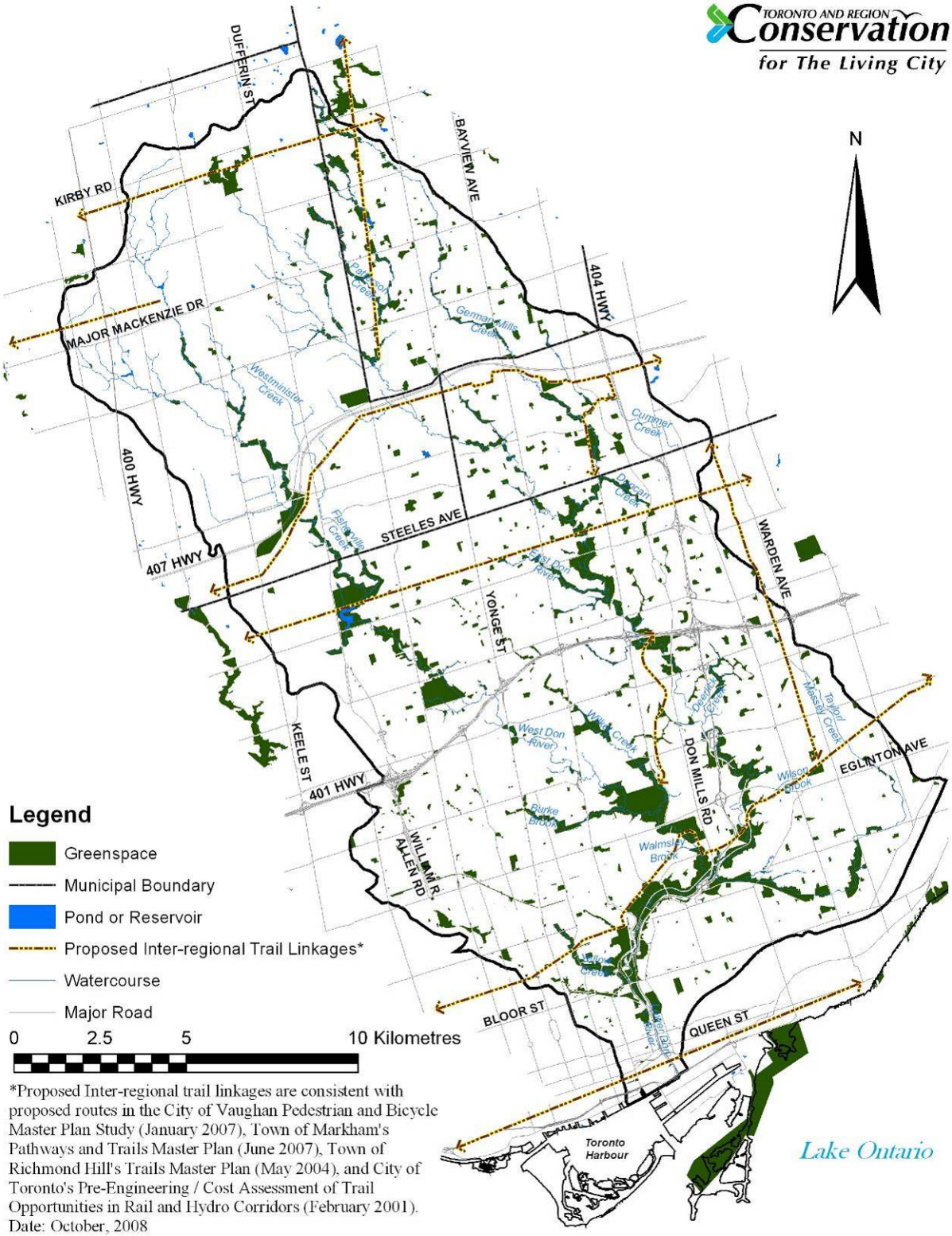


Figure 1-6 Inter-regional Trails Plan



*Proposed Inter-regional trail linkages are consistent with proposed routes in the City of Vaughan Pedestrian and Bicycle Master Plan Study (January 2007), Town of Markham's Pathways and Trails Master Plan (June 2007), Town of Richmond Hill's Trails Master Plan (May 2004), and City of Toronto's Pre-Engineering / Cost Assessment of Trail Opportunities in Rail and Hydro Corridors (February 2001).
Date: October, 2008

Figure 1-7 Nature-based Experience Theme Areas

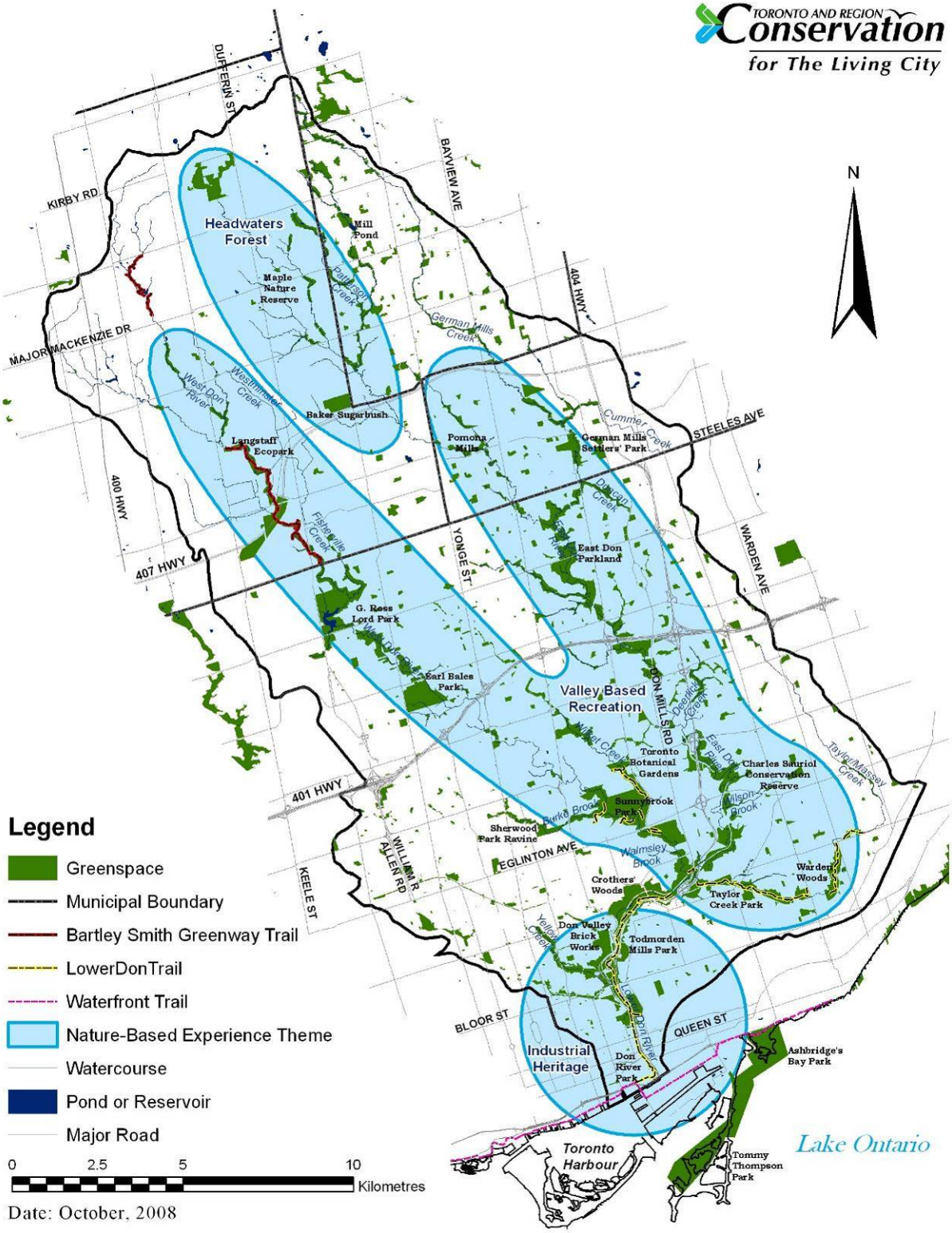


Figure 1-8 Cultural Heritage Features

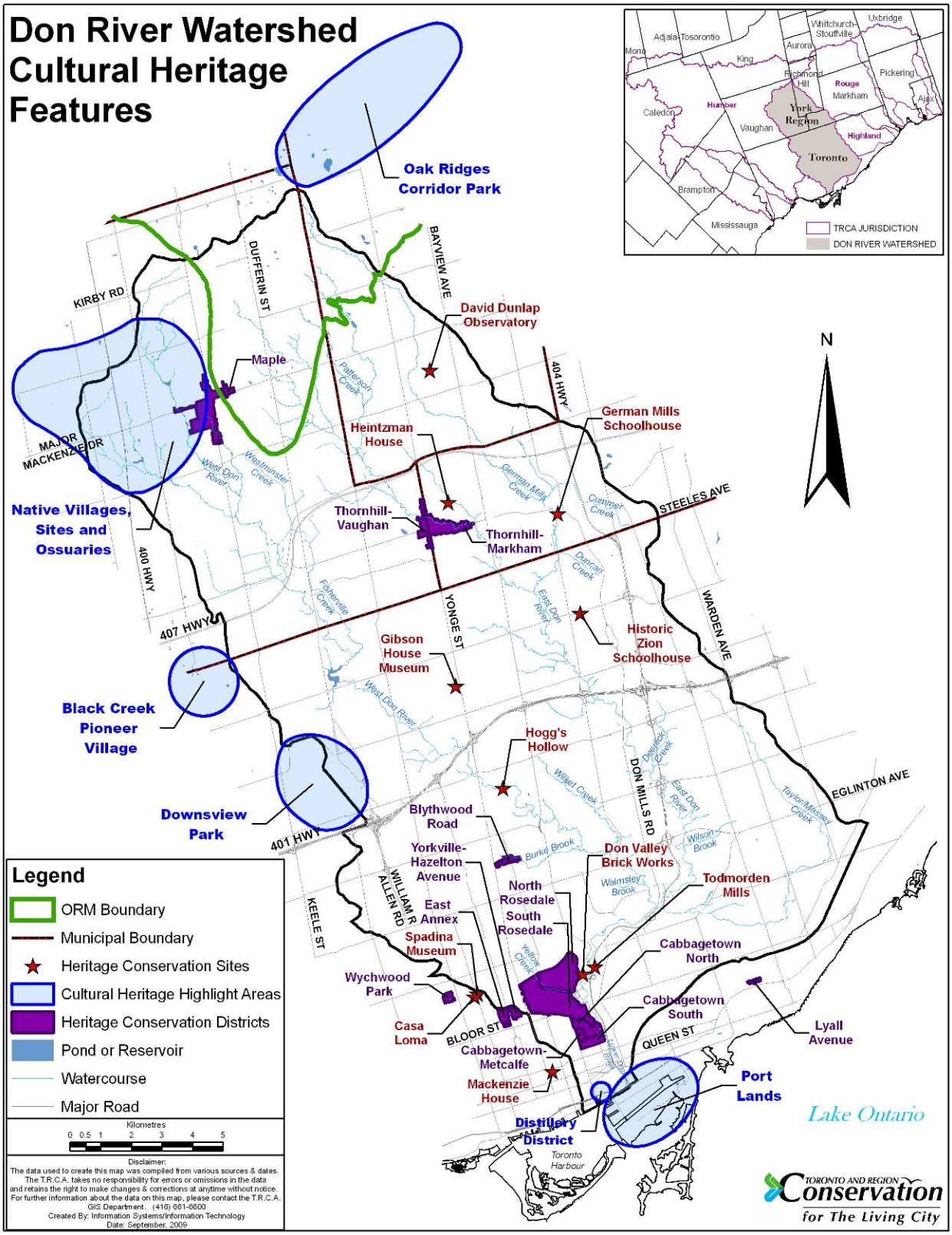
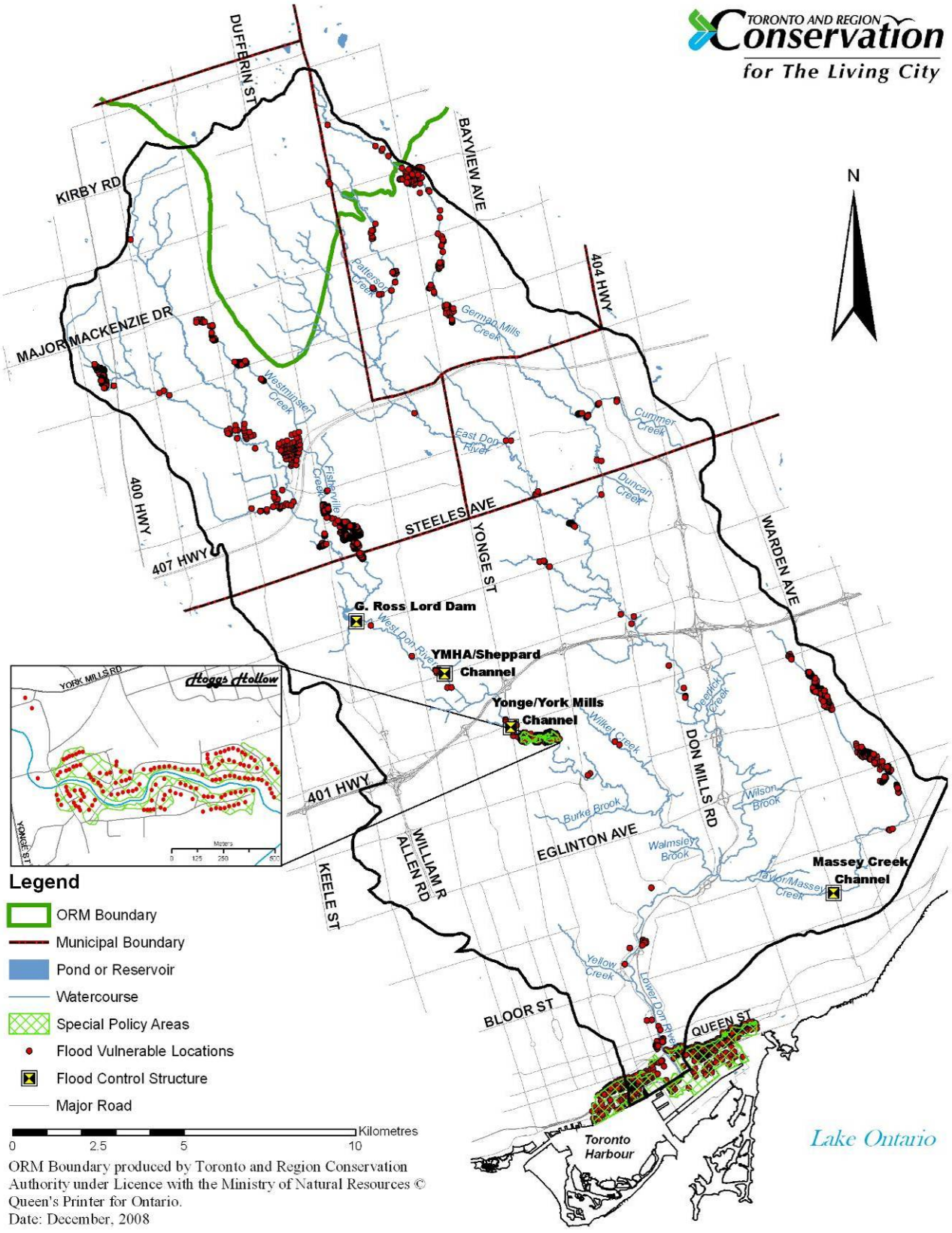


Figure 1-9 Flood Vulnerable Locations and Flood Infrastructure



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2. Regeneration

Definition of Regeneration Projects

For the purposes of this *Implementation Guide*, regeneration comprises "in the ground" works, on either publicly owned or large tracts of privately owned land, that address the following objectives:

- Water quality and quantity management (e.g., SWM retrofit projects);
- Aquatic and terrestrial habitat enhancement (e.g., tree planting, wetland creation, fish barrier mitigation);
- Flood and erosion risk remediation (e.g., culvert enlargements, infrastructure protection);
- Trail development and infrastructure support for nature-based recreation; and
- Infrastructure support for achieving cultural heritage objectives.

Regeneration Themes for the Don River Watershed

Figure 2.3 summarizes three strategically important themes for regeneration across the Don River watershed:

- Improve management of wet weather flows across the watershed by implementing municipal stormwater management retrofit plans and adopting lot level infiltration and evapotranspiration stormwater controls (e.g., permeable pavement, infiltration trenches, downspout disconnections, green roofs) across the watershed, where opportunities arise and soil conditions are appropriate.
- Build the integrity of the natural system and greenspaces of the watershed by securing a minimum of 13 % of the watershed as natural cover, planting trees and naturalizing manicured spaces in the urban area, mitigating the impacts of urban land uses and activities on greenspaces and natural areas, and protecting the existing diversity of native terrestrial and aquatic species.
- Encourage individuals, grassroots groups, businesses and organizations to take responsibility for the Don by using stewardship, outreach education and social marketing to enhance voluntary uptake of sustainable practices (e.g., rain gardens, rain barrels, backyard naturalization, household water and energy conservation) and celebrating the Don's success stories.

Regeneration Areas and Themes for Each Subwatershed

Figures 2.4 to 2.10 illustrate the regeneration plan for each subwatershed. They were developed by 1) identifying key subwatershed regeneration issues and challenges, based on the watershed planning study directions and multi-stakeholder input; 2) creating a long list of candidate regeneration actions; and 3) evaluating and ranking candidate regeneration actions according to three criteria:

- *Urgency*: .....consideration of current watershed and site conditions and thresholds; potential threats to human health, safety, and property; and the level of vulnerability to anticipated future stresses.
- *Scale*:.....consideration of the geographic extent (e.g., area or length of stream or trail) that would benefit from the action and the magnitude of anticipated improvement.
- *Multiplicity of Benefits*:....consideration of the number of key subwatershed regeneration issues that the action would address and the number of watershed system components (e.g., groundwater, surface water, terrestrial and aquatic systems) that would benefit.

This method was based on a modification of a principles-based methodology for prioritizing actions developed for a highly urbanized watershed (TRCA, 2007[3] and Water's Edge Ltd. and Hugh Whiteley, 2007[4]). The regeneration plan identified in these maps forms the basis for developing an implementation work plan and budget for regeneration priorities arising from the *Don River Watershed Plan*.

The key influences and drivers on the identification of regeneration priorities in each of the subwatersheds are:

- Upper West Don River:
  - Whitebelt development potential north of Teston Road – last opportunity for state of the art greenfield development
  - High concentration of existing industrial and commercial land uses presents the opportunity to explore regeneration within those land uses
  - Stormwater management lacking south of Rutherford Road
  - Flood vulnerable areas in Fisherville Creek, Westminster Creek and industrial lands north of Highway 7 and east of Keele Street
  - Contains half of the watershed's higher quality terrestrial habitat and some of the best opportunities to add natural cover
  - Whitebelt area (north of Teston Road) contains aquatic habitat supporting some of the few remaining aquatic species that are habitat specialists
- Upper East Don River:
  - Subwatershed has urbanized rapidly over the last few years
  - About one-third of the watershed is on the Oak Ridges Moraine where soils are more permeable
  - Regionally significant groundwater recharge
  - Remnant population of redside dace (listed as endangered under provincial legislation) in Patterson Creek and the tributaries on the ORM north of Rutherford Road
  - Some of the highest levels of groundwater discharge in the watershed
  - Stormwater management lacking east of Bathurst Street
  - Provincially designated Richmond Hill/Langstaff Urban Growth Centre
  - Flood vulnerable areas in Thornhill (Vaughan and Markham)

[3] *TRCA. 2007. A Principles-Based Methodology for Identifying Priority Watershed Regeneration Actions.*

[4] *Water's Edge Ltd. And Hugh Whiteley. 2007. A Principles-Based Methodology to Build a Watershed regeneration Priorities Plan for a Largely-Urbanized Watershed. Prepared for TRCA.*

  - Contains half of the watershed's higher quality terrestrial habitat and some of the best opportunities to add natural cover
- German Mills Creek:
  - Some of the highest levels of groundwater discharge in the watershed
  - Permeable soils on the Oak Ridges Moraine
  - Stormwater control is patchy
  - Flood vulnerable areas south of Elgin Mills Road and along Cummer Creek
  - Opportunity for natural heritage enhancement and cultural heritage preservation at the David Dunlap Observatory
  - Riparian cover lacking north of the 407
- Lower West Don River:
  - High level of urbanization
  - Provincially designated North York Urban Growth Centre
  - Older development with little stormwater control and combined storm and sanitary sewers south of Eglinton Avenue
  - Flood vulnerable areas in Hogg's Hollow
  - Mature treed ravines with high recreational use
- Lower East Don River:
  - High level of urbanization
  - Older development with virtually no stormwater control and combined storm and sanitary sewers south of Eglinton Avenue
  - More permeable soils on eastern side of subwatershed
  - Mature valleys with high recreational use
- Taylor/Massey Creek:
  - Highest level of urbanization in the watershed
  - Older development with virtually no stormwater control and combined storm and sanitary sewers south of Eglinton Avenue
  - Flood vulnerable areas north of Lawrence Avenue
  - More permeable soils
  - Poor water quality (*E. coli*, chloride, nutrients, metals)
  - Extensive concrete channels with riparian cover lacking
  - Extremely limited aquatic habitat and fish communities
- Lower Don River:
  - High level of urbanization
  - Two provincially designated Urban Growth Centres – Yonge/Eglinton and Downtown Toronto
  - Older development with virtually no stormwater control and combined storm and sanitary sewers throughout
  - Poor water quality (*E. coli*, nutrients)
  - Higher permeability soils on Iroquois Sand Plain
  - Major regeneration projects at the Don Mouth

Figures 2.3 to 2.10 are intended for use by a range of stakeholders and for a variety of purposes, including:

- Practitioners and implementers – municipalities, NGOs, local interest groups, TRCA, other agencies, and individuals. The maps serve as a preliminary guide to regeneration opportunities across the watershed and at the local scale. The subwatershed-scale maps help to identify ways to integrate and co-ordinate local undertakings to ensure that regeneration activities are complementary, rather than conflicting. Working from a common set of priorities will enhance the likelihood that multiple benefits will be achieved. In practice, funding may be pursued at the reach scale by partnerships of stakeholders.
- Policy makers and planners: The maps provide guidance on approaches to achieve net gain when required for planning applications or major infrastructure planning (e.g., Environmental Assessments).

More detail on the regeneration actions identified on the maps can be found in **Table 2.1**, as well as separate watershed planning documents, including:

- The *Don River Watershed Reports on Current Conditions* (TRCA, 2009a-k[5]) provide more information about current watershed functions and conditions.
- The *Don River Watershed Sustainable Stormwater Management Study* (XCG Consultants, 2009[6]) provides an assessment of the predicted watershed response to future management approaches and therefore provides guidance as to the relative sensitivity of different regions within the watershed to change and the relative effectiveness of management approaches.
- The *Don Watershed Terrestrial Regeneration Priorities* (TRCA, 2007d[7]) report provides more information on the methodology used for prioritizing areas for regeneration.

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[5] *Toronto and Region Conservation Authority (TRCA). 2009a. Geology and Groundwater Resources—Report on Current Conditions. Don River Watershed Plan.*

Toronto and Region Conservation Authority (TRCA). 2009b. Surface Water Hydrology/Hydraulics and Stormwater Management—Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009c. Baseflow and Water Use Assessment—Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009d. Surface Water Quality —Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009e. Fluvial Geomorphology —Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009f. Aquatic System—Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009g. Terrestrial Natural Heritage —Report on Current Conditions and Refinement of a Target System. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009h. Land and Resource Use —Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009i. Nature-Based Experiences—Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009j. Cultural Heritage—Report on Current Conditions. Don River Watershed Plan.

Toronto and Region Conservation Authority (TRCA). 2009k. Air Quality—Memo on Current Conditions. Don River Watershed Plan.

[6] *XCG Consultants Limited. 2009. Upper Don River Watershed Sustainable Stormwater Management Study.*

[7] *Toronto and Region Conservation Authority (TRCA). 2007d. Don Watershed Terrestrial Regeneration Priorities.*

- The *Don River Fisheries Management Plan* (TRCA, in progress) contains a series of much more detailed maps and recommendations specific to fisheries management and regeneration of the aquatic habitat.
- The *Action Plan for Sustainable Practices – Implementation Strategies for the Residential and Business Sectors in the Greater Toronto Area* (Freeman Associates, 2006[8]) provides guidance on social marketing considerations for implementing regeneration actions in partnership with business and residential sectors.

[8] *Freeman Associates. 2006. Action Plan for Sustainable Practices—Implementation Strategies for the Residential and Busine4ss Sectors in the Greater Toronto Area.*

Figure 2-1 Priority Basins for At-Source Stormwater Controls in the Upper Don Watershed

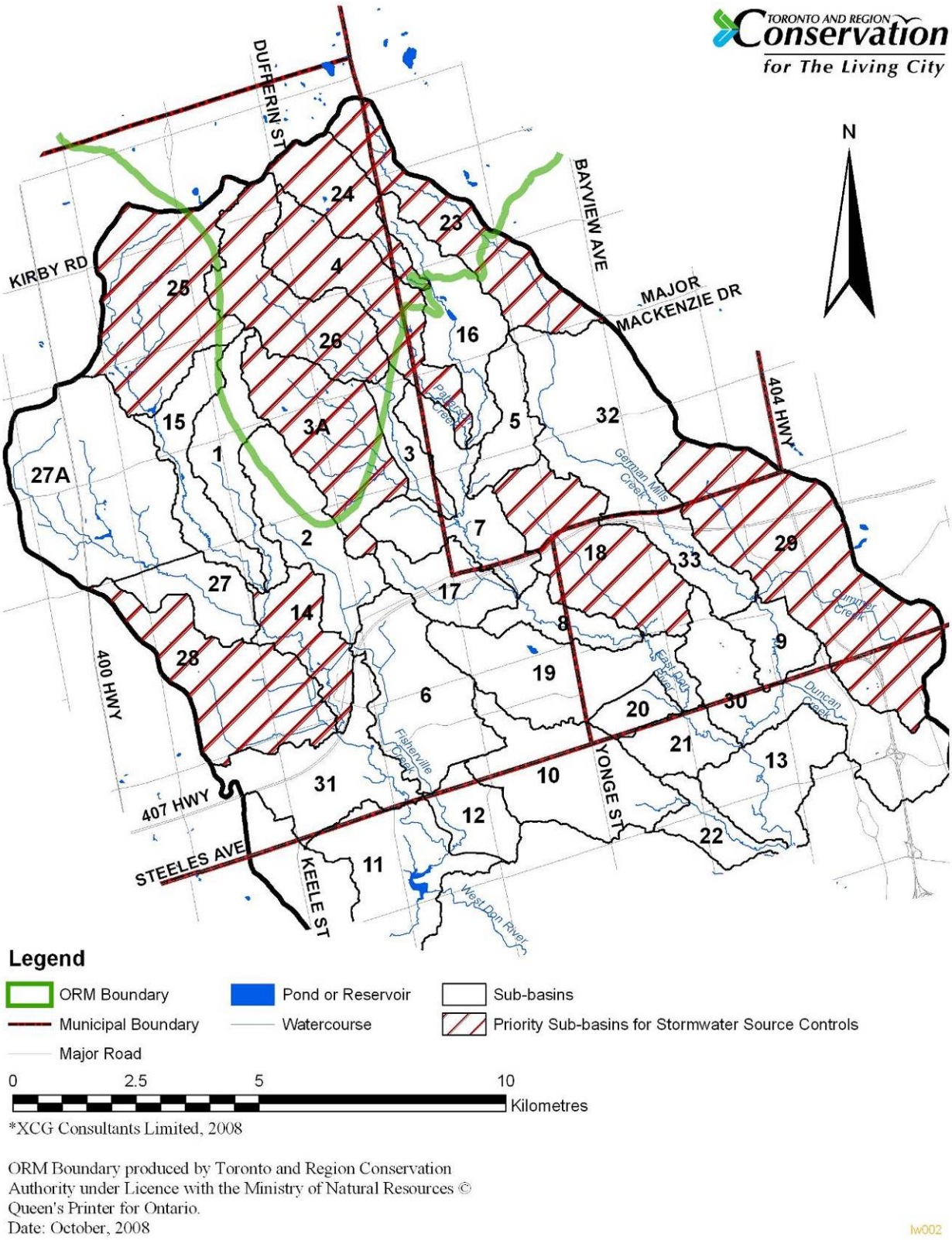
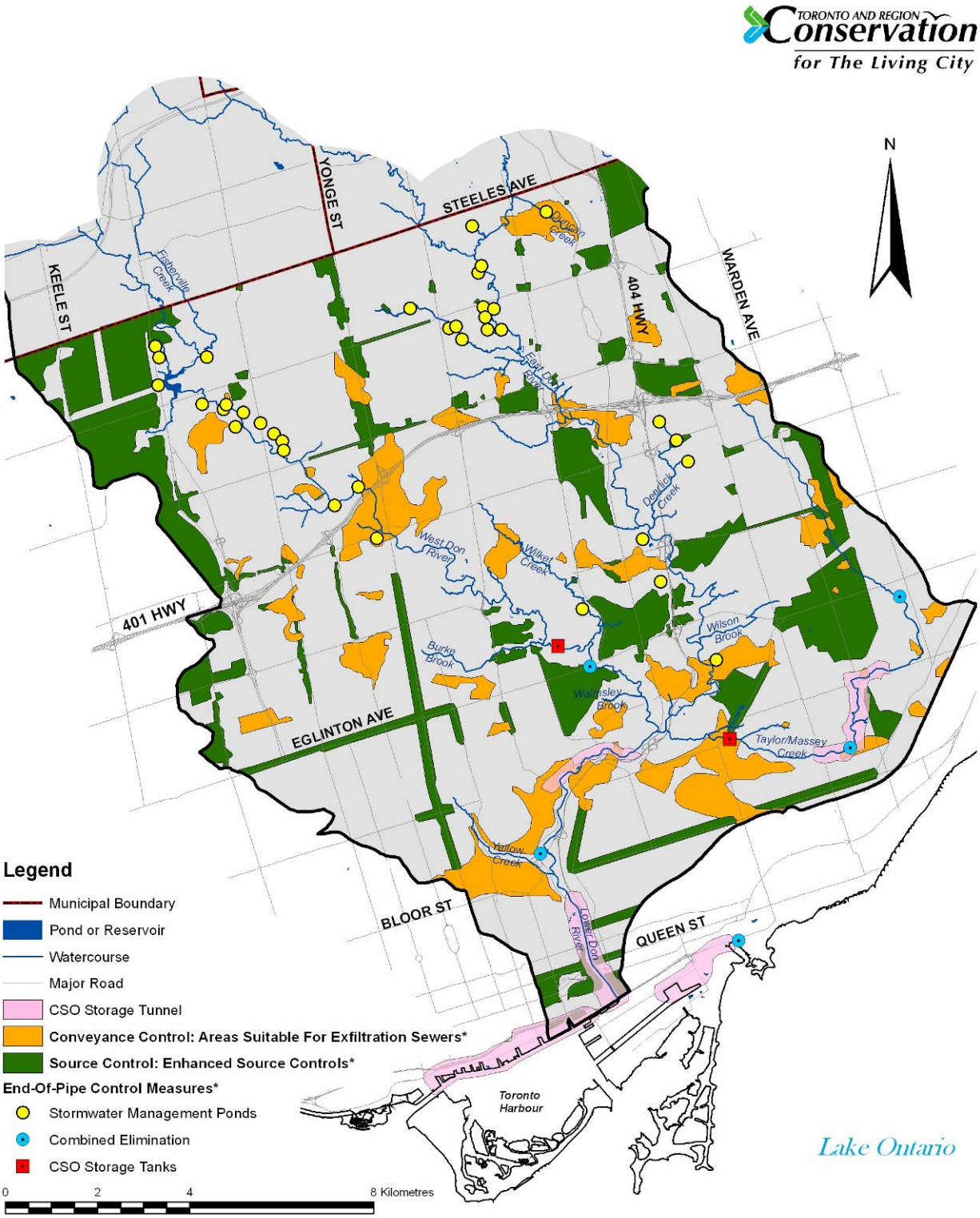


Figure 2-2: Priority Basins for At-Source Stormwater Controls in the Lower Don Watershed



*As per the City of Toronto's 25 Year Implementation Plan for the Wet Weather Flow Management Master Plan (City of Toronto, 2003)
Date: December, 2008

Figure 2-3: Strategic Regeneration Themes for the Don River Watershed

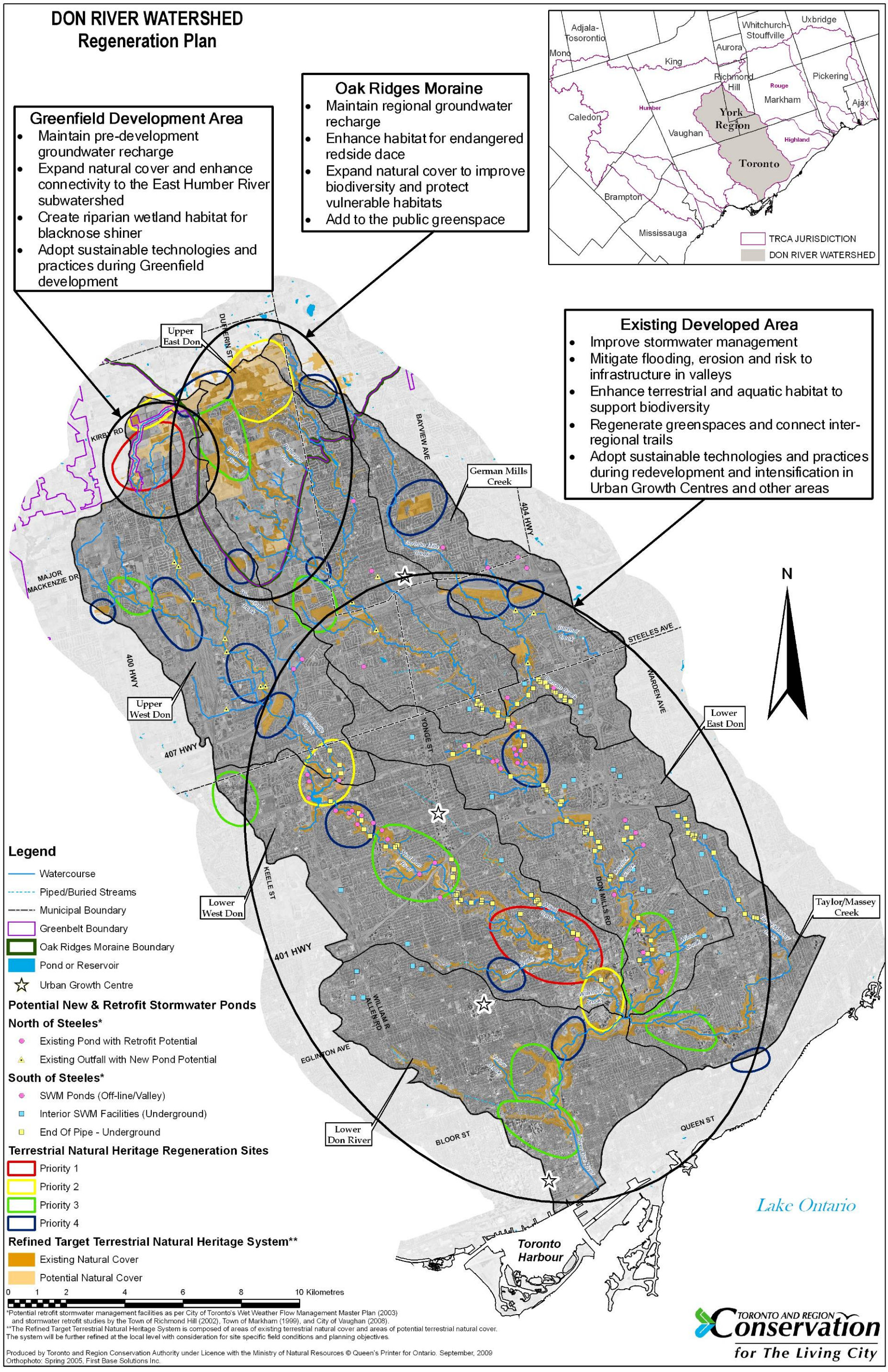


Figure 2-4: Upper West Don River Subwatershed Regeneration Plan

UPPER WEST DON RIVER SUBWATERSHED
Regeneration Plan

Water

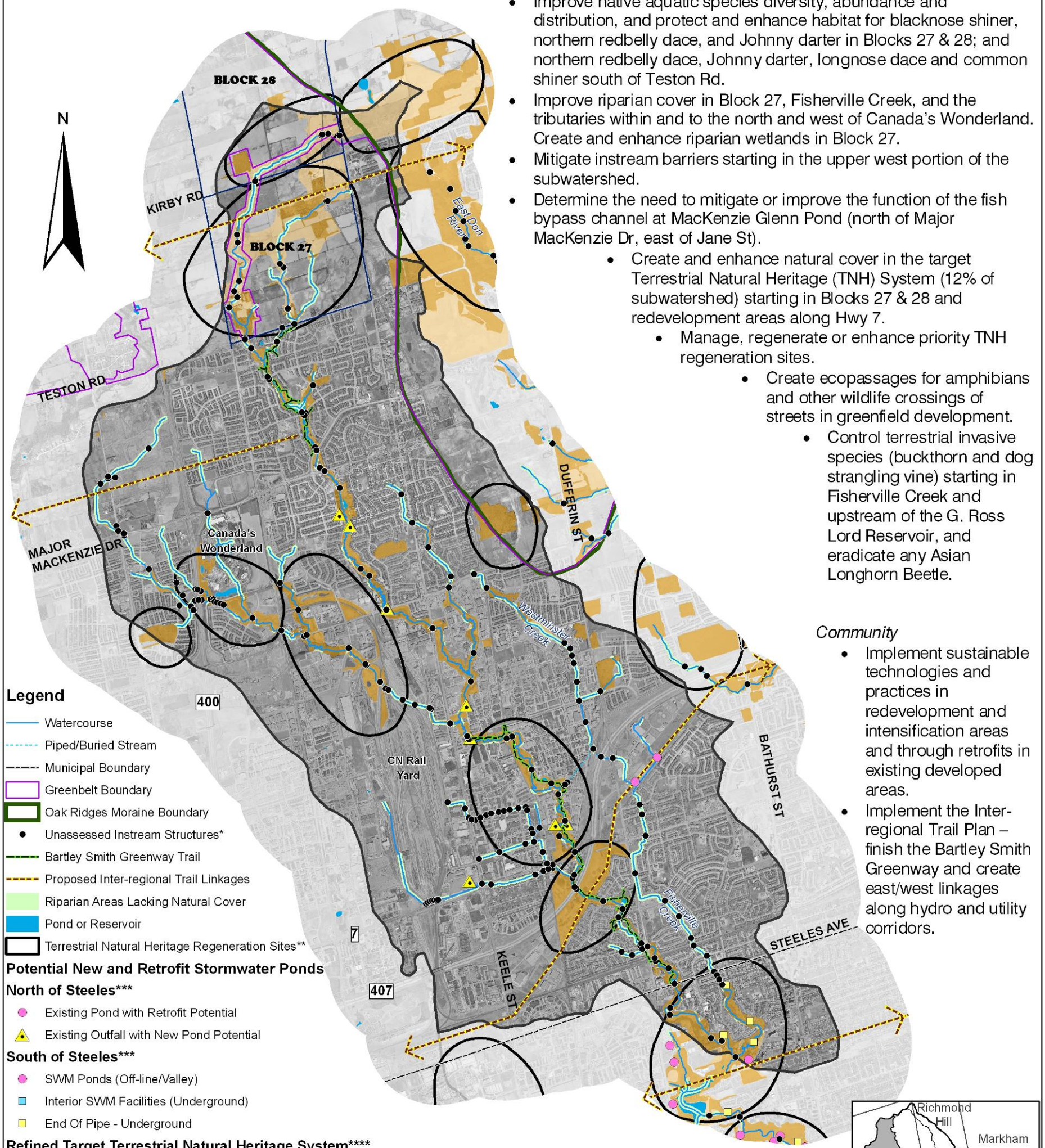
- Improve water balance and stormwater management through outfall and pond retrofits identified by municipalities and lot level source controls (infiltration, evapotranspiration, reuse) in priority sub-basins: tributaries of the Upper West Don River north of Major MacKenzie Dr (Block 27) and in the industrial lands west of Dufferin St.
- Maintain pre- to post- development groundwater recharge in Block 27.
- Remediate flood risk starting with the lower reaches of Fisherville and Westminster creeks.
- Remediate flood and erosion risk in the tributaries south-east of the CN Rail Yard.

Nature

- Improve native aquatic species diversity, abundance and distribution, and protect and enhance habitat for blacknose shiner, northern redbelly dace, and Johnny darter in Blocks 27 & 28; and northern redbelly dace, Johnny darter, longnose dace and common shiner south of Teston Rd.
- Improve riparian cover in Block 27, Fisherville Creek, and the tributaries within and to the north and west of Canada's Wonderland. Create and enhance riparian wetlands in Block 27.
- Mitigate instream barriers starting in the upper west portion of the subwatershed.
- Determine the need to mitigate or improve the function of the fish bypass channel at MacKenzie Glenn Pond (north of Major MacKenzie Dr, east of Jane St).
    - Create and enhance natural cover in the target Terrestrial Natural Heritage (TNH) System (12% of subwatershed) starting in Blocks 27 & 28 and redevelopment areas along Hwy 7.
        - Manage, regenerate or enhance priority TNH regeneration sites.
            - Create ecopassages for amphibians and other wildlife crossings of streets in greenfield development.
                - Control terrestrial invasive species (buckthorn and dog strangling vine) starting in Fisherville Creek and upstream of the G. Ross Lord Reservoir, and eradicate any Asian Longhorn Beetle.

Community

- Implement sustainable technologies and practices in redevelopment and intensification areas and through retrofits in existing developed areas.
- Implement the Inter-regional Trail Plan – finish the Bartley Smith Greenway and create east/west linkages along hydro and utility corridors.



*See the Don River Watershed Based Fisheries Management Plan for more detailed information on regeneration priorities for the aquatic system.
**See Figure 28 for watershed-scale priority ranking
***Potential retrofit stormwater management facilities as per City of Toronto's Wet Weather Flow Management Master Plan (2003) and stormwater retrofit studies by the Town of Richmond Hill (2002), Town of Markham (1999), and City of Vaughan (2008).
****The Refined Target Terrestrial Natural Heritage System is composed of areas of existing terrestrial natural cover and areas of potential terrestrial natural cover. The system will be further refined at the local level with consideration for site specific field conditions and planning objectives.

Toronto and Region Conservation for The Living City

Figure 2-5: Upper East Don River Subwatershed Regeneration Plan

UPPER EAST DON RIVER SUBWATERSHED
Regeneration Plan

Water

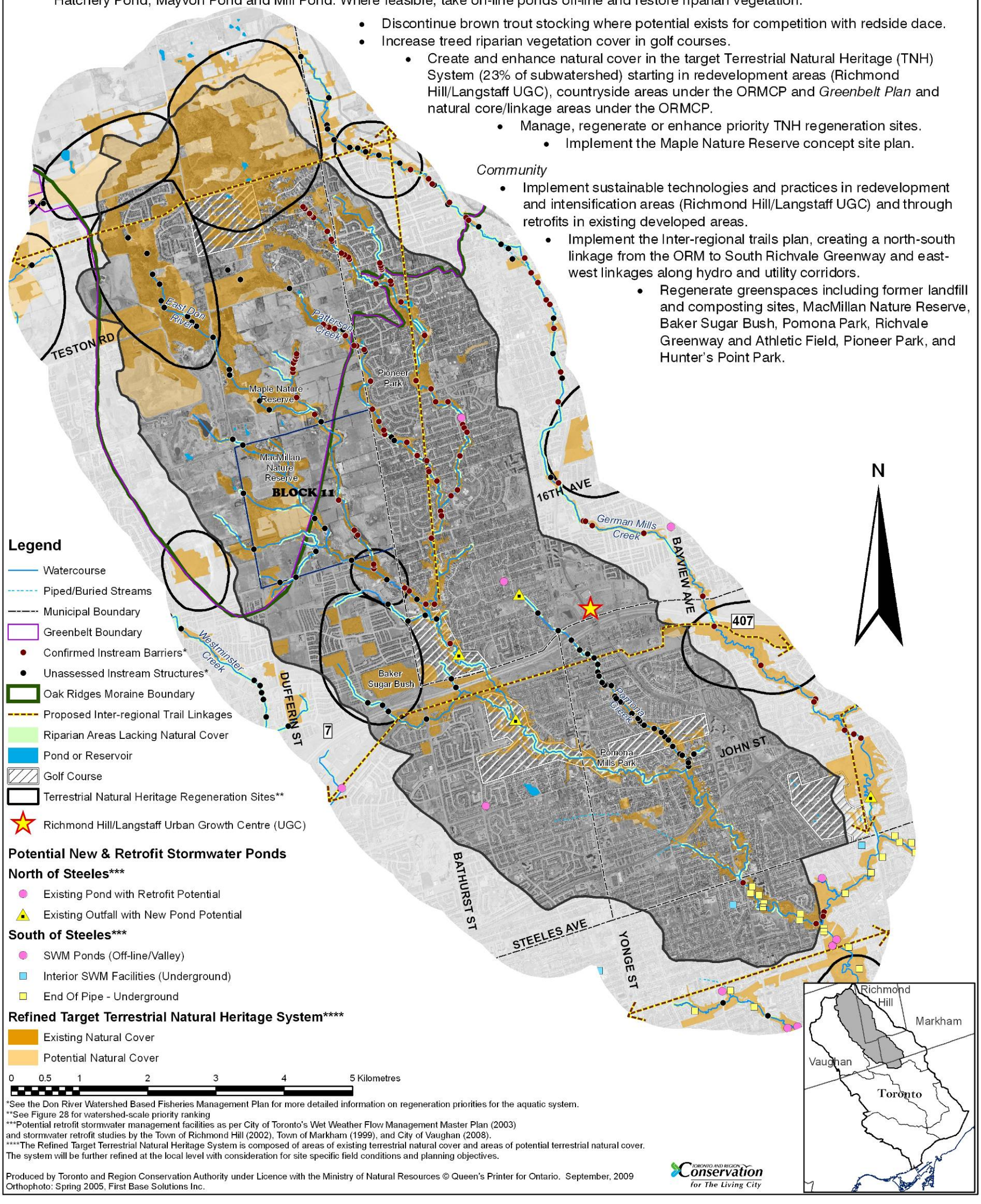
- Improve water balance and stormwater management through outfall and pond retrofits identified by municipalities (start with Pioneer Park) and lot level source controls (infiltration, evapotranspiration, reuse) in priority sub-basins: Patterson Creek and the western tributaries of the Upper East Don River, and Pomona Creek.
- Remediate flood risk starting with Patterson Creek and adjacent eastern tributary, and the Upper East Don River south of Steeles Ave.
- Remediate priority erosion sites under the *Markham Erosion Restoration Implementation Plan* and erosion risk associated with infrastructure.

Nature

- Improve native aquatic species diversity, abundance and distribution, and protect and enhance habitat for brassy minnow, American brook lamprey, endangered redside dace, mottled sculpin and common shiner north of John St; and northern redbelly dace, Johnny darter, mottled sculpin and rainbow trout south of John St.
- Enhance aquatic habitat with overhanging grassy meadow vegetation for endangered redside dace in Patterson Creek and the tributary to the east. Improve sediment control in Block 11 to protect redside dace habitat.
- Create and enhance riparian wetlands for brassy minnow starting in the tributaries off the Oak Ridges Moraine (ORM) north of 16th Ave between Dufferin and Bathurst Sts.
- Mitigate the thermal impacts and improve fish passage in on-line ponds, including Redelmier Pond, Rumble Pond, Pioneer Pond, the former MNR Hatchery Pond, Mayvon Pond and Mill Pond. Where feasible, take on-line ponds off-line and restore riparian vegetation.
- Discontinue brown trout stocking where potential exists for competition with redside dace.
- Increase treed riparian vegetation cover in golf courses.
- Create and enhance natural cover in the target Terrestrial Natural Heritage (TNH) System (23% of subwatershed) starting in redevelopment areas (Richmond Hill/Langstaff UGC), countryside areas under the ORMCP and *Greenbelt Plan* and natural core/linkage areas under the ORMCP.
- Manage, regenerate or enhance priority TNH regeneration sites.
- Implement the Maple Nature Reserve concept site plan.

Community

- Implement sustainable technologies and practices in redevelopment and intensification areas (Richmond Hill/Langstaff UGC) and through retrofits in existing developed areas.
- Implement the Inter-regional trails plan, creating a north-south linkage from the ORM to South Richvale Greenway and east-west linkages along hydro and utility corridors.
- Regenerate greenspaces including former landfill and composting sites, MacMillan Nature Reserve, Baker Sugar Bush, Pomona Park, Richvale Greenway and Athletic Field, Pioneer Park, and Hunter's Point Park.



*See the Don River Watershed Based Fisheries Management Plan for more detailed information on regeneration priorities for the aquatic system.
**See Figure 28 for watershed-scale priority ranking
***Potential retrofit stormwater management facilities as per City of Toronto's Wet Weather Flow Management Master Plan (2003) and stormwater retrofit studies by the Town of Richmond Hill (2002), Town of Markham (1999), and City of Vaughan (2008).
****The Refined Target Terrestrial Natural Heritage System is composed of areas of existing terrestrial natural cover and areas of potential terrestrial natural cover. The system will be further refined at the local level with consideration for site specific field conditions and planning objectives.

Toronto and Region Conservation for The Living City

Figure 2-6: German Mills Creek Subwatershed Regeneration Plan

GERMAN MILLS CREEK SUBWATERSHED
Regeneration Plan

Water

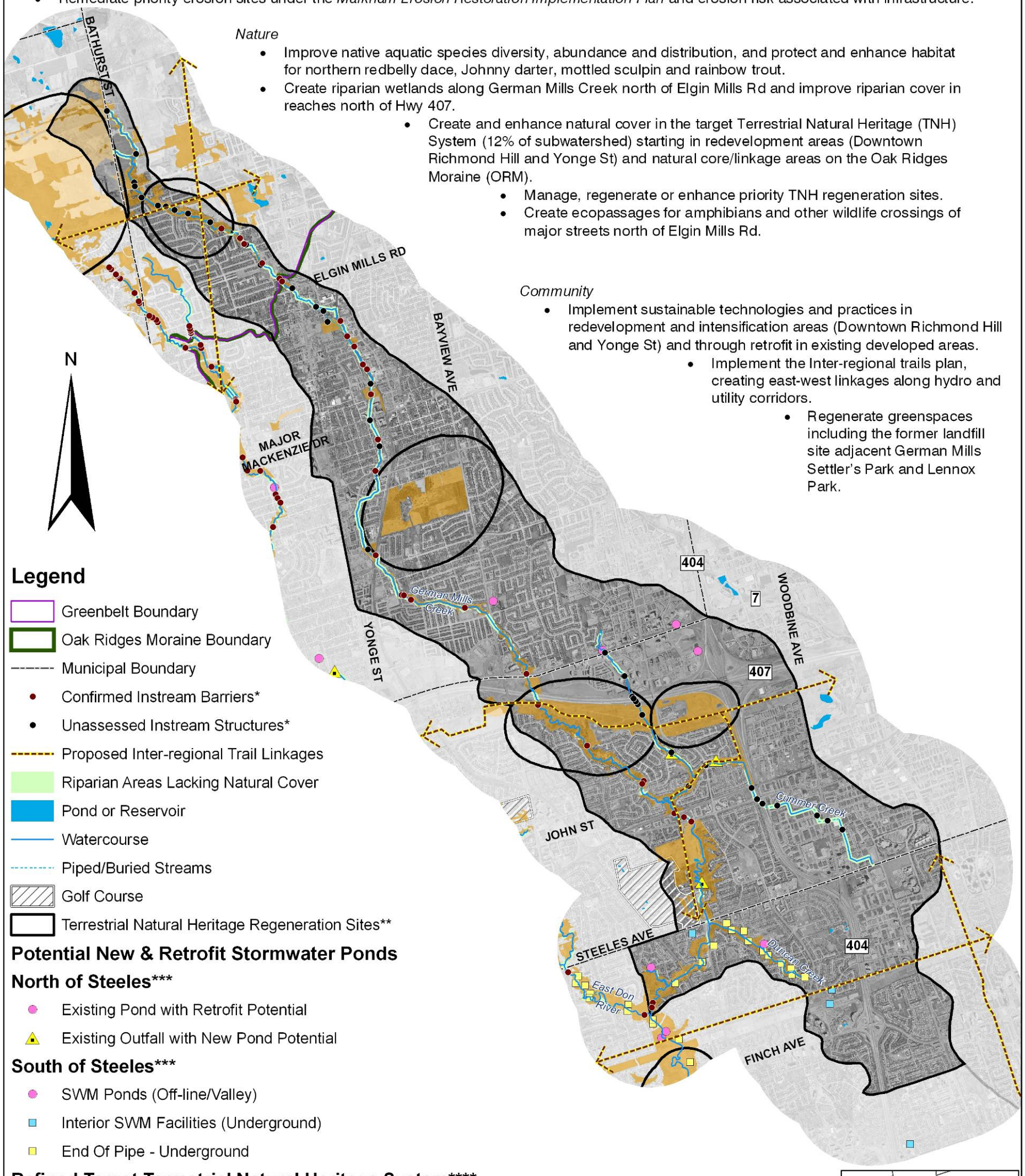
- Improve water balance and stormwater management through outfall and pond retrofits identified by municipalities and source controls (infiltration, evapotranspiration, reuse) in priority sub-basins: Cummer Creek and German Mills Creek north of Major MacKenzie Dr.
- Remediate flood risk starting with German Mills Creek between Steeles Ave and John St and the Enford Rd area, and along Cummer Creek/Don Mills Ditch.
- Mitigate the impacts of potential high impact surface water users (golf courses)
- Remediate priority erosion sites under the *Markham Erosion Restoration Implementation Plan* and erosion risk associated with infrastructure.

Nature

- Improve native aquatic species diversity, abundance and distribution, and protect and enhance habitat for northern redbelly dace, Johnny darter, mottled sculpin and rainbow trout.
- Create riparian wetlands along German Mills Creek north of Elgin Mills Rd and improve riparian cover in reaches north of Hwy 407.
- Create and enhance natural cover in the target Terrestrial Natural Heritage (TNH) System (12% of subwatershed) starting in redevelopment areas (Downtown Richmond Hill and Yonge St) and natural core/linkage areas on the Oak Ridges Moraine (ORM).
- Manage, regenerate or enhance priority TNH regeneration sites.
- Create ecopassages for amphibians and other wildlife crossings of major streets north of Elgin Mills Rd.

Community

- Implement sustainable technologies and practices in redevelopment and intensification areas (Downtown Richmond Hill and Yonge St) and through retrofit in existing developed areas.
- Implement the Inter-regional trails plan, creating east-west linkages along hydro and utility corridors.
- Regenerate greenspaces including the former landfill site adjacent German Mills Settler's Park and Lennox Park.



*See the Don River Watershed Based Fisheries Management Plan for more detailed information on regeneration priorities for the aquatic system.
**See Figure 28 for watershed-scale priority ranking
***Potential retrofit stormwater management facilities as per City of Toronto's Wet Weather Flow Management Master Plan (2003) and stormwater retrofit studies by the Town of Richmond Hill (2002), Town of Markham (1999), and City of Vaughan (2008).
****The Refined Target Terrestrial Natural Heritage System is composed of areas of existing terrestrial natural cover and areas of potential terrestrial natural cover. The system will be further refined at the local level with consideration for site specific field conditions and planning objectives.

Toronto and Region Conservation for The Living City

Figure 2-7: Lower West Don River Subwatershed Regeneration Plan

LOWER WEST DON RIVER SUBWATERSHED
Regeneration Plan

Water

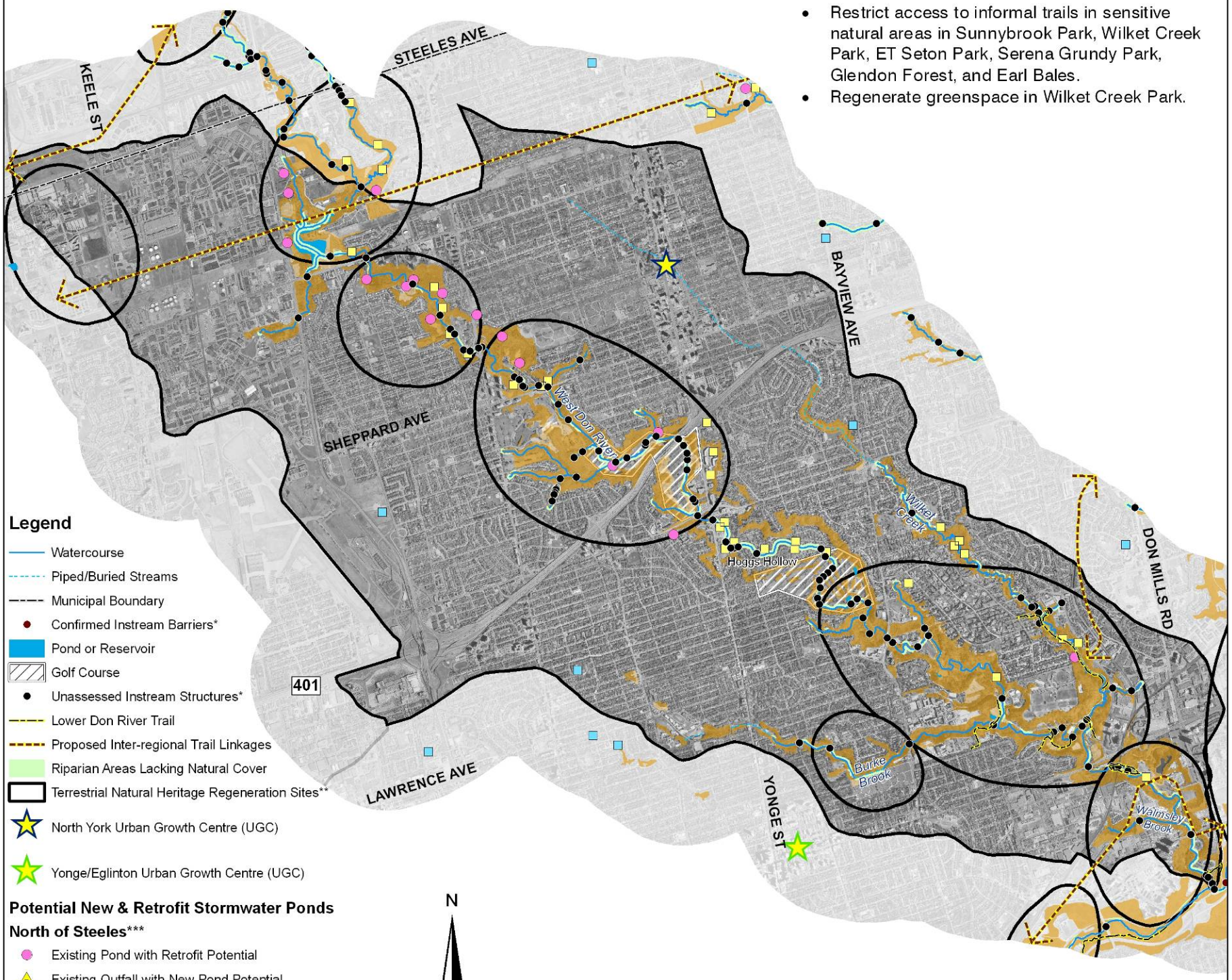
- Implement City of Toronto's *Wet Weather Flow Management Master Plan* according to the 25 Year Implementation Plan including stormwater control retrofits and stream restoration, starting with improvements to the Earl Bales stormwater facility.
  Improve stormwater control for Highway 401 and Highway 404/Don Valley Parkway
- Remediate combined sewer overflows. (Toronto's *Don River and Central Waterfront Project*)
- Maintain flood control infrastructure and channels, starting with the York Mills Channel in Hoggs Hollow.
- Mitigate the impacts of potential medium impact surface water users – primarily golf courses.
- Remediate ravines and sites where infrastructure is at risk of erosion (see municipal and TRCA inventories), starting with Wilket Creek

Nature

- Improve native aquatic species diversity, abundance and distribution, and protect and enhance habitat for Johnny darter, common shiner, white sucker and rainbow trout.
- Create riparian wetlands along Wilket Creek and Burke Brook and the West Don River upstream of Bayview Ave.
- Create and enhance natural cover in the target Terrestrial Natural Heritage (TNH) System (12% of subwatershed) and additional lands identified in Toronto's Official Plan starting with redevelopment and intensification areas (North York UGCs).
- Manage, regenerate or enhance priority TNH regeneration sites. Complete fencing of the "off-leash" area in Sunnybrook Park.
- Designate and restrict public access to protected areas for shoreline bird habitat at G. Ross Lord Dam and stormwater ponds.

Community

- Implement sustainable technologies and practices in redevelopment and intensification areas (North York UGCs) and through retrofit in existing developed areas.
- Implement the Inter-regional trails plan creating east-west linkages along hydro corridors, and partner with golf courses to complete trails along the West Don River (connect Earl Bales Park and York Mills Valley Park through the Don Valley Golf Course, link York Mills Valley Park to Glendon Forest through Rosedale Golf Club).
- Restrict access to informal trails in sensitive natural areas in Sunnybrook Park, Wilket Creek Park, ET Seton Park, Serena Grundy Park, Glendon Forest, and Earl Bales.
- Regenerate greenspace in Wilket Creek Park.



*See the Don River Watershed Based Fisheries Management Plan for more detailed information on regeneration priorities for the aquatic system.
**See Figure 28 for watershed-scale priority ranking
***Potential retrofit stormwater management facilities as per City of Toronto's Wet Weather Flow Management Master Plan (2003) and stormwater retrofit studies by the Town of Richmond Hill (2002), Town of Markham (1999), and City of Vaughan (2008).
****The Refined Target Terrestrial Natural Heritage System is composed of areas of existing terrestrial natural cover and areas of potential terrestrial natural cover. The system will be further refined at the local level with consideration for site specific field conditions and planning objectives.

Toronto and Region Conservation for The Living City

Figure 2-8: Lower East Don River Subwatershed Regeneration Plan

LOWER EAST DON RIVER SUBWATERSHED
Regeneration Plan

Water

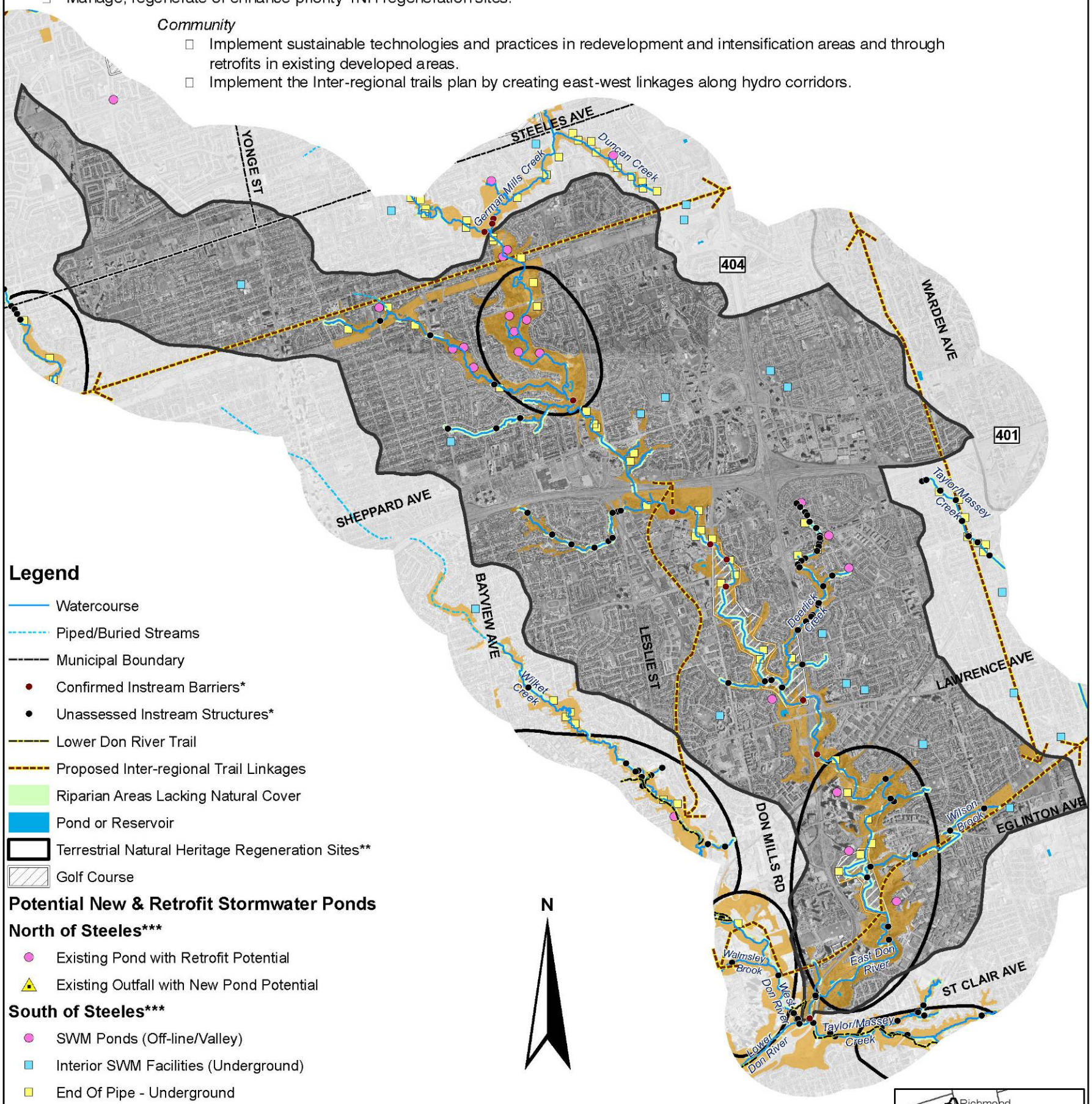
- Implement Toronto's *Wet Weather Flow Management Master Plan* (as updated) including stormwater control retrofits and stream restoration. Improve stormwater control for Hwys 401 and 404/Don Valley Parkway.
- Remediate combined sewer overflows per Toronto's *Don River and Central Waterfront Project.*
- Remediate flood risk starting south of Eglinton Ave.
- Mitigate the impacts of potential medium impact surface water users (golf courses).
- Remediate ravines and priority erosion control sites starting with Deerlick and Newtonbrook creeks.

Nature

- Improve native aquatic species diversity, abundance and distribution, and protect and enhance habitat for northern redbelly dace, mottled sculpin, rainbow trout and Johnny darter north of Hwy 401; and Johnny darter, common shiner, white sucker and rainbow trout south of the 401.
- Create riparian wetlands in Deerlick Creek and other tributaries north of Sheppard Ave and west of Leslie St.
- Work with golf courses to regenerate riparian cover.
- Create and enhance natural cover in the target Terrestrial Natural Heritage (TNH) System (10% of subwatershed) and additional lands identified in Toronto's Official Plan, starting with redevelopment and intensification areas.
- Manage, regenerate or enhance priority TNH regeneration sites.

Community

- Implement sustainable technologies and practices in redevelopment and intensification areas and through retrofits in existing developed areas.
- Implement the Inter-regional trails plan by creating east-west linkages along hydro corridors.



*See the Don River Watershed Based Fisheries Management Plan for more detailed information on regeneration priorities for the aquatic system.
**See Figure 28 for watershed-scale priority ranking
***Potential retrofit stormwater management facilities as per City of Toronto's Wet Weather Flow Management Master Plan (2003) and stormwater retrofit studies by the Town of Richmond Hill (2002), Town of Markham (1999), and City of Vaughan (2008).
****The Refined Target Terrestrial Natural Heritage System is composed of areas of existing terrestrial natural cover and areas of potential terrestrial natural cover.

Toronto and Region Conservation for The Living City

Figure 2-9: Taylor/Massey Creek Subwatershed Regeneration Plan

TAYLOR/MASSEY CREEK SUBWATERSHED
Regeneration Plan

Water

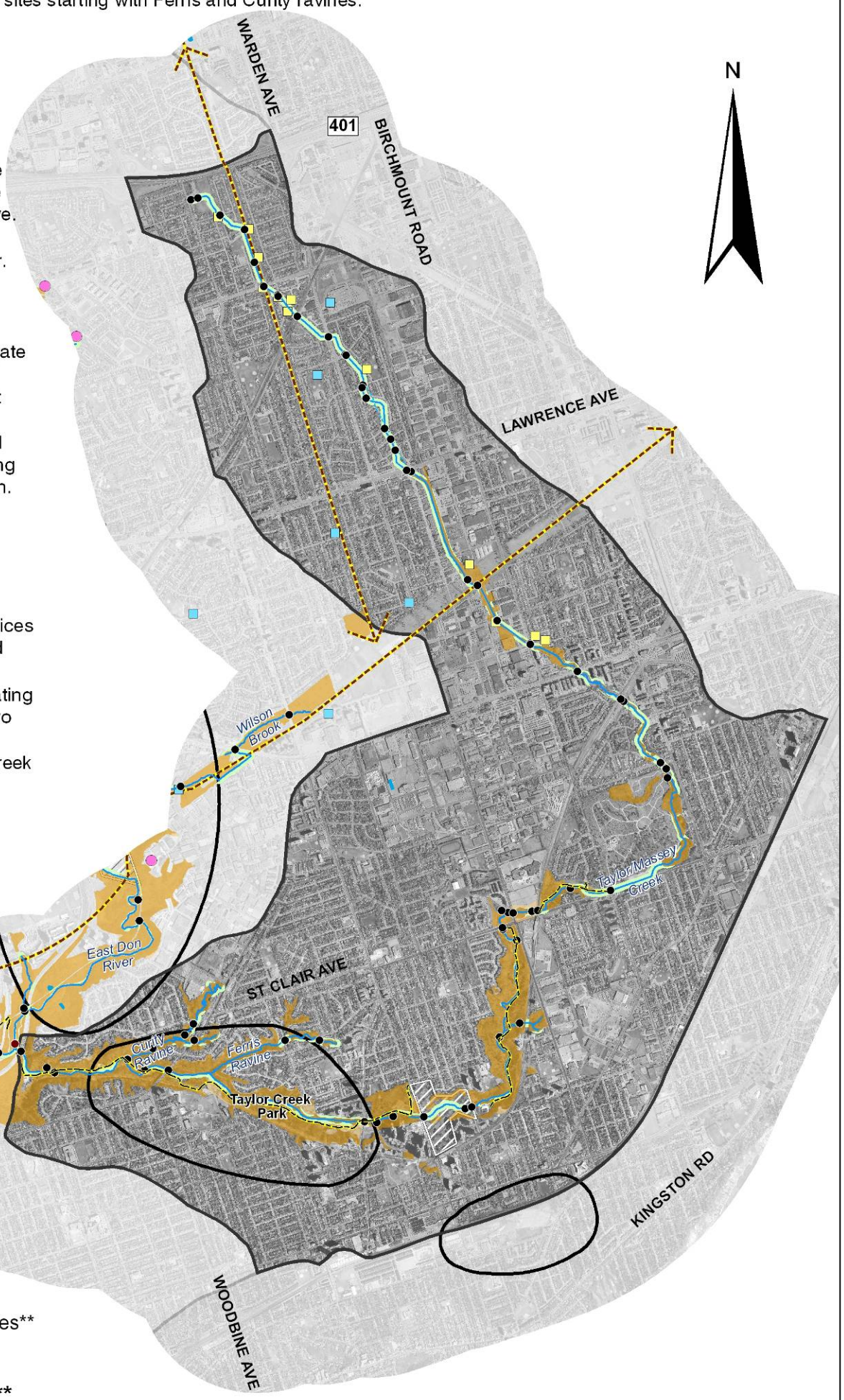
- Implement Toronto's *Wet Weather Flow Management Master Plan* (as updated) including stormwater control retrofits and stream restoration. Improve stormwater control for Hwy 401.
- Remediate combined sewer overflows per Toronto's *Don River and Central Waterfront Project*.
- Remediate flood risk starting with the reaches north of Lawrence Ave and south of the Gatineau hydro corridor.
- Remediate ravines and priority erosion control sites starting with Ferris and Curity ravines.

Nature

- Improve native aquatic species diversity, abundance and distribution, and protect and enhance habitat for white sucker, creek chub, longnose dace, and the benthic community.
- Create wetlands where groundwater seeps are prevalent starting in Taylor Creek Park and the reach between Birchmount Rd and Warden Ave.
- Improve riparian cover starting with the reach from Lawrence Ave south to the hydro corridor.
- Improve instream bed structure in the Creek starting in the reach north of the east-west Gatineau hydro corridor.
- Complete an instream barrier survey and mitigate perched culverts where possible.
- Create and enhance natural cover in the target Terrestrial Natural Heritage (TNH) System (minimum 7% of subwatershed) and additional lands identified in Toronto's Official Plan starting with areas of redevelopment and intensification.
- Manage, regenerate or enhance priority TNH regeneration sites.

Community

- Implement sustainable technologies and practices in redevelopment and intensification areas and through retrofits in existing developed areas.
- Implement the Inter-regional trails plan by creating north-south and east-west linkages along hydro corridors.
- Regenerate greenspace starting with Taylor Creek Park.
- Implement the Warden Woods Residential Neighbourhood concept site.



Legend

- Confirmed Instream Barriers*
- Unassessed Instream Structures*
- Pond or Reservoir
- Watercourse
- Piped/Buried Streams
- Golf Course
- Lower Don River Trail
- Proposed Inter-regional Trail Linkages
- Riparian Areas Lacking Natural Cover
- Terrestrial Natural Heritage Regeneration Sites**

Potential End of Pipe Stormwater Management Retrofits South of Steeles***

- SWM Ponds (Off-line/Valley)
- Interior SWM Facilities (Underground)
- End Of Pipe - Underground

Refined Target Terrestrial Natural Heritage System****

- Existing Natural Cover
- Potential Natural Cover

0 0.5 1 2 3 4 5 Kilometres

*See the Don River Watershed Based Fisheries Management Plan for more detailed information on regeneration priorities for the aquatic system.
**See Figure 28 for watershed-scale priority ranking
***Potential retrofit stormwater management facilities as per City of Toronto's Wet Weather Flow Management Master Plan (2003) and stormwater retrofit studies by the Town of Richmond Hill (2002), Town of Markham (1999), and City of Vaughan (2008).
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Toronto and Region Conservation for The Living City

Figure 2-10: Lower Don River Subwatershed Regeneration Plan

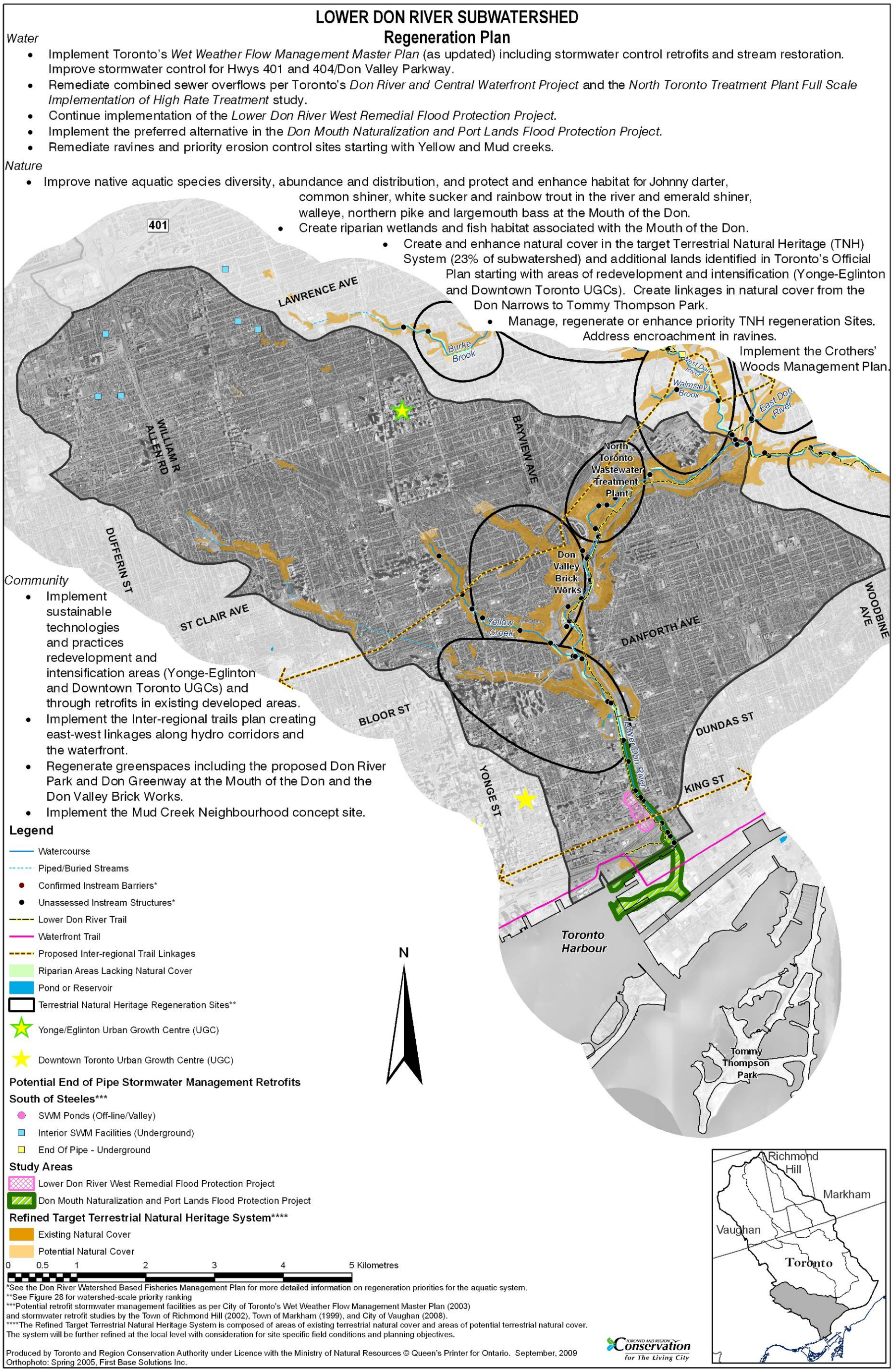

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Sustainable Community Retrofits	Improve source, conveyance and end-of-pipe stormwater management facilities (retrofit and new) and maintain existing stormwater facilities across the watershed – Rec. 1 Caring for Water Prevent and remediate pollution – Rec. 6 Caring for Water Implement sustainable urban form and adopt green development standards for neighbourhoods, sites and buildings – Rec. 3 Caring for Community – Land and Resource Use Improve ecological function of the entire urban landscape, from the natural areas to the built areas, by increasing vegetation cover through better urban design and land management – Rec. 1 Caring for Nature – Terrestrial System Concept site plans are presented in Chapter 7 of the Don River Watershed Plan	City of Toronto initiatives include: • Wet Weather Flow Management Master Plan Implementation (as updated) • Wet Weather Flow Management Guidelines • Green Standard • Mayor's Tower Renewal • Don River and Central Waterfront Project (Don and Waterfront Trunk Sewers and Combined Sewer outflow Control Strategy) • Don Valley Parkway Stormwater Management Project Municipal Class Environmental Assessment Study • Investigations of Chronic Basement Flooding Class Environmental Assessment Study • Community Program for Stormwater Management • Mandatory Downspout Disconnection Program • Green Roof By-law • Design Guidelines for 'Greening' Surface Parking Lots • Eco-roof Incentive Program	2-1* **TRCA,** municipalities, landowners – Develop sustainable neighbourhood retrofit action plans (SNAPs) using an integrated approach including residential social marketing, naturalization, urban forest enhancement, stormwater management, infiltration, energy and effectiveness monitoring. Start with neighbourhoods associated with the Warden Woods Residential Area and Mud Creek Neighbourhood concept site plans. 2-2* **Municipalities** – Undertake end-of-pipe stormwater retrofit projects, including CSO remediation works and update municipal wet weather flow retrofit plans as necessary 2-3 **TRCA**, Municipalities, community partners – Undertake a project to develop a more detailed prioritization of future SNAP sites based on watershed plan direction, municipal infrastructure (SWM)j and parks renewal priorities and community interest. (i.e. Bathurst/Centre St. in Vaughan and Don Mills Channel area of Markham) 2-4 **TRCA** – Demonstrate, monitor and evaluate green building designs and sustainable technologies at the Living City Campus at Kortright (Humber watershed), Toronto Botanical Gardens and other sites. 2-5* Municipalities, TRCA, developers, landowners – Implement stormwater source controls (infiltration, evapotranspiration, re-use) as opportunities arise in new and re-development, intensification (especially in Urban Growth Centres – **Figure 1.1**) and infrastructure projects. Priority sub-basins (**Figures 2.1 and 2.2**) are: • Tributaries of the Upper West Don River north of Major MacKenzie Drive (sub-basin 25) to protect aquatic habitat supporting aquatic species that are habitat specialists and regionally significant groundwater recharge; • Industrial lands west of Dufferin Street to mitigate flood risk (reduce peak flows) and improve habitat	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Sustainable Community Retrofits *(continued)*		• Water Efficiency Program • Live Green Project • Earl Bales Park stormwater pond retrofit project • Climate Positive Development Program pilot site in the Lower Don Lands Town of Markham Stormwater Retrofit Study Markham – Erosion Restoration and Habitat Enhancement Study City of Vaughan Stormwater Retrofit Study Town of Richmond Hill Stormwater Retrofit Study Town of Richmond Hill Pioneer Park stormwater pond retrofit project York Region's Water for Tomorrow Program TRCA's Sustainable Technologies Evaluation Program Low Impact Development Stormwater Management Manual (TRCA, Credit Valley Conservation) TRCA Stormwater Management Criteria Document Living City Campus at Kortright (Humber Watershed) CaGBC Leadership in Energy and	for long term indicator species (rainbow darter) (sub-basins 14, 28); • Patterson Creek and the western tributaries of the Upper East Don River to protect existing and recovery redside dace habitat and regionally significant groundwater recharge (sub-basins 3A, 26, 4, 24); • Pomona Creek to mitigate watercourse erosion and improve long term potential for aquatic habitat regeneration for migratory species (contingent on barrier mitigation). Source controls should be considered in redevelopment of the Richmond Hill-Langstaff Urban Growth Centre (sub-basin 18); • Cummer Creek to mitigate flood risk and watercourse erosion and improve long term potential for aquatic habitat regeneration for migratory species (contingent on barrier mitigation) (sub-basin 29); • German Mills Creek north of Major MacKenzie Drive to mitigate flood risk (reduce peak flows) and maintain regionally significant groundwater recharge (sub-basin 23); and • Priority areas in the City of Toronto as outlined in the Wet Weather Flow Management Master Plan. 2-6 **Municipalities** - Continue to implement the City of Toronto's Old Landfills Remediation Program and encourage York Region municipalities to adopt a similar proactive program for identifying, assessing, and remediating old landfill sites. 2-7 **Municipalities** - Naturalize stormwater ponds to discourage use by Canada geese and provide educational signage advising the public not to feed the geese. 2-8 **TRCA,** municipalities – Implement/continue goose	✓ ✓ ✓	✓

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Sustainable Community Retrofits -		Environmental Design for Neighbourhood Development (LEED-ND) – in pilot phase TRCA Erosion and Sediment Control Guidelines Municipal Official Plan studies • Green Directions Vaughan • A Plan for People – A plan for Change – Richmond Hill • York Region Sustainability Strategy • Toronto's Strategic Plan Sustainability Strategy and Climate Change Strategy	management at sites on the Don as required. 2-9* Watershed residents, businesses, landowners – Adopt lot level sustainable practices to achieve water balance, natural heritage and resource use objectives (e.g., rain gardens, rain barrels, downspout disconnections, back/front yard naturalization (partial or complete), household water and energy conservation, waste reduction). 2-10 Permit to Take Water holders, TRCA, MOE – Mitigate the potential impacts of surface water takings on baseflow in sensitive aquatic habitats (e.g., FMZ # 1 – **Figure 1.4**). See also Section 4 for lot level stormwater retrofit stewardship projects on residential, business and institutional lands. See also Section 5 for stormwater infrastructure maintenance and financing actions.	✓ ✓	✓
Flood and Erosion Risks and Stream Form	Manage flood risks – Rec. 2 Caring for Water Improve stream form – Rec. 5 – Caring for Water	Lower Don River West Remedial Flood Protection Project Don Mouth Naturalization and Port Lands Flood Protection Project Flood and erosion control programs (TRCA) City of Toronto Investigations of Chronic Basement Flooding Class Environmental Assessment Study	2-11* Waterfront Toronto, TRCA, City of Toronto – Continue to implement the Lower Don River West Remedial Flood Protection Project. 2-12* Waterfront Toronto, TRCA, City of Toronto – Implement the preferred alternative in the Don Mouth Naturalization and Port Lands Flood Protection Project. 2-13 Municipalities, TRCA, landowners – Restore natural cover in drainage areas upstream of flood vulnerable areas to help attenuate flood flows (e.g., no mow zones, riparian	✓ ✓ ✓	✓

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Flood and Erosion Risks and Stream Form *(continued)*		West Thornhill Stormwater Flood Remediation Class Environmental Assessment Study (Markham) Wilket Creek restoration Wicksteed Avenue Erosion Control Project Markham Master Drainage Study Vaughan Master Drainage Study TRCA Floodplain Management and Watercourse Crossing Guidelines Toronto Burke Brook/Sherwood Park Fluvial Geomorphology study Proposed Official Plan Policies and Boundary Update for the Hogg's Hollow Special Policy Area	plantings, grass swales) (**Figure 1.9**). 2-14 **Municipalities**, TRCA – Remediate flood vulnerable roads or sites when designing infrastructure improvements to service (e.g. watercourse crossings) (**Figure 1.9**). 2-15* **Toronto,** TRCA – Complete a fluvial geomorphology study of Taylor/Massey Creek, including: a complete geomorphic systems analysis of the creek; a risk assessment for all valley land infrastructure and a long term concept to remediate identified concerns. 2-16* **Richmond Hill**, TRCA – Develop hydrologic and hydraulic modelling for the Enford Road area to confirm flood risk and potential mitigation alternatives. 2-17* Municipalities, TRCA – Remediate erosion in ravines and priority erosion control sites (as identified in municipal and TRCA databases) where human health, property, or infrastructure is at risk. In Toronto, start with the following ravines: Wilket Creek, Deerlick Creek, Newtonbrook Creek, Ferris Ravine, Curity Ravine, Yellow Creek, and Mud Creek. See Section 5 on Operations and Maintenance	✓ ✓ ✓	✓ ✓
Natural Cover Restoration	Improve ecological function of the entire urban landscape, from the natural areas to the built areas, by increasing vegetation cover through better urban	Ecosystem recovery planning for the terrestrial system (TRCA) Don River Habitat Implementation Plan	**2-18*** Whitebelt – **Vaughan**, York, TRCA - Develop restoration implementation plans (e.g., Habitat Implementation Plan) for the natural heritage system identified in municipal growth plans to enable	✓	

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Natural Cover Restoration *(continued)*	design and land management – Rec. 1 Caring for Nature – Terrestrial System Secure the Target Terrestrial Natural Heritage System and look for additional opportunities for expansion – Rec. 2 Caring for Nature – Terrestrial System Regenerate and enhance the quality of the natural system by increasing natural cover quantity, improving patch size and shape, and managing invasive species – Rec. 3 Caring for Nature – Terrestrial System Maintain and expand, where possible, urban vegetation (e.g., natural cover, urban canopy, plantings, greenspaces) to enhance evaporation and infiltration of stormwater – Action under Rec. 1 Caring for Water Create or enhance riparian wetlands, with focus on reaches that still support aquatic communities that rely on his habitat – Rec. 3 Caring for Nature – Aquatic System	Town of Richmond Hill's Natural Heritage Strategy, Tree Protection Resolution and Private Tree Protection By-law Town of Markham OPA 140 identifies natural heritage areas to be protected Markham's "Trees for Tomorrow" tree planting program, Natural Heritage Network Vaughan Natural Heritage and Environmental Policy Review for OP update York updating TNH mapping City of Toronto Natural Environment Community Program and TNH Strategy Programs that provide funding and other resources include TRCA's Private Land Stewardship Programs and City of Toronto Climate Change Strategy. Active NGO programs with restoration components include those of Friends of the Bartley Smith Greenway, Task Force to Bring Back the Don, East Don Parkland Partners, Friends of the Don East, Sherwood Park Advisory Committee, Friends of Glendon Forest, LEAF, Taylor Massey Project, Evergreen, Todmorden Mills Wildflower Preserve etc. Municipal tree protection by-laws Lower Don River West Remedial Flood Protection Project Don Mouth Naturalization and Port	implementation of natural cover (and its hydrologic benefits) in advance or concurrently with land development. The initial priorities are development blocks 27 and 28 (north of Teston Road, between Jane and Keele streets). **2-19*** Oak Ridges Moraine/Greenbelt – **Vaughan**, Richmond Hill, York, TRCA - Develop restoration implementation plans (e.g. HIP) for targeted lands in priority areas (**Figures 2.2-2.8**) to enable implementation and enhancement of natural cover. Initial priorities are: • Settlement areas subject to greenfield development or intensification (starting with the Maple Uplands – Teston site, Block 18 woodlot, and the German Mills headwaters areas). • Lands in the Countryside areas of the ORMCP (starting with the Maple Uplands-McGill area). • Lands in the Natural Core and Linkage areas of the ORMCP and Protected Countryside areas of the Greenbelt Plan (starting with Block 27, Maple Uplands – McGill, Block 28, Maple Uplands – Teston, Maple Uplands – Kirby areas). **2-20*** Existing Urban Areas – Municipalities, TRCA, NGOs – Regenerate and enhance natural cover in portions of the target terrestrial natural heritage system in existing urban areas in priority areas (**Figure 2.2-2.8**) and where TRCA's recovery planning identifies opportunities. Look for new opportunities through growth planning and intensification. **2-21*** **TRCA**, municipalities, landowners, NGOs – Continue natural cover regeneration work and implementation of the Don habitat implementation plan (HIP). **2-22*** TRCA, City of Toronto, Waterfront Toronto – Continue work towards naturalization of the Lower Don River West Lands and the Don Mouth. 2-23 **TRCA** - Refine terrestrial natural heritage	✓ ✓ ✓ ✓	 ✓

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Natural Cover Restoration *(continued)*		Lands Flood Protection Project TRCA Future Forests Project	implementation priorities and plans at the site scale using the following GIS layers: • Lands within the target TNHS (**Figure 1.5**). • Stormwater management needs. • Quantity of existing natural cover in catchments of headwater drainage to redside dace and brook trout habitat as identified in *Don River Fisheries Management Plan* (*DFMP*). • Groundwater recharge areas (**Figure 1.3**) • Known opportunity sites for wetland restoration. • Vulnerable habitat patches (those supporting species of conservation concern in urban or near urban areas). • Opportunities to "fill in" deficient patches with increased forest cover. • Biodiversity criteria from TRCA Ecosystem Recovery Planning project. • HIP layers (opportunities and restored sites)		
			2-24 Municipalities, TRCA, NGOs – Map the extent of invasives in the Don and control the spread of terrestrial invasive species (e.g., buckthorn, dog strangling vine, insects) where possible. Start with priority terrestrial natural heritage regeneration sites (**Figures 2.2-2.8**).	✓	✓
			2-25 **Municipalities**, TRCA – Develop and implement urban forest strategies, including protection of tree canopy and understorey integrity.	✓	
			2-26 **TRCA**, Municipalities, NGOs, landowners - Create and enhance riparian cover where lacking. Co-ordinate with detailed restoration implementation plans noted above and the *Don River Fisheries Management Plan*. Start with: • Overhanging grassy meadow cover in redside dace habitat (Upper East Don River, Patterson Creek);	✓	✓

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
			• Tree cover in golf courses (starting with the Upper and Lower East Don River subwatersheds); and • Create riparian wetland habitat where possible in Fish Management Zone 2 (development block 27 in Vaughan) (Figure 1.4), ORM tributaries north of 16th Avenue between Dufferin and Bathurst streets (brassy minnow habitat), German Mills Creek north of Elgin Mills Road, Wilket Creek, Burke Brook, the West Don River upstream of Bayview Avenue, Deerlick Creek, and at the Mouth of the Don. Where conditions don't suit riparian wetlands, increase native tree and shrub cover along streams. 2-27 TRCA, Municipalities – identify and modify any relevant municipal by-laws that may impact naturalization projects on private lands (i.e. property standards, nuisance weeds)	✓	
Aquatic Habitat	Implement Redside Dace Recovery Team recommendations to investigate the existing redside dace population status and habitat improvement and protection opportunities (in FMZ 1 where this species is currently known to occur and in FMZs 2 and 3 where a population may be recovered) – Rec. 1 Caring for Nature, Aquatic System Protect and improve instream habitat for the Target Community Indicator Species – Rec. 2 Caring for Nature, Aquatic System Create or enhance riparian wetlands, with focus on reaches that still support aquatic communities that rely on this habitat (e.g., known populations of brassy minnow) – Rec. 3 Caring for	Redside Dace Recovery Strategy (MNR) TRCA Redside Dace project (Rouge Watershed) Chinook salmon stocking program and ad hoc stocking of brown trout and rainbow trout (MNR) Don Mouth Naturalization and Port Lands Flood Protection Project EA TRCA instream barrier survey in the Don Watershed Don FMP Don River and Central Waterfront Study Reassessment of Sea Lamprey barrier at Pottery Rd. (DFO, TRCA)	In addition to the riparian cover actions noted above: **2-28*** TRCA, City of Toronto, Waterfront Toronto – Continue work towards creation of wetland cover and improved aquatic habitat as part of the Don Mouth Naturalization and Port Lands Flood Protection Project. 2-29* DFO, **MNR, TRCA**, municipalities, NGOs - Improve native aquatic species diversity, abundance and distribution, and protect and enhance habitat for Target Community Indicator Species as outlined in the *Don River Fisheries Management Plan*. Improved stormwater management is a top priority to be implemented along with instream projects like those listed below. • Relocate any brown trout stocking to FMZ #4 from FMZ #1; • Mitigate the thermal impacts of on-line ponds in the Upper East Don River subwatershed, including Redelmeier Pond, Rumble Pond, Pioneer Pond, the former MNR Hatchery Pond, Mayvon Pond,	✓ ✓	✓ ✓

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Aquatic Habitat *(continued)*	Nature, Aquatic System Complete an instream barrier assessment for the entire watershed and identify priority barrier mitigations that would achieve the most improvement to fish passage and habitat – Rec. 4 Caring for Nature, Aquatic System	Brook trout survey (TRCA, MNR)	and Mill Pond; and • Improve instream bed structure in hardened stream sections throughout the watershed where opportunities exist (e.g., Taylor/Massey Creek north of the Gatineau Hydro Corridor and Don Narrows). 2-30 **TRCA**, Municipalities – Improve the connectivity of aquatic habitat in the Don, per the *Don River Fisheries Management Plan*. Start with: • Complete and confirm the instream barrier survey for the Don; • Identify priority fish barriers to retain as species partitions (e.g., separating stocked brown trout and redside dace in FMZ #1) (**Figure 1.4**); • Identify priority fish barriers to mitigate; and • Maintenance as required on the fish bypass channel at MacKenzie Glenn Pond (north of Major MacKenzie, east of Jane).	✓	✓
Nature-Based Experiences and Trails	Protect and enhance the quality and extent of public greenspaces throughout the watershed and, in particular, in areas of increasing population density and development – Rec. 1 Caring for Community, Nature-based Experiences Expand the network of formal trails to connect key destinations and improve connectivity with neighbouring watersheds, the Oak Ridges Moraine	Bartley Smith Greenway Don Watershed Inter-regional Trails Plan (Figure 1.6) provides conceptual framework Local and regional municipal trails plans include some inter-regional components (e.g. Markham's Bicycle and Pathways and Trails Master Plan Studies)	2-31 **Municipalities**, TRCA – Designate pet off-leash areas outside of sensitive natural heritage areas, consistent with TRCAs off leash policy. **2-32*** **TRCA**, municipalities, NGOs - Undertake detailed planning and develop a long term funding strategy to implement and maintain the Don Watershed Inter-regional Trails network (**Figures 1.6** of this Guide). Focus on creation of new trails to fill gaps in north-south and east-west linkages:	✓ ✓	

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Nature-Based Experiences and Trails *(continued)*	and the waterfront – Rec. 2 Caring for Community, Nature-based Experiences Promote the natural and cultural heritage of the watershed and engage the community in their protection, regeneration and celebration – Rec. 3 Caring for Community, Nature-based Experiences	Walk the Don trail guides Paddle the Don Richmond Hill Mill Pond Splash Richmond Hill Walks on the Wild Side Trail Guides Discovery Walks Crother's Woods Master Plan and trail mapping initiative (Toronto) Land Care pilot project on TRCA lands in Peel region TRCA Trail Ecology project Updating of TRCA trail planning and design guidelines	• In Vaughan, along a completed Bartley Smith Greenway from Teston Road to south of Steeles Avenue; • In Richmond Hill, along the east branch of the Upper East Don River from the Oak Ridges Moraine Trail to South Richvale Greenway; • In Markham, from Huntington Park through the East Don Parkland in Toronto, down to Sunnybrook Park; • In Toronto, along the Warden Hydro Corridor from the east-west Finch Avenue Hydro Corridor to Wexford Park; • In the headwaters, along the Trans-Canada Pipeline south of Kirby; • In the middle of the watershed along the Highway 407 and Finch Hydro Corridors; • In the southern watershed along rail lines and hydro corridors; and • Across the waterfront connecting to the proposed Don River Park. 2-33* Municipalities, **TRCA**, NGOs – Identify a conceptual route for a Don River Learning Trail based on existing and new inter-regional trails and incorporating signage and new educations centres and opportunities at key locations throughout the watershed, and develop a strategy for the associated land securement and trail implementation. The Trail would profile wet weather flow improvements and innovative urban water management, make connections to air quality and climate change issues, and highlight local natural, cultural and industrial heritage. Potential centres could include: • A headwaters trailhead; • Glendon College; • Maple Nature Reserve; • Ontario Science Centre;	✓	

Table 2.1 Regeneration Project Priorities

1-1* **= Top priority project**

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Nature-Based Experiences and Trails *(continued)*			• Todmorden Mills; • Don Valley Brick Works; and • The Mouth of the Don.		
			2-34 **Municipalities** –Using an adaptive management approach, map formal and informal trails and decommission unauthorized or poorly located trails (in sensitive/hazardous areas) and formalize trails where suitable.	✓	✓
			2-35 **Municipalities**, TRCA – Develop and implement regeneration plans for high-use parks and public lands in need of revitalization: Start with: • In Toronto: Wilket Creek Park and Taylor Creek Park Wetland. • In Markham: Pomona Mills Creek and the closed landfill lands adjacent to German Mills Settler's Park. • In Vaughan: former Avondale composting site and former Keele Valley Landfill site, Baker Sugar Bush, and Bartley Smith Greenway. • In Richmond Hill: Richvale Greenway and Richvale Athletic Field, Lennox Park, Pioneer Park and Hunter's Point Park.	✓	✓
			2-36 Waterfront Toronto, TRCA, City of Toronto – Continue to develop and implement plans for the Don River Park	✓	✓
			2-37 Waterfront Toronto, TRCA, City of Toronto – Continue to develop and implement plans parks and trails at the Don Mouth	✓	✓
			2-38 **Municipalities**, TRCA, NGOs – Develop and implement a way-finding signage program to formalize existing trail networks, assist trail users to orient themselves, and provide information about trail and user	✓	

Table 2.1 Regeneration Project Priorities

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Implementation Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
			safety.		
Cultural Heritage **Cultural Heritage** (*continued*)	Indentify, investigate and conserve cultural heritage prior to changes in land use or redevelopment – Rec. 1 Caring for Community, Cultural Heritage Fill gaps in archaeological knowledge – Rec. 3 Caring for Community, Cultural Heritage Develop and support existing active and participatory programs to increase awareness of cultural heritage and living culture – Rec. 4 Caring for Community, Cultural Heritage	Todmorden Mills Heritage Museum and Arts Centre Evergreen at the Don Valley Brick Works Local municipal heritage buildings and museums Lost River Walks Vaughan's Heritage Discovery Tours Doors Open Municipal Heritage Committees Archaeological assessment through development review process	Partners: TRCA, Ministry of Aboriginal Affairs**,** Ministry of Culture, MNR, Aboriginal communities, municipalities, private and avocational archaeologists, Ontario Archaeological Society, Ontario Association of Professional Archaeologists **2-39*** Establish a facility (GTA-wide) for archaeological artifact storage and document collections that is accessible to researchers (secure funding for capital and operations).	✓	
Implementation of Concept Sites	Concept site plans are presented in Chapter 7 of the Don River Watershed Plan	Partners in Project Green – GTAA Eco-Industrial Zone (Etobicoke Creek watershed) Don Valley Brick Works restoration G. Ross Lord regeneration work	2-40* Municipalities, TRCA – Pursue additional scoping and study, and implement the Maple Nature Reserve (Quonset Hut), Mud Creek Neighbourhood, and Warden Woods Residential Area concept site plans. 2-41* Businesses, TRCA, Municipalities, NGOs – Adopt the Partners in Project Green Eco-Zone Business model and strategic elements of the Industrial Retrofit concept site plan to engage watershed business communities in adopting sustainable practices. Start with building relationships in the Leaside Business Area.	✓ ✓	 ✓

3. Land Securement

In general terms, land securement refers to the act of bringing lands in to public ownership and/or otherwise securing the assurance of their protection through private landowner agreements. Land securement tools include: planning/policy (e.g., *Planning Act, Conservation Authorities Act)*, stewardship (e.g., landowner agreements and education); and acquisition (i.e., securing land through title, easements and covenants on title).

The *Don River Watershed Plan* recommends securing a target natural cover system of 13% of the watershed, as shown in **Figure 1.5** (see Section 1 of this Guide). The target system includes areas of potential natural cover in the headwaters. The following priorities should be used to guide securement activities within the target terrestrial natural heritage system:

1. Unprotected lands subject to greenfield development or intensification.
2. Locations in the Protected Countryside areas of the *Greenbelt Plan* and the *Oak Ridges Moraine Conservation Plan* (ORMCP).
3. Natural Core and Linkage areas designated in the ORMCP.
4. Areas of redevelopment in existing urban areas.

These priorities have been established with consideration for the vulnerability to losses in the targeted natural heritage system due to the likelihood of land use change coupled with availability of or lack of other mechanisms for securing lands (e.g. land use planning process). As noted above, securement may involve acquisition, stewardship, agreements or other tools.

The *Don River Watershed Plan* also recommends securement of lands, especially during redevelopment activities, to allow streams to evolve naturally. This will reduce the need for engineered methods to protect property and infrastructure from erosion and flooding.

Another securement priority is lands to enable expansion of an inter-regional trail system. This could be achieved through acquisition, or more likely through voluntary agreements or easements with private landowners (e.g. golf courses or hydro corridors) to allow limited public access along designated trails.

See Table 3.1 for a work plan of securement projects.

Table 3.1 Securement Projects

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Securement of Terrestrial Natural Heritage	Secure the Target Terrestrial Natural Heritage System and look for additional opportunities for expansion – Rec. 2 Caring for Nature, Terrestrial System	Don Watershed securement initiatives of TRCA, municipalities, Nature Conservancy	3-1 **TRCA** – Update the priority list for securement within the Don Watershed based on the Watershed Plan's recommended priorities within the TNHS (see above list)	✓	
			3-2* **TRCA**, municipalities - Explore opportunities to partner on securement of .high priority sites as outlined in the Don Watershed Plan.	✓	
			3-3 Municipalities, TRCA - Work with MEI to investigate mechanisms, beyond traditional planning measures, to secure the target TNHS lands in potential urban growth areas (aka, "whitebelt") that do not have legislated protection from urban development.	✓	✓
			3-4 TRCA – Secure access to priority public and private lands for development and implementation of Don Habitat Implementation Plan (see Section 2)	✓	
Securement of Stream Corridors	Investigate opportunities to acquire lands in strategic locations to allow stream corridors to evolve naturally, without impacting property or infrastructure – Action under Rec. 5 – Caring for Water	Secondary plans and plans of subdivision for redevelopment TRCA's Valley and Stream Corridor Management Program and Ontario Regulation 166/06 Evaluation, Classification and Management of Headwater Drainage Features: Interim Guidelines (CVC and TRCA, 2007).	3-5 **Municipalities**, TRCA – As lands come up for redevelopment, seek opportunities to acquire lands in strategic locations to allow stream corridors to evolve naturally, without impacting property or infrastructure.	✓	✓
Securement of Public Greenspace	Expand the network of formal trails to connect key destinations and improve connectivity with neighbouring watersheds, the ORM, and the waterfront – Rec. 2 – Caring for	Don Watershed securement initiatives of TRCA, municipalities Municipal trail master plans Oak Ridges Trail	3-6 **TRCA** –Update the priority list for securement within the Don Watershed based on the Watershed Plan's recommended priorities for expanding the system of inter-regional trails and development of the Don Learning Trail route (see Section 2)	✓	

Table 3.1 Securement Projects

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
	Community, Nature-based Experiences Improve public accessibility to non-traditional greenspace lands, such as utility corridors, and key connecting private lands, such as golf courses and school grounds Acquire land for greenspaces and trails in priority areas, including David Dunlap Observatory in Richmond Hill and lands needed for key trail connections – Actions under Rec. 1 – Caring for Community, Nature-based Experiences		3-7* TRCA, **municipalities**, NGOs, golf courses, private landowners – Secure lands to establish the missing links in municipal trails. Work with private landowners (e.g. golf courses, hydro corridors) to acquire easements for trail access where acquisition is not a suitable alternative.	✓	✓
			3-8 TRCA, **municipalities**, developers – Preserve publicly and privately owned lands with significant heritage buildings as part of the natural and cultural heritage system (e.g. David Dunlap observatory, MacMillan Farm property)	✓	✓
			3-9* **TRCA**, Toronto, Waterfront Toronto – Seek opportunities to secure additional public greenspace through the remediation of brownfield sites, reestablishment of a naturalized mouth of the Don, and redevelopment of lands adjacent to the naturalized river mouth.	✓	✓
			3-10* **Municipalities**, MOE, TRCA – Ensure that publicly-owned lands appropriate for inclusion into the greenspace system (e.g., regenerated landfill sites) remain as public lands and any ownership or access issues are resolved.	✓	

4. Stewardship and Outreach Education

A recurring theme in this plan is the need for initiatives to increase awareness and provide more information about ways that individuals, businesses and governments can contribute to regenerating a healthy, sustainable watershed. The watershed plan also highlighted the urgency of this shift to sustainable behaviour, not just to reduce our present impact on the watershed, but to create an accepting market for innovative community designs which will be the basis of redeveloping more sustainable communities as population density continues to rise. How our neighbourhoods and lots are redeveloped and renovated will determine the watershed's long term health.

The *Action Plan for Sustainable Practices – for Residential and Business Sectors in the GTA* (Freeman, 2006) recommends a multi-pronged marketing campaign aimed at homeowners and builders in the GTA. For businesses, a package of measures is proposed, including stream-lined approvals, regulatory changes, financial incentives, information tools, awards and a corporate leaders program.

Technology transfer to planners, consultants developers, the construction and home renovation industry will be key to success. Building on existing programs such as LEED professional accreditation by Canada Green Building Council and STEP workshops, there is a need to train industry professionals in the use of new technologies for stormwater management, water and energy conservation to hasten their adoption and use on the ground. Another focus of outreach should be increasing awareness of erosion and sediment control practices for construction sites and best practices for restoration of a site after a project is completed.

TRCA's Stewardship and Outreach Education section, municipalities and other organizations implement various programs that support this shift to sustainable behaviours, Existing programming should continue to be implemented throughout the watershed. Key subjects for development and implementation of outreach education and stewardship programming targeting private landowners in all sectors are:

- Enhance public awareness and develop marketing programs to enhance voluntary uptake of sustainable practices by home owners and businesses, including:
    - Property naturalization
    - "At source" stormwater controls
    - Water and energy conservation
    - Winter maintenance (salt management)
- Develop and deliver outreach education programs to address on-going care and maintenance issues relating to "at source" stormwater controls on private properties.
- Promote stewardship of public greenspaces and natural areas, including addressing:
    - Encroachment (e.g., dumping, mowing)
    - Incompatible recreational uses, off-leash pets
    - Best management practices for terrestrial and aquatic habitat regeneration (riparian plantings, naturalized plantings)
    - The spread of terrestrial and aquatic invasive species
    - Ongoing operations and maintenance challenges

- Celebration of natural heritage, cultural heritage and living culture

School-aged youth are also a key audience for outreach in the Don Watershed. Encouraging youth to explore the natural features of the watershed will motivate them to be good stewards of their local parks and natural areas. Encouraging sustainable practices at school is another avenue to model practices that can be adopted by individual families at home. TRCA, municipalities, NGOs and school boards have programming on environmental themes that should continue to be delivered across the watershed. In addition, opportunities to incorporate Don-specific, local content to these programs should be explored.

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
4.1. Technical knowledge transfer: training workshops, seminars and materials						
Sustainable Technologies	Developers, consultants, builders, planners through professional associations	Implement source, conveyance and end-of-pipe stormwater management facilities (retrofit and new) and maintain existing stormwater facilities across the watershed – Rec 1 Caring for Water Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings – Rec 3 Land and Resource Use	Sustainable Technologies Evaluation Program (STEP) includes workshops and materials to disseminate information Canada Mortgage and Housing Corporation - Equilibrium™ Sustainable Housing Demonstration Initiative City of Toronto Green Standard - a set of performance measures for sustainable development that responds to the City's environmental concerns. Adopted in 2008, to be implemented by Sept. 2009. Canada Green Building Council LEED Accreditation program for building professionals Kortright Centre Solar, Wind and Earth Green Energy/Home workshops (TRCA) Partners in Project Green model of industrial greening (TRCA, Greater Toronto Airport Authority, business community)	4-1* **TRCA**, municipalities, Green Building Council - Continue existing programming relating to sustainable technologies and consider Don River Watershed Plan priorities in preparation of annual training work plans.	✓	✓
Erosion and Sediment Control	Municipal and CA staff, consultants and contractors	Improve erosion and sediment control and site regeneration – Rec 4 Caring for Water	TRCA delivers annual technical workshops in different locations throughout the jurisdiction. e.g., As part of STEP, TRCA hosted a technical workshop on E&SC in March 2007.	4-2 **TRCA**, Seneca College, University of Guelph, municipalities, DFO, MOE - Continue and expand existing E&SC training program. Work with post-secondary institutions to develop and deliver training courses for professionals	✓	✓
Site Restoration and Planting	Municipal and CA staff, consultants and contractors, horticultural industry, property and grounds managers	Improve erosion and sediment control and site regeneration - Rec. 4 Caring for Water Mitigate the impact of human activities on natural areas by developing a	TRCA maintains information about local suppliers of native plants TRCA's Nursery and Indigenous Plant Propagation Program supplies native trees, shrubs and aquatic vegetation to support Authority regeneration activities across the watersheds. TRCA's Valley & Stream Regeneration Program	4-3 **TRCA** - Maintain current nursery propagation and production of native plants from locally collected seed sources to facilitate TRCA and other partner regeneration/planting initiatives throughout TRCA's jurisdiction. 4-4 **TRCA** - Maintain and publish an inventory of native plant suppliers.	✓ ✓	✓ ✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
		broader understanding of ecosystem health and a commitment to stewardship among the public and businesses – Rec 4 Terrestrial System	provides technical planning/design and regeneration implementation services through ongoing funding partnerships with member municipalities. Eligible projects include (but not limited to): ► tree and shrub planting for naturalization, ► sediment and erosion control, ► wetland habitat creation, and ► trails. TRCA Planning and Development has a number of documents to guide the restoration of disturbed sites following construction – Post-Construction Restoration Guidelines ; Seed Mix Guidelines; Seed Mix Species List; Native Flora List; Non-native Invasive Flora List	4-5 **TRCA, NGOs** - Outreach program to encourage local growers and retailers to grow and stock more native plants and clearly label natives and potential invasives. **4-6*** **TRCA –** host annual workshops for developers, contractors on best practice restoration techniques to improve the success of site restoration and planting work done after construction is completed. 4-7 **TRCA,** professional associations **–** host workshops for property/parks managers to promote sustainable maintenance practices (i.e. reduced mowing, more naturalization, use of native species)	✓ ✓ ✓	 ✓ ✓
Terrestrial Invasive Alien Species	Municipal and CA staff, homeowners and volunteers, nurseries	Regenerate and enhance the quality of the natural system by increasing natural cover quantity, improving patch size and shape, and managing invasive species – Rec 3 Terrestrial System Mitigate the impact of human activities on natural areas by developing a broader understanding of ecosystem health and a commitment to stewardship among the public and businesses – Rec 4 Terrestrial System	TRCA working group on invasive species sets priorities for monitoring and removal of invasives TRCA Stewardship –offers workshops for private landowners (rural focus) to teach identification skills and provide advice on control methods; developed a set of invasive plant field identification cards for use by landowners, volunteers and staff. TRCA Terrestrial Natural Heritage Volunteer Monitoring Program – incorporating invasives into yearly monitoring protocol Ontario Invasive Plant Council (OIPC) – province-wide organization that promotes research and partnerships on invasive control	4-8 **OIPC** ,TRCA, municipalities, working groups - Convene a forum for information sharing on invasive species management techniques and upcoming threats. 4-9 TRCA, OIPC – hold workshops for the public and horticultural trade to educate gardeners, volunteers, trail users and private landowners and nurseries about invasives. 4-10 Interpretive signage or programming in parks where invasive flora threaten high quality natural areas	✓ ✓ ✓	

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Sustainable Urban Form	Developers, consultants, builders, municipal staff, CA staff and media	Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings – Rec 3 Land and Resource Use	CaGBC on-line resources and workshops on LEED program for homes and buildings	4-11* **Green Building Councils**, TRCA, municipalities, BILD, Canadian Urban Institute, NGOs, media - Continue to offer and expand programming relating to LEED (Leadership in Energy and Environmental Design) 4-12* **TRCA** – Host a workshop for municipal and TRCA staff, developers and consultants to focus on implementation of new watershed plan policy directions on sustainable urban form (see Section 1 – Policy for more information)	✓ ✓	
Sustainable Purchasing Practices for homeowners	Home buyers and media	Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings – Rec 3 Land and Resource Use	Archetype Sustainable House offers tours to the public and corporate groups to view the new technologies used in this demonstration house. Kortright Centre Green Home Show Green Living Show in Toronto	4-13* **Green Building Councils**, TRCA, municipalities, BILD, NGOs, media - continue to provide opportunities for the public and media to see and learn about sustainable home products and services.	✓	✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Spills Prevention	industry	Prevent and remediate pollution – Rec 6 Caring for Water	City of Toronto Spills Response program Municipal Emergency Management Plans (verify with municipal TAC) RAP seminar on Spills Management in the GTA	4-14 **TRCA,** with support from industry leaders, municipalities and/or MOE - Develop an education strategy for spills prevention with targeted outreach to industrial sectors (trucking, waste disposal, construction). Key messages - commercial and industrial developments should have emergency spills capture systems that do not connect to a watercourse. These developments should have structural controls for spills management in place before operations commence (e.g. drain protection, oil and grit separator, on-site clean-up equipment, regular maintenance of transport vehicles, sewer shut off valves; Specific response plans should be implemented to handle and/or minimize substances that are known to have negative impacts on the aquatic ecosystems.	✓	✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
4.2. Sustainable urban landscapes						
Lot level sustainable practices	Homeowners and renters, garden contractors	Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings - Rec 3 Land and Resource Use Prevent and remediate pollution – Rec 6 Caring for Water Manage flood risks – Rec 2 Caring for Water Improve ecological function of the entire urban landscape, from the natural areas to the built areas, by increasing vegetation cover through better urban design and land management – Rec 1 Terrestrial System Regenerate and enhance the quality of the natural system by increasing natural cover quantity, improving patch size and shape, and managing invasive species – Rec 3 Terrestrial System Mitigate the impact of human activities on	TRCA's Healthy Yards Program provides free adult workshops on two main topics, Organic Lawn Care and Native Plants. Workshops are facilitated by TRCA in collaboration with municipal partners in Toronto, York, Durham and Peel Regions. Participants are introduced to the topic through a 45 minute presentation by a local expert. Native plants and organic lawn care products are made available for purchase along with various resource materials and samples / give aways. A workshop survey and follow up survey gauge both the participant's response to the workshop and any resultant behaviour changes at home to adopt and maintain sustainable lawn and garden practices. TRCA's Multicultural Environmental Stewardship programs engage new Canadians across Toronto, York and Peel Regions in a variety of outreach education and stewardship activities and outings. MES programs include: ► River Offerings Pilot Project ► ESL LINC in class presentations ► Environmental Experiences Subsidy Program ► New Canadian Work Experience Program ► New Canadian Consultation ► Providing translation services as required and translated outreach materials Markham Green Neighbourhoods includes communities in the Don Watershed and is delivered by TRCA, Markham & community	4-15 **Various partners** - Continue existing programs **4-16*** **TRCA**, municipalities, NGOs – Develop a strategy for co-ordination of outreach programs and a lot level marketing campaign (with residential, business and institutional lands focus), as part of the sustainable neighbourhood retrofit action plans (See Section 2 Regeneration). Pilot projects at Warden Woods Residential area and Mud Creek concept sites. Consider feasibility of expanding GTA wide. 4-17 **TRCA**, municipalities - Undertake a study to evaluate success of current communication methods. 4-18 **TRCA**, municipalities – Develop or revise existing education materials for care and maintenance of lot level stormwater controls on private lands and promote the aesthetic value of these features in new developments. **4-19*** **TRCA –** Develop and pilot outreach programs for encroachment on valley lands ► residential – start with residential areas associated with the Warden Woods, Mud Creek, and Maple Nature Reserve concept sites, and Taylor/Massey Creek from Ellesmere to Lawrence ► Industrial – start with an extension of Langstaff EcoPark to the north, Garthdale Ravine, golf courses and businesses north of Hogg's Hollow and near Sunnybrook Park	✓ ✓ ✓ ✓ ✓	✓ ✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
		natural areas by developing a broader understanding of ecosystem health and a commitment to stewardship among the public and businesses – Rec 4 Terrestrial System	partners. Richmond Hilll's Healthy Yards program offers subsidized native plant and organic lawn care kits to local residents along with information packages to assist with implementation. Toronto Wet Weather Flow Stewardship and Outreach Program funds community projects including naturalization, stewardship, and public outreach. Toronto's Live Green Program supports community animators to foster sustainable practices at the local level. Local Enhancement and Appreciation of Forests (LEAF) offers backyard tree planting and naturalization program; started in Toronto and is now being piloted in Markham, in partnership with the Town and York Region. TRCA Natural Neighbours fact sheet provides information on problems caused by encroachment on public lands. Riversides – Toronto Homeowner's Guide to Rainfall			

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Terrestrial Invasive Alien Species	Homeowners, volunteer groups	Regenerate and enhance the quality of the natural system by increasing natural cover quantity, improving patch size and shape, and managing invasive species – Rec 3 Terrestrial System Mitigate the impact of human activities on natural areas by developing a broader understanding of ecosystem health and a commitment to stewardship among the public and businesses – Rec 4 Terrestrial System	Municipal invasive species control programs (e.g., City of Toronto's Dog Strangling Vine program, Asian long-horned beetle program, etc.) Also see section 4.1 for more programs.	4-20 **CA's**, municipalities, NGOs, Canadian Food Inspection Agency – Continue to co-ordinate the development of educational materials on invasive species removal techniques and engage volunteer groups to help in monitoring and removal.	✓	

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Pollution Prevention	Youth and adult groups, general public	Prevent and remediate pollution – Rec 6 Caring for Water	Yellow Fish Road™ Program teaches people that whatever goes down the street sewer ends up in rivers and lakes. Yellow fish symbol is applied beside the storm drain, door hanger literature distributed to the surrounding homes. Watershed on Wheels programs on water quality, stream study and wetlands. Aquatic Plants Program that engages schools in growing and planting aquatics for wetland restoration. Educational component to these field trips highlight biodiversity, water quality and wetlands.	4-21 **TRCA**, school boards - Continue existing Yellow Fish Road™ Program 4-22**-TRCA –** Develop a targeted program on fish habitat conservation in the Don, featuring redside dace, rainbow trout and brook trout for delivery in schools and at public events near the Upper East Don River and Patterson Creek. (Suggested schools: O.M. MacKillop PS, Pleasantville PS, Silver Pines PS, Ross Doan PS, Alexander MacKenzie HS, Roselawn PS, St. Anne CES, St. Mary Immaculate, St. Charles Garnier). This could be delivered as part of Watershed on Wheels programming. 4-23 **TRCA** – incorporate fish habitat activities into local delivery of the Aquatic Plants Program where appropriate. 4-24 **TRCA** - Implement Don River Water Wise Stewardship Project - Wetlands for Water Quality over two years, engaging 800 students in wetland restoration activities and interactive games to enhance their understanding of the connection between their actions and effects on water quality. Restoration activities to take place at E.T. Seton Park and Taylor Massey Creek or another applicable site	✓ ✓ ✓ ✓	

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Environmental Stewardship for Businesses and Institutions	Businesses & institutions	Implement source, conveyance and end-of-pipe stormwater management facilities (retrofit and new) and maintain existing stormwater facilities across the watershed – Rec 1 Caring for Water Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings – Rec 3 Land and Resource Use	TRCA is initiating an eco-industrial park project in partnership with the GTAA (Greater Toronto Airport Authority) in the Etobicoke and Mimico Creek watersheds OCETA –TRCA partnership for P2 and energy conservation projects.	4-25* **Municipalities**, TRCA - Implement demonstration projects for stormwater management retrofit, naturalization and other sustainable practices with the business and institutional landowners (See also sustainable neighbourhood retrofit project in Section 2 and healthy yards outreach programs and marketing campaign above). 4-26 **TRCA**, Leaside Business Park Association, City of Toronto - develop an eco-business park model to assist companies in the Leaside Business Park improve their financial and environmental performance. The Leaside Business Park is located along the Don River and is bounded by Eglinton Avenue East to the north, Beth Nealson Drive to the east, Overlea Boulevard to the south and Laird Drive to the west. 4-27 **TRCA** - Build upon current corporate contacts and engage in restoration and/or nature interpretation activities in the Upper Don. Refer to Don HIP and Don Concept sites for areas of focus.	✓ ✓ ✓	

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Salt Management and Winter Maintenance	Private and public land owners and managers, businesses, contractors	Prevent and remediate pollution – Rec 6 Caring for Water	Municipal Salt Management Plans	4-28 **TRCA**, municipalities, NGOs - Form multi-agency partnerships to develop winter maintenance outreach and education programs for individuals, public properties, and contractors.	✓	
				4-29 **TRCA,** municipalities - Establish a voluntary contractor certification program for salt management.	✓	
				4-30 **TRCA,** municipalities - Encourage adoption of technologies and methods for optimizing salt applications (dry, pre-wet, direct liquid), and use of alternatives to salt for winter maintenance, where appropriate.	✓	
				4-31 **TRCA –** Incorporate salt reduction practices into the Healthy Yards program. Messaging to focus on lot level options (i.e. alternatives to conventional salt products)	✓	
Local Food Security and Community Gardens	General public, community groups, neighbourhood associations, businesses	Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings – Rec 3 Land and Resource Use	TRCA is introducing an urban agriculture program at Kortright's Living City Campus to raise public awareness of the benefits of local foods. City of Toronto Community Garden Program facilitates community garden development in parks and open spaces in the City The Toronto Food Policy Council partners with business and community groups to develop policies and programs promoting food security.	4-32 Municipalities, NGOs, TRCA - Support local food and urban agriculture by building partnerships with groups already promoting community gardens e.g., parks and public lands as locations	✓	✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
4.3. Resource Use						
Water Supply and Conservation	All sectors	Increase water efficiency and conservation – Rec. 8 Land and Resource Use	York Region's *Water for Tomorrow* program offers free garden visits, low-cost rainbarrels and a series of free workshops on various topics related to water efficient gardening. Businesses and schools are also targeted for outreach and rebates through the program City of Toronto *Water Efficiency Program* offers free garden visits, seminars, rebates for implementation of select water saving technologies (i.e. low flow toilets). TRCA's Healthy Yards program – see entry under 4.2 – lot level sustainable practices	4-33 **Municipalities,** TRCA – Continue existing programming and expand to include some of the following, as needed: ▶ water efficient native plants for landscaping, ▶ rain-harvesting, ▶ monitoring of water use rates, ▶ pricing incentives, ▶ recommendations from *Action Plan for Sustainable Practices* to increase participation, ▶ partnerships with schools and community groups.	✓	✓
Energy and Waste	All sectors	Reduce energy use and increase non-fossil fuel alternatives – Rec. 9 Land and Resource Use Reduce waste and use waste as a resource- Rec. 10 Land and Resource Use	Greater Golden Horseshoe Mayors' Megawatt Challenge Toronto's Energy Efficiency and Conservation Strategy Toronto Green Standard Archetype Sustainable House Demonstration) and renewable energy workshops at Kortright. Renewable Energy Road Map (Ontario wide) Municipal waste reduction and management programs Ontario EcoSchools is an environmental education program for grades 1-12 that helps students develop ecological literacy while engaged in practices to become environmentally responsible citizens. Developed and run by school boards, Ontario EcoSchools also helps improve school	4-34 Municipalities, school boards, utilities, BILD, TRCA - Continue with existing programs	✓	
				4-35 **Municipalities**, utilities, BILD, TRCA - Promote the development of Municipal Energy Management Plans and where appropriate District Energy Plans	✓	
				4-36* **TRCA,** Municipalities, school boards, utilities, BILD, NGOs - Develop an outreach program based on the results from the Renewable Energy Road Map to promote the uptake of renewable energy technologies	✓	
				4-37* **TRCA**, School boards - Promote the EcoSchools program to all schools in the watershed	✓	
				4-38 **Municipalities**, TRCA, utilities, BILD, Promote the use of standards such as Energy Star for new homes and LEED for all new buildings	✓	✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
			building operations to reduce environmental impacts. TRCA has implemented this program at its 5 'school' facilities.			
4.4. Interpretation and Education						
Terrestrial and Aquatic Heritage	Local residents, general public, school students, park and greenspace visitors	Develop education and stewardship programs to address invasive species awareness (round goby, common carp, rusty crayfish) and the potential for invasive species transfer between watersheds (e.g., bait fish transfer between Humber and Don rivers), the role of fish as indicators of riverine health, and best management practices to protect and regenerate the aquatic system (especially riparian plantings) targeted at landowners and land maintenance staff - Rec 8 Aquatic System Mitigate the impact of human activities on natural areas by developing a broader understanding of	Existing programs include: ▶ York Children's Groundwater Festival ▶ Watershed on Wheels provides fully sponsored in class (at the school) programs to students in grades 1-8. Full and half day programs are offered with a maximum capacity of 1 school per day and approx. daily max. of 120 students. ▶ TRCA Aquatic Plants Program engages schools in growing and planting aquatics for wetland restoration. ▶ Town of Richmond Hill Walks on the Wild Side program and proposed Ecological Centre at Oak Ridges Community Centre. ▶ Invading Species Awareness Program (Ont. Federation of Anglers and Hunters and Ont. Min. of Natural Resources) raises awareness of invasives, monitors spread using volunteer reporting and supports research on impacts and control measures.	4-39 **TRCA, municipalities** - Continue existing programs. Also see Section 7 Monitoring for more on educational benefits of volunteer monitoring. 4-40 **TRCA**, municipalities, MNR - Install signage about redside dace in parks and greenspaces on Patterson Creek 4-41 **TRCA**, Municipalities, MNR/OFAH - Install signage/provide programming to alert public to aquatic invasive species threats and actions they can take to stop their spread. Target sites used by local anglers (i.e. G Ross Lord Reservoir, Mill Pond, Don mouth) with messaging around bait fish transfer. 4-42 **TRCA**, MNR, OFAH - Koi fishing derby to reduce invasive population in the Don. 4-43 **TRCA** - Engage public in restoration activities at a selection of concept sites and sites outlined in the Don HIP	✓ ✓ ✓ ✓ ✓	 ✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
		ecosystem health and a commitment to stewardship among the public and businesses – Rec 4 Terrestrial System		4-44 **TRCA**, Collaborate on delivery of interpretive walks throughout the watershed	✓	
Natural and Cultural Heritage	Local residents, general public, school students, park and greenspace visitors Public, school students	Develop and support existing active and participatory programs to increase awareness of cultural heritage and living culture – Rec 4 Cultural Heritage Protect and enhance the quality and extent of public greenspaces throughout the watershed, and, in particular, in areas of increasing population density and redevelopment – Rec 1 Nature-based Experiences Promote the natural and cultural heritage of the watershed and engage the community in their protection, regeneration, and celebration – Rec 3 Nature-based Experiences Establish a comprehensive communication plan with Aboriginal (First Nations	Don River signage installed in City of Toronto Adopt-a-Park programs in Vaughan, Markham, Richmond Hill Natural Heritage Stewardship Program for local natural areas City of Toronto Community Stewardship Program City of Toronto Archaeological Master Plan Ontario Heritage Trust; provincial heritage plaque system Canadian Heritage site signage Municipal Heritage signage programs Doors Open events Todmorden Mills Heritage Museum and Art Centre Richmond Hill Heritage Centre Richmond Hill Archaeological Master Plan TRCA Multicultural Environmental Stewardship Program – Environmental Experience Program TRCA Family Nature Events series TRCA's Boyd Archaeological Field School Ontario Association of Professional Archaeologists is leading an initiative to develop a communication	4-45 **Municipalities**, TRCA - Expand signage program to all municipalities 4-46 **TRCA** – work with municipal and community partners to develop a "Don River Learning Trail" **4-47*** **Municipalities,** TRCA - Promote existing park stewardship programs in parks near UGCs. Enhance current programs with support for volunteer naturalization projects, invasives removal, habitat creation work, monitoring and cultural heritage awareness. 4-48 **Heritage museums**, TRCA Archaeology section – continue existing programming and seek ways to incorporate more Don-specific content where appropriate. 4-49 **TRCA -** Work with municipalities to complete formal naming process for all watercourses in Don River system. 4-50 **TRCA,** in partnership with municipalities and heritage museums – incorporate Don sites into existing stewardship programs to enhance awareness and interest in cultural heritage such as Environmental Experience Program and Family Nature Events series 4-51 Create new opportunities for themed experiences about past peoples, settlement	✓ ✓ ✓ ✓ ✓ ✓	✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Natural and Cultural Heritage ***continued***		and Métis) groups and other more recent descendant populations – Rec 2 Cultural Heritage Fill gaps in archaeological knowledge - Rec 3 Cultural Heritage Develop and support existing active and participatory programs to increase awareness of cultural heritage and living culture – Rec 4 Cultural Heriage	plan.	history and present cultures, including industrial heritage, guided by cultural representatives, including educational resources about local cultural and natural heritage highlights for display at local festivals and events or permanent installation at suitable locations (e.g., associated with the Don Learning Trail). 4-52 Build partnerships to provide learning opportunities and increase awareness of living culture, such as photography, drawing, painting and performance arts. 4-53 Municipalities -Identify candidate Heritage Conservation Districts, including Cultural Heritage Landscapes and areas having multiple properties with cultural significance, for designation under the Ontario Heritage Act, in consultation with Municipal Heritage Boards. 4-54 **TRCA -** Provide expertise and resources to local ethnic groups to establish forms of public recognition of their culture (past and present) in the watershed, including First Nations groups, and the descendents of German Mils settlers as well as other 19th - 21st century ethnic communities and influences. 4-55 TRCA Develop a toolkit of interpretive materials (static and mobile signage) that promote links between human and natural	✓ ✓ ✓ ✓	✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
				heritage (e.g., interpretive signs about the influences of human activities on historic and current environments). 4-56 Municipal heritage committees - Develop and install signage for communities, streets and public buildings that includes historic community names. Create trail guides/maps and public art that incorporates local cultural heritage. 4-57 Municipalities Build partnerships to enhance "living culture" interpretive and tourism opportunities in the watershed (e.g., Identify architectural assets in need of restoration and look for opportunities to revitalize heritage properties by forming partnerships to increase revenue and find adaptive re-use, such as event facilities, restaurants, community centres, and art centres/performance spaces.) ***Also see Section 2 – Regeneration for related next steps***	✓ ✓	✓
Aboriginal Heritage	Public, school students	Establish a comprehensive communication plan with Aboriginal (First Nations	Ontario Association of Professional Archaeologists is leading an initiative to develop a communication plan.	**4-58* TRCA -** Develop a communications plan in partnership with Aboriginal groups and descendent populations including:	✓	✓

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Aboriginal Heritage *(continued)*		and Métis) groups and other more recent descendant populations – Rec 2 Cultural Heritage Fill gaps in archaeological knowledge - Rec 3 Cultural Heritage Develop and support existing active and participatory programs to increase awareness of cultural heritage and living culture – Rec 4 Cultural Heriage	TRCA's Boyd Archaeological Field School	▶ Identification of key groups and contacts ▶ Partnership opportunities for interpretation and awareness programs, viewing of artifacts, program development, education and events ▶ A protocol for consultation with recognized Aborignal groups. 4-59 TRCA - Determine appropriate teaching sites for archaeological field schools at a Pre-Contact site, with Aboriginal consultation and approval, and on a Post-Contact site, with community consultation and approval, partnered with the TRCA Archaeology Program, the Ontario Heritage Trust, the Ontario Archaeological Society, local school boards, and other stakeholder organizations. 4-60 TRCA - Identify additional opportunities for TRCA's archaeological field school to contribute to the new (2006) Ontario school curriculum on Aboriginal and pioneer life and develop a sustainable funding plan. **4-61*** TRCA – Incorporate experiential learning about past people's as a component to existing public events such as tree plantings, festivals and family nature events	✓ ✓ ✓	

Table 4.1 Stewardship and Education Projects

1-1* = Top priority project

Theme	Target Audience	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
4.5. Recognition Programs						
Sustainable Practices	Residents, businesses, agencies and institutions	Implement sustainable urban form and adopt green development standards for neighbourhoods, sites, and buildings – Rec 3 Land and Resource Use Prevent and remediate pollution – Rec 6 Caring for Water Protect and enhance the quality and extent of public greenspaces throughout the watershed, and, in particular, in areas of increasing population density and redevelopment – Rec 1 Nature-based Experiences Mitigate the impact of human activities on natural areas by developing a broader understanding of ecosystem health and a commitment to stewardship among the public and businesses – Rec 4 Terrestrial System Implement source, conveyance and end-of-pipe stormwater management facilities (retrofit and new) and maintain existing stormwater facilities across the watershed – Rec 1 Caring for Water	Federation of Canadian Municipalities awards for municipalities Environmental garden awards (Markham, Toronto, Richmond Hill) Canadian Institute of Planners Ontario Professional Planners Institute Communities in Bloom Green Building Council Landscape Ontario	4-62 **Various partners** - Continue existing recognition programs and ensure that Don Watershed projects are profiled where appropriate. Consider establishing “leaders in sustainable practices” award in co-operation with high profile stakeholders and in co-ordination with a business leaders peer outreach program.	✓	✓

5. Operations and Maintenance

In the heavily urbanized context of the Don Watershed, public infrastructure operations and maintenance play a key role in achieving the goals of the watershed plan. Major parks and ravines in the watershed are important components of the terrestrial natural heritage system and sources of nature-based recreation for the watershed's many residents. Major infrastructure projects such as the Don River and Central Waterfront Project addressing the impacts of combined sewer overflows and the planned upgrades to the North Toronto Sewage Treatment Plant will be of great benefit to the watershed's water quality. Flood protection works such as the G. Ross Lord Dam and the work proposed for the Lower Don lands will protect the safety and property of thousands of residents and businesses in the Don,

In keeping with the strategic theme of taking advantage of every opportunity to make gains in water balance and natural heritage, property managers responsible for operations and maintenance of public property, such as roads, parks and infrastructure, or private property such as golf courses, cemeteries or commercial/industrial lots, should consider ways they can incorporate the Watershed Plan's directions into their ongoing practices and programs. For example, naturalization schemes could be adopted as part of landscaping practices and thereby contribute to improved lot level water management and the achievement of our terrestrial natural heritage goals.

Maintenance recommendations are noted within many of the strategies; however there are three significant recommendations for maintenance programs. **First**, our water strategies underscore the need for municipal operation and maintenance programs for stormwater management infrastructure, including the clean out of accumulated sediment in ponds. All municipalities in the Don need to assign priority to the development and implementation of stormwater facility maintenance. Routine maintenance activities may present opportunities to optimize the performance of these stormwater management facilities through minor adjustments in operation, while larger maintenance projects may represent cost efficient opportunities to undertake major retrofit projects to improve facility performance.

The **second** new operations recommendation relates to major parks and public lands in the Don Watershed. The nature-based experience strategies identify the need for operational agreements for these lands, particularly with respect to responsibility and funding for operations and maintenance. Funding formula and commitments to support maintenance and reinvestment in major parks and public lands will be key avenues to address a number of Don Watershed Plan recommendations.

Finally, flood and erosion risks are addressed as part of the implementation of the watershed plan. Flood reduction plans are recommended before intensification or redevelopment in FVA's. Opportunities to align flood remediation with stormwater quality improvements should be sought to optimize benefits from a single project.

Table 5.1 sets out implementation projects for these and other operations, management and maintenance issues.

Table 5.1 Operations and Maintenance Improvement Projects

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Stormwater Infrastructure	Continue to develop and implement operation and maintenance programs for stormwater management infrastructure (e.g., ponds, catchbasins, swales, oil-grit separators and retrofit projects) – Action under Rec 1 – Caring for Water Prevent and remediate pollution – Rec. 6 – Caring for Water	Performance monitoring undertaken by Richmond Hill has identified "recommissioning opportunities" (i.e., techniques to optimize performance of existing SWM ponds). In 2008, approved a 10 year capital project for maintenance and improvements. Markham SWM Program – has assessed all ponds and created database (bathymetric survey, age, sediment depth, ponds which are >50% full) Southern Ontario Municipal Discussion Group focus on storm water management infrastructure operations and maintenance programs Toronto is undertaking assessments of storm, sanitary and combined sewer infrastructure in the City as part of the Don River and Central Waterfront Project (Don and Waterfront Trunk Sewers and Combined Sewer Overflow Control Strategy)	**5-1* Municipalities** - Formalize stormwater infrastructure maintenance programs to monitor the performance of existing stormwater management ponds, conduct maintenance and sediment clean-out when required, minimize chemostratification and high concentration salt discharge and undertake "recommissioning" through minor modifications to optimize performance with respect to water quality and erosion control.	✓	✓
			5-2* Municipalities – Investigate innovative financing mechanisms such as stormwater management fees (municipal water and sewer bill) and credits for property owners, to help fund stormwater maintenance programs and retrofit projects.	✓	✓
			5-3* Municipalities in co-operation with TRCA should: ▶ Develop guidelines for monitoring, maintenance, reconstruction and recommissioning of municipal SWM facilities. ▶ Conduct assessments of sediment accumulation in SWM ponds and develop prioritized lists of clean-out projects. ▶ Undertake a study to investigate simpler techniques for carrying out pond clean outs, sediment disposal alternatives and develop cost estimates for overall SWM facility maintenance.. ▶ Initiate a study that evaluates the benefits of biodegradable anionic polymers in reducing the cost of sediment removal from stormwater ponds and wetlands.	✓	✓

Table 5.1 Operations and Maintenance Improvement Projects

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
			5-4 **Municipalities** - Undertake retrofits/major reconstruction of conveyance and end-of-pipe stormwater measures as part of road reconstruction projects to provide improved water quality and quantity control.	✓	✓
			5-5 **Municipalities**, TRCA – Review and implement snow disposal and road salt management plans, with special consideration for roads on vulnerable aquifer recharge areas on the Oak Ridges Moraine, and adopt technologies and practices for optimizing salt applications and using alternatives, where appropriate.	✓	✓
Nature-Based Recreation Facilities and Lands	Protect and enhance the quality and extent of public greenspaces throughout the watershed, and, in particular, in areas of increasing population density and redevelopment – Rec. 1 – Caring for Community, Nature-based Experiences Expand the network of formal trails to connect key destinations and improve connectivity with neighbouring watersheds, the Oak Ridges Moraine, and the waterfront – Rec. 2 – Caring for Community, Nature-based Experiences	There are some individual plans for nature-based recreation facilities e.g.,: ▶ *Maple Nature Reserve Master Plan and Concept Site Plan* ▶ *Crothers' Woods Trail Management Strategy* ▶ *Evergreen at the Brick Works Master Plan* ▶ *MacMillan Property Nature Reserve Plan (TRCA), Property Management Plan (NCC), Draft HIP* Agreement between TRCA and City of Toronto for operation and maintenance of TRCA-owned valleylands in Toronto. Municipal road salt and snow disposal plans TRCA trail user surveys (see Section 7)	5-6 **TRCA, municipalities** - Continue to implement existing plans for individual areas.	✓	
			5-7 **TRCA,** municipalities - Establish a multi-partner program with long term funding commitments and a funding formula to support maintenance and reinvestment in existing properties as well as further expansion and development of the system.	✓	✓
			5-8 Municipalities, TRCA **–**Develop regeneration plans for greenspaces to ensure protection of the integrity of greenspaces and natural areas, with consideration for growth plan population density projections and anticipated intensification of use. High priority sites are the Don Valley Brick Works and other parks near the provincially designed urban growth centres	✓	✓
			5-9 Municipalities, TRCA – Develop a tourism strategy around the Don Learning Trail (see Section 2) that promotes the natural and cultural heritage of the watershed and connects users to current and future tourist sites (e.g. Ontario Science Centre, Don Mouth)	✓	✓

Table 5.1 Operations and Maintenance Improvement Projects

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Other Public & Institutional Properties *(e.g., parks, community centres, schools, churches, cemeteries, golf courses, hydro corridors)*	Improve ecological function of the entire urban landscape, from the natural areas to the built areas – Rec. 1 – Caring for Nature, Terrestrial System Protect and enhance the quality and extent of public greenspaces throughout the watershed – Rec. 1 – Caring for Community, Nature-based Experiences	Some municipalities have environmental management programs for their properties e.g., City of Toronto's environmental code for parks and community centres, Richmond Hill's Natural Heritage Strategy for parks Some golf courses are participating in the Audubon Cooperative Sanctuary Program or similar programs to incorporate environmental considerations into management activities. Municipal tree protection by-laws Markham Trees for Tomorrow Program City of Toronto Forest Inventory and Urban Forest Effects (UFORE) project	5-10 **TRCA** - Facilitate technical transfer among public and institutional landowners (e.g., regarding naturalization, invasive species, Canada geese, integrated pest management, stormwater management, pollution prevention etc). **5-11 Municipalities**, TRCA – Develop urban forest plans based on UFORE model data, addressing canopy cover, conditions of street trees, yard trees and trees in parks and ravines and identifying priority areas for regeneration and maintenance.	✓ ✓	
Flood and Erosion Risks	Manage flood risks – Rec. 2 – Caring for Water	The GTA Flood Program provides services in four areas: ▶ Program delivery/administration ▶ Forecasting ▶ Communications ▶ Flood operations Flood and Erosion Control Programs (TRCA) Markham's Watercourse Erosion Restoration Implementation Program Toronto's stream restoration priorities under the Wet Weather Flow Management Master Plan Markham is undertaking an inventory of at risk infrastructure.	5-12 **TRCA** – Update the GTA Flood Program to achieve compliance with Provincial Guidelines (Ontario Flood Forecasting and Warning Implementation Guidelines for Conservation Authorities and MNR), when available. 5-13 **TRCA** – Continue: ▶ flood forecasting and warning; ▶ real time precipitation and stream gauge network; ▶ flood vulnerable site database response model; ▶ upgrading engineered flood plain mapping where only estimated flood plain mapping is available; ▶ maintaining flood control infrastructure, including channels and G. Ross Lord Dam. **5-14* TRCA,** municipalities – undertake a flood risk reduction study to improve the hydraulic capacity of road and rail crossings in flood vulnerable areas (see **Figure**	✓ ✓ ✓	✓ ✓

Table 5.1 Operations and Maintenance Improvement Projects

1-1* = Top priority project

Theme	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Flood and Erosion Risks (continued)		Toronto's basement flooding studies Lower Don River West Remedial Flood Protection Project Don Mouth Naturalization and Port Lands Flood Protection Project	**1.8**). The study should identify a prioritized remediation plan.		
			5-15 TRCA, municipalities – Undertake an annual proactive program of EA projects to remediate flood vulnerable sites, as per the above noted remediation plan, incorporating opportunities for net gain in achieving the objectives of the watershed plan	✓	✓
			5-16* Toronto, TRCA - Prepare flood emergency response plan for SPAs and flood vulnerable areas, including an inventory of hazards, prioritization, and emergency response protocol. Complete in coordination with Comprehensive Emergency Response Plans.	✓	✓
			5-17* TRCA - Track advances in prediction of regional and local climate change and re-assess local flood risks and management measures.	✓	✓
			5-18 TRCA, **municipalities** – Establish and maintain an inventory of infrastructure "at risk" of erosion and conduct regular monitoring. Identify a prioritized remediation plan.	✓	✓

6. Enforcement

Public education and awareness must be complemented by rigorous and co-ordinated enforcement. The Don River Watershed Plan has identified that the enforcement capacities of the agencies (e.g., TRCA, municipalities, MNR, MOE, and DFO) should be increased. They should:

- identify and secure necessary resources;
- investigate means to improve partnering among relevant agencies;
- post signage using universal symbols consistent with Ontario trespass laws (e.g. The Trespass to Property Act, 1980), in multiple languages as appropriate, to identify permitted and non-permitted activities;
- promote public awareness of who to call and facilitate referrals of mis-directed calls;
- adopt protocols for feedback to the public on actions taken;
- support enforcement of key by-laws related to issues in the Don watershed (e.g. Ravine, dumping, encroachment, dogs off leash, park use by-laws).

Table 6.1 summarizes implementation actions for enforcement.

Table 6.1 Enforcement Actions

1-1* = Top priority project

Theme	Target Audience	Enforcement Responsibility (lead in bold)	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs	Yrs 1 - 5	Yrs 6 - 10
Fish	Anglers Landowners	**DFO,** MNR, TRCA, and other partners	Improve Stream Form – Rec. 5 – Caring for Water	Inter-jurisdictional Compliance Protocol for Fish Habitat and Associated Water Quality (Ontario)	6-1 Continue existing program	✓	✓
Section 28 of CA Act	Private land owners and municipalities	**TRCA**	Improve erosion & sediment control and site regeneration – Rec. 4 – Caring for Water	Inspection and compliance activities (TRCA)	6-2 – **TRCA,** Conservation Ontario, MNR – Advocate for legislative amendments to the CA Act or the ability for CAs to use other existing legislative tools that would promote regulatory compliance and cost recovery to the CA. **6-3 TRCA,** Municipalities - seek opportunities to coordinate better environmental compliance through all available municipal legislative tools; explore changes to construction practices, site management and adaptive environmental monitoring. **6-4 TRCA** - revise fee structures to discourage non-compliance and recover staff costs for dealing with infractions. Develop standard set of permit conditions that address both permit compliance and the potential for non-compliance issues.	✓ ✓ ✓	

Table 6.1 Enforcement Actions

1-1* = Top priority project

Theme	Target Audience	Enforcement Responsibility (lead in bold)	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs	Yrs 1 - 5	Yrs 6 - 10
Municipal by-laws and regulations including: erosion & sediment control, tree cutting, topsoil & land disturbance, dumping, ravine, trespassing, parks, encroachment	Public and private landowners Developers Trail and park user groups	**Municipalities,** DFO**,** TRCA	Improve erosion & sediment control and site regeneration – Rec. 4 – Caring for Water Protect and enhance the quality and extent of public greenspaces throughout the watershed – Rec. 1 – Nature-based experiences Mitigate the impact of human activities on natural areas by developing a broad understanding of ecosystem healthy and a commitment to stewardship among public and businesses – Rec. 4, Caring for Nature - Terrestrial	Implementation of Greater Golden Horseshoe Conservation Authority Erosion and Sediment Control Guidelines Existing municipal by-law enforcement staff	**6-5* TRCA,** municipalities Develop inter-jurisdictional compliance protocol for each enforcement theme within the Don watershed. • Identify gaps in regulatory capability and capacity • Identify options for addressing gaps • Develop resources and implementation plan	✓	

Table 6.1 Enforcement Actions

1-1* = Top priority project

Theme	Target Audience	Enforcement Responsibility (lead in bold)	Don Watershed Plan Recommendation	Existing Project or Program	Next Steps, Projects and Programs	Yrs 1 - 5	Yrs 6 - 10
Property Signage	Public	**Municipalities,** landowners	Protect and enhance the quality and extent of public greenspaces throughout the watershed – Rec. 1 – Nature-based experiences Mitigate the impact of human activities on natural areas by developing a broad understanding of ecosystem healthy and a commitment to stewardship among public and businesses– Rec. 4, Caring for Nature - Terrestrial		6-6 **municipalities**, TRCA – review signage on public lands to ensure permitted uses/by-laws are signed to allow for enforcement as needed. **6-7 – CN Rail, municipalities –** properly sign and enforce rules around rail crossings along trails in the Don.	✓ ✓	

7. Monitoring and Research

Ongoing monitoring will be essential to identify whether the management strategies in the *Don River Watershed Plan* are effective and adapt them if necessary. For example:

- Are the management measures performing as designed?
- How are environmental conditions responding?
- Do we need to change our strategies and if so, how?

Evaluation of Innovative Technologies

TRCA's Sustainable Technologies Evaluation Program (STEP) is described in Chapter 5 of the *Don River Watershed Plan*, although the program addresses other monitoring besides water (e.g., air). The *Watershed Plan* recommends long-term support to ensure that it continues to provide a valuable forum for co-ordinated performance monitoring and evaluation among a number of agencies and private partners (see **Table 7.1**).

Ambient Watershed Conditions – Long Term Trends

The Regional Watershed Monitoring Program (RWMP), led by TRCA in partnership with its member municipalities and other monitoring groups, provided a substantial information base for the *Don River Watershed Plan*. The RWMP was developed based on regional and watershed scales and to the extent possible at the subwatershed scale. During the preparation of the watershed plan, it was found that additional information is needed at both the watershed and sub-watershed scales to fully understand systems in the Don watershed (see **Table 7.2**).

Adaptive Management

The *Don River Watershed Plan* recommends an adaptive management program that will use feedback from monitoring activities to make adjustments to policies, plans and programs to ensure that our goals, objectives and targets are met (see **Table 7.3**).

Table 7.1 Evaluation of Innovative Technologies

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Sustainable Technologies Evaluation Program	Test, evaluate and promote clean water practices and technologies in the areas of stormwater management, stream restoration, water conservation, community wastewater treatment, and construction sediment control, using the Sustainable Technologies Evaluation Program (STEP): ▶ Commit long term support to the TRCA's Sustainable Technologies Evaluation Program (STEP) as a forum for co-ordinated performance monitoring and evaluation among a number of agencies and private partners ▶ Develop policies, guidelines and design standards/specifications for new technologies such as green roofs and permeable pavement, and assess barriers to implementation. ▶ Arrange for third-party verification of technology performance. ▶ Implement and evaluate innovative technologies using pilot projects ▶ Communicate results through seminars and publications. - Actions under Rec. 7 – Caring for Water	**7-1*** **TRCA and partners** - Identify technologies that show promise and monitor their performance, including operations and maintenance implications, using Sustainable Technologies Evaluation Program, i.e.: • rainwater collection and re-use • permeable pavement • infiltration chambers • engineered media to remove phosphorus • groundwater and soil contamination risk with infiltration technologies • long term performance and maintenance costs of any green technology • solar, wind, ground source heating and cooling systems **7-2*** **TRCA and partners** - Perform life cycle cost assessments for innovative techniques relative to conventional alternatives. 7-3 **TRCA** - Develop checklist of considerations for the siting and review of ground source heating and cooling systems.	✓ ✓ ✓	✓ ✓
Innovative Urban Design	Monitor the effects of new and retrofitted urban development design and stormwater management practices and implement adaptive management where necessary, including: ▶ Require developers to undertake or contribute to compliance monitoring and enforcement to ensure approved stormwater management facility design	**7-4*** **TRCA,** municipalities, MEI, BILD - Convene discussions with MEI and determine mechanisms for requiring developers in Urban Growth Centres (under the Growth Plan and municipal official plans) to monitor sustainable technologies and other innovative design features to ensure performance targets are met.	✓	

Table 7.1 Evaluation of Innovative Technologies

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Innovative Urban Design *(continued)*	performance targets are met. ▶ Conduct monitoring studies at the site and subwatershed scales to determine the extent to which community design standards and innovative stormwater management practices mitigate the cumulative effects of urban development on the water balance and aquatic systems. ▶ Evaluate the effects of new and retrofitted stormwater management practices on baseflow and water quality and revise the management recommendations and criteria of this plan as necessary. ▶ Encourage developers and municipalities to partner in monitoring programs at the "block" scale, and incorporate adaptive management in the planning process (e.g., letter of credit at Master Environmental Servicing Plan (MESP) stage). - Actions under Rec. 7 – Caring for Water Establish baseline environmental conditions early in the planning stages for infrastructure projects and make informed choices among alternatives to avoid or minimize impacts to natural systems and achieve net gain wherever possible through innovative design. - Action under Rec. 7 – Caring for Community, Land and Resource Use	7-5 **TRCA,** municipalities, BILD - Develop core monitoring protocols for common stormwater management and other sustainable technologies. **7-6*** **TRCA,** municipalities - Launch cumulative effects monitoring programs for innovative development design. Define research questions and ensure adequate baseline monitoring and establish ongoing monitoring network. Candidate sites could include: • Greenfield development – Block 27 in Vaughan. • Brownfield regeneration and redevelopment (e.g., Urban Growth Centres, Mouth of the Don, Pomona Creek, Bathurst Street widening). 7-7 TRCA, municipalities – Develop site-scale implementation monitoring programs to evaluate the potential benefits of concept site plan implementation.	✓ ✓ ✓	 ✓ ✓
Salt Management and Winter Maintenance	Form partnerships to conduct additional research on the life cycle costs, benefits, and collective and individual effectiveness of salt management best management practices at key locations (e.g., snow storage sites, major highways), including salt application techniques, and temporary storage tanks Research salt management and winter maintenance best	7-8 Municipalities, TRCA, **Universities**, Environment Canada - Form partnerships to conduct additional research on the life cycle costs, benefits, and collective and individual effectiveness of salt management best management practices at key locations (e.g., snow storage sites, major highways), including salt application techniques, temporary storage tanks, and the	✓	

Table 7.1 Evaluation of Innovative Technologies

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
	management practices, and the potential impacts of climate change – Actions under Rec. 6 – Caring for Water	potential impacts of climate change.		

Table 7.2 Ambient Watershed Conditions and Long-term Trends

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs	Justification	Yrs 1 - 5	Yrs 6 - 10
Regional Watershed Monitoring Network (RWMN)	Continue to implement and enhance the regional watershed monitoring network - Actions under Caring for Water and Caring for Nature	**7-9* TRCA** - Review recommendations for additional monitoring in the Don watershed, as noted below, as part of the next review and update of the RWMN. Priorities are also noted below.	TRCA should continue to implement the RWMP in order to provide data on ambient conditions and long term trends. Specific program improvements are outlined below.	✓	✓
Climate Change	Seek Federal and Provincial funding to track advancements in the prediction of regional and local climate change (e.g. predicting change to frequency and/or severity of extreme storm events and downscaling of data from global climate models for use at the watershed or regional scale). Assess impacts on local flood risk so that local stormwater and flood plain management approaches can be modified as required.	7-10 **Environment Canada**, **TRCA** - Continue to collect data in the Don Watershed to track changes resulting from global climate change (i.e., climate, baseflow and stream gauge data). See also Section 5 on Operations, Management and Maintenance (Flood Control Program study recommendations)	Uncertainty associated with the likely degree and timing of changes to climate within the Don Watershed creates challenges for the development of comprehensive strategies that will help the Watershed to adapt.	✓	✓
Water - Precipitation	Continue to monitor stream flow, groundwater levels, and precipitation in the Don	**7-11* TRCA**, municipalities - Additional rain gauges should be installed in the Watershed to supplement the data from the existing gauge and address the need for subwatershed-level data for calibration of hydrologic models. Implementation of the new gauges should be co-ordinated with similar efforts to augment the rain gauge network in neighbouring watersheds.	More gauges are required because of the presence of the ORM and Lake Ontario and a growing urban heat island, which are known to affect variability in precipitation across the watershed. Improved hydrologic modelling and calibration will inform growth plans, watershed management plan updates and provide improved input to design of regeneration projects.	✓	
Groundwater	Additional groundwater monitoring wells (Provincial Groundwater Monitoring Network) for monitoring levels and quality in the Oak Ridges Moraine Aquifer Complex and	**7-12* TRCA** - Seek additional funding partnerships to install nests of groundwater monitoring (water level and groundwater quality) wells at additional sites in the watershed to	There is currently only one Provincial Groundwater Monitoring network well installed in a single aquifer within the Don Watershed. Therefore, TRCA does not have sufficient data to assess groundwater level or quality trends in the Watershed. Also, we do not have data	✓	

Table 7.2 Ambient Watershed Conditions and Long-term Trends

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs	Justification	Yrs 1 - 5	Yrs 6 - 10
Groundwater *(continued)*	Thorncliffe Aquifer Complex	improve spatial coverage and at various depths to improve knowledge of each of the three major aquifers. Potential modifications to the monitoring network could include: ➢ Remove the existing Earl Bales groundwater monitoring well (a former City of Toronto production well) from the network due to vandalism and safety concerns. ➢ Incorporate the 3 wells in an existing nest in Earl Bales into the network (drilled for YPDT into the Oak Ridges Moraine, Thorncliffe and Scarborough aquifers). ➢ Explore opportunities to incorporate additional wells drilled by developers or municipalities, or future wells drilled for greenfield development in Vaughan and/or regeneration at the Don Mouth.	regarding lateral groundwater flow in aquifers, or vertical connections between aquifers. Therefore, we recommend adding new locations with nests of 2-3 wells at each location. These new wells should be located to assess water level changes in aquifers that discharge at surface water flow gauge locations as well as to facilitate the assessment of both regional and local effects of urban redevelopment and land conservation. It may be possible to either assume responsibility for or obtain data from existing monitoring wells installed by others, and the exact locations can be flexible, as long as they provide reasonable geographic coverage of the watershed. Without such coverage, TRCA will not be able to evaluate groundwater flow patterns and gradients in the Don Watershed, and our ability to adequately calibrate groundwater models will be diminished. The priority for these new wells is considered to be high, since it is not possible to accurately validate the groundwater flow model or assess hydrogeologic conditions without field observations. Wells in other watersheds, particularly in Humber RIver, could be used to assist in assessing groundwater flow patterns, but this does not eliminate the need for adequate geographic coverage of the Don Watershed.		
Surface Water – Stream Flow	Improvements in the RWMP	7-13 **TRCA** - Install additional long term stream flow gauges in the Wilket Creek tributary and at the outflow of the Upper East Don River subwatershed south of Steeles Avenue. 7-14 **TRCA** - Develop targets and undertake a study to identify and monitor the maintenance of a natural	Additional stream flow gauges are recommended to help in establishing the baseline flow regime, allow for interpretation of historic baseflow trends, manage Oak Ridges Moraine contributions to baseflow, evaluate success of innovative stormwater management measures and development forms in mitigating impacts. Additional stations will also allow improved calibration of hydrologic models and improved understanding of subwatershed hydrologic response.	✓	✓

Table 7.2 Ambient Watershed Conditions and Long-term Trends

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs	Justification	Yrs 1 - 5	Yrs 6 - 10
		range in variation of flow regime. Review and update targets periodically based on long-term monitoring data.	Incorporation of municipal stream flow gauges (e.g., in Richmond Hill) in the monitoring network may aslo help to achieve these goals.		
Stream Form	Improvements in the RWMP	**7-15*** **TRCA** – Establish stream form reference sites downstream of developing areas (e.g., downstream of Block 27 in Vaughan). 7-16 **TRCA** - Enhance the current monitoring protocols at the established fluvial geomorphic monitoring sites (i.e., additional cross-sectional surveys, greater frequency).	The additional site is needed to establish baseline stream form and rates of change to track the effects of future development. Enhanced monitoring at existing stations, which currently do not generate enough data to reliably track some aspects of channel change will provide benefits for watershed and sub-watershed studies in the Don watershed.	✓ ✓	

Table 7.2 Ambient Watershed Conditions and Long-term Trends

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs	Justification	Yrs 1 - 5	Yrs 6 - 10
Water Quality	Improvements in the RWMP	7-17 **TRCA** - Continue ambient monitoring at the existing water quality stations. 7-18 **TRCA,** municipalities, MOE **-** Supplement ambient monitoring with targeted monitoring studies conducted on a project basis to answer specific questions, e.g.: • Effectiveness of road salt management plans and containment of chlorides at snow dump locations, • Synoptic dry weather outfall monitoring in older parts of Richmond Hill and Markham to help identify potential sources of bacteria, and • Potential impacts of closed or abandoned landfills on surface water quality.		✓ ✓	

Table 7.2 Ambient Watershed Conditions and Long-term Trends

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs	Justification	Yrs 1 - 5	Yrs 6 - 10
Aquatic System	Improve monitoring of fish communities and habitat, particularly for existing populations of redside dace and walleye – Rec. 7 Caring for Nature, Aquatic System	**7-19*** **TRCA** - Install an additional monitoring station in the western tributary in Fish Management Zone 2 (Upper West Don River – Block 27 in Vaughan).	There are virtually no data for fish, benthos and temperature in Fish Management Zone 2.	✓	
		7-20 TRCA, **MNR** - Continue monitoring of redside dace in FMZ 1 (Upper East Don River and Patterson Creek) and investigate opportunities for habitat protection, improvement and expansion		✓	
		7-21TRCA, **MNR** Investigate the potential to recover redside dace populations in the Upper West Don River		✓	
		7-22 TRCA – Collect data to fill data gaps, including: ➢ Existing populations of walleye and rainbow trout (Chinook salmon as a lower priority), ➢ Habitat use of Lower Don by walleye for spawning, nursery and feeding areas for young of the year, and ➢ Natïve mussel species.		✓	
		7-23 TRCA, **MNR**, OFAH, NGOs, volunteers - Support the Invading Species Awareness Program and		✓	

Table 7.2 Ambient Watershed Conditions and Long-term Trends

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs	Justification	Yrs 1 - 5	Yrs 6 - 10
		develop a volunteer-based detection program for aquatic invasive species (i.e., round goby, rusty crayfish, koi, sea lamprey). 7-24 TRCA, MNR, NGOs, volunteers - Develop a volunteer-based monitoring program to track potential walleye spawning activity in the Lower Don River.		✓	
Terrestrial System	Continue monitoring the terrestrial natural heritage system under the Regional Watershed Monitoring Network.	7-25 **TRCA**, municipalities, NGOs, volunteers - Continue and expand remote sensing, biological field inventories and community volunteer-based monitoring. 7-26 **TRCA, MNR** - Develop additional indicators and monitoring protocols for biodiversity. 7-27* TRCA, municipalities - Develop and implement a program to monitor the success of ecological regeneration projects and effectiveness of invasive species control sites.		✓ ✓ ✓	 ✓
Nature-based Recreation	Monitor trail use (recreational and commuter) and participation rates in activities such as birding, fishing and picnicking to assist in planning and regulating public activities.	7-28 **Municipalities,** TRCA - Develop and implement a program to monitor trail use and participation rates in other related recreational activities, with a focus on known and suspected problem areas for incompatible uses (e.g., mountain biking in sensitive natural areas).	The lack of data on use of nature-based recreational opportunities in the Watershed limits our full understanding of issues and ability to balance public access and resource protection.	✓	
Cultural Heritage	Indentify, investigate and conserve cultural heritage prior to changes in land	7-29 Conduct studies to improve our understanding of early human		✓	✓

Table 7.2 Ambient Watershed Conditions and Long-term Trends

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs	Justification	Yrs 1 - 5	Yrs 6 - 10
	use or redevelopment – Rec. 1 Caring for Community, Cultural Heritage Fill gaps in archaeological knowledge – Rec. 3 Caring for Community, Cultural Heritage	cultures and existing cultural heritage landscapes, including field investigations and local knowledge research, particularly relating to: • The Oak Ridges Moraine portions of Vaughan. • Sites with ties to the Underground Railroad (e.g., Thornton-Blackburn site near the waterfront). • The historic Irish community near the Mouth of the Don. • The historic Pennsylvania Dutch influence along German Mills Creek.			

Table 7.3 Adaptive Management

1-1* = Top priority project

Theme	Watershed Plan Recommendation	Next Steps, Projects and Programs (lead partner in bold)	Yrs 1 - 5	Yrs 6 - 10
Monitoring and Adjustments	Evaluate the effects of new and retrofitted stormwater management practices on baseflow and water quality and revise management recommendations and criteria as necessary.	7-30 **TRCA**, municipalities – Develop an adaptive management program • Review the adequacy of existing monitoring mechanisms, including additions noted in Table 7.2 (e.g., RWMN and requirements for compliance and effectiveness monitoring). • Identify any necessary modifications to existing analytical, assessment and reporting protocols. • Define triggers for initiating adjustments to policies, plans, implementation and management. • Identify the mechanisms and procedures for engaging watershed partners in a process for amending the watershed plan and relevant watershed management policies and programs. • Secure commitment to implement the adaptive management program.	✓	✓

8. Tracking Progress

Progress towards the objectives set out in the watershed plan will be tracked by looking at watershed conditions compared with the target indicators identified in the plan. Changes and trends in the watershed conditions will be monitored under the Regional Watershed Monitoring Network and reported on a regular basis through publications such as the Don newsletter, TRCA website, Don Watershed Report Card and the TRCA Living City Report Card.

In keeping with the theme of taking advantage of every opportunity to make improvements, level of effort by watershed stakeholders will be another measure of success. The top priority projects in the implementation guide will be used as a guide to track progress on key actions. Regular input from municipal partners, the DWRC and other stakeholder groups will help to capture the full picture of on-going and emerging projects in the watershed that contribute to gains in environmental quality and community health.

Cooperation and sharing of resources and ideas will be essential to implementation of the watershed plan's recommendations. Recognizing that many issues raised in the Don Watershed Plan are applicable to all watersheds in the GTA and are of interest to multiple municipalities, TRCA proposes convening regular ad hoc meetings to build partnerships to address these common challenges.

Appendix A – Legislative and Policy Context for Watershed Plans

Role of the Watershed Plan

The watershed plan sets long term strategic recommendations for the management of the Don River watershed, based on an integrated understanding of watershed systems and technical analysis of issues, opportunities and their predicted effects on watershed health. Implementation of the plan will rely on the adoption of supportive policies, programs, and practices by the various partners. Specifically, the watershed plan is intended to inform and guide municipalities, provincial and federal governments and TRCA as they update their policies and programs for environmental protection, conservation, and restoration within the contexts of land and water use, and the planning of future urban growth. The plan provides direction to local non-governmental organizations and private landowners with regard to best management practices and opportunities for environmental stewardship.

Legislative and Policy Context

Endorsement for a watershed management approach is well established in legislation and local plans and policies, although it is only the *Oak Ridges Moraine Conservation Plan* (ORMCP) which requires municipalities to undertake watershed plans and incorporate their objectives and requirements into municipal official plans and ensure that major development on the Moraine conforms with the watershed plan (see **Table A1**). The Don River watershed plan was prepared to address the requirements of the ORMCP through a larger watershed planning exercise developed for a broader range of management objectives than just conformity with the ORMCP. Thus, the resulting watershed plan serves a variety of purposes, and not strictly ORMCP conformity.

Table A1 - Legislative and Policy Documents Promoting Watershed Planning

Oak Ridges Moraine Conservation Plan (2002)

Watershed plans

24. (1) Every upper-tier municipality and single-tier municipality shall, on or before April 22, 2003, begin preparing a watershed plan, in accordance with subsection (3), for every watershed whose streams originate within the municipality's area of jurisdiction.

(2) The objectives and requirements of each watershed plan shall be incorporated into the municipality's official plan.

Growth Plan for Greater Golden Horseshoe (2006)

3.2.5 Water and Wastewater Systems

7. Municipalities, in conjunction with conservation authorities, are encouraged to prepare watershed plans and use such plans to guide development decisions and water and wastewater servicing decisions.

Greenbelt Plan (2005)

3.2.3 Water Resource System Policies

The following Water Resource System policies apply throughout the Protected Countryside:

2. Watersheds are the most meaningful scale for hydrological planning, and municipalities together with conservation authorities should ensure that watershed plans are completed and used to guide planning and development decisions within the Protected Countryside.

3. Cross-jurisdictional and cross-watershed impacts need to be considered in the development of watershed plans. The development of watershed plans and watershed management approaches in the Protected Countryside should be integrated with watershed planning and management in the NEP and the ORMCP areas and beyond the Greenbelt.

3.2.5 External Connections

To support the connections between the Greenbelt's Natural System and the local, regional and broader scale natural heritage systems of southern Ontario,… the federal government, municipalities, conservation authorities, other agencies and stakeholders should:

3. Undertake watershed based planning, which integrates supporting ecological systems with those systems contained in this Plan.

Provincial Policy Statement (2005)

Water

2.2.1 Planning authorities shall protect, improve or restore the quality and quantity of water by:

a) using the watershed as the ecologically meaningful scale for planning;

b) minimizing potential negative impacts, including cross-jurisdictional and cross-watershed impacts;

c) identifying surface water features, ground water features, hydrologic functions and natural heritage features and areas which are necessary for the ecological and hydrological integrity of the watershed.

Clean Water Act (2006)

Assessment reports

15. (1) The source protection committee for a source protection area shall prepare an assessment report for the source protection area in accordance with the regulations, the rules and the terms of reference. 2006, c. 22, s. 15 (1).

Contents

(2) An assessment report shall, in accordance with the regulations, the rules and the terms of reference,

(a) identify all the watersheds in the source protection area;
(b) characterize the quality and quantity of water in each watershed identified under clause (a);
(c) set out a water budget for each watershed identified under clause (a) that,
(i) identifies the different ways that water enters and leaves the watershed and quantifies the amount of water that enters or leaves in each way,
(ii) describes the groundwater and surface water flows in the watershed,
(iii) quantifies the existing and anticipated amounts of water taken from the watershed that require a permit under section 34 of the *Ontario Water Resources Act*,
(iv) quantifies the existing and anticipated amounts of water taken from the watershed that do not require a permit under section 34 of the *Ontario Water Resources Act*, and
(v) having regard to the information referred to in subclauses (i) to (iv), describes any existing or anticipated water shortages in the watershed

Conservation Authorities Act (2006)

Objects

20. (1) The objects of an authority are to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals.

Powers of authorities

21. (1) For the purposes of accomplishing its objects, an authority has power,
(a) to study and investigate the watershed and to determine a program whereby the natural resources of the watershed may be conserved, restored, developed and managed

Ontario Water Resources Act (2007)

Under the Water Taking and Transfer Regulation (O. Reg. 387/04) Permits to Take Water (PTTW) are issued by the Ministry of Environment. In accordance with the regulation, the Director issuing a PTTW shall consider a suite of environmental issues to the extent that information is available, and relevant to the application. These considerations include:

- The natural variability of water flow or water levels,
- minimum stream flow
- habitat that depends on water flow or water levels, and
- water balance and sustainable aquifer yield.

(While specific reference to watershed plans and associated technical reports is not made in the Regulation, such documents provide information and guidance regarding the considerations noted above)

Municipal Official Plans

York Region (2004)

2.3 Water

It is the policy of Council:

- To cooperate with area municipalities, the conservation authorities and other agencies in the preparation of watershed planning initiatives to:
- identify headwaters areas and better understand their function, linkages and sensitivities;
- establish and achieve water quality objectives for the watershed;
- address the long-term cumulative impact of development on the watershed;
- create an inventory of existing geology, hydrology, hydrogeology, groundwater recharge areas, limnology, aquatic and terrestrial habitats and other environmental data;
- recommend appropriate stormwater management techniques, including, but not limited to best management practices, the use of natural vegetative drainage corridors and the use of permeable surfaces; and
- identify the form and constraints under which development may be permitted and provide guidelines for development, design and construction.

Note: At the time of publication, York Region was undertaking an update of its official plan. The draft plan was scheduled for adoption by council in late 2009.

City of Toronto (2002)

Chapter 2 – Shaping the City

The Official Plan makes reference to watershed plans in the context of managing stormwater. Official Plan policy states that the City will work with neighbouring municipalities and the Province to develop a framework for dealing with growth across the GTA which will, among other things "result in better water quality through water conservation and wastewater and stormwater management based on watershed principles".

Chapter 3 – Building a Successful City

The Official Plan indicates that private city-building activities and changes to the built environment, including public works, will "reduce the adverse effects of stormwater and snow melt based on hierarchy of watershed-based wet weather flow practices".

Restoration Plans

Toronto and Region Remedial Action Plan (1994)

Recommends a watershed-based approach to de-listing impaired beneficial uses of the Toronto waterfront and watersheds, and notes Action 41: Include Watershed Perspectives in Planning Process.

Toronto Wet Weather Flow Management Master Plan (2003)

The City of Toronto Wet Weather Flow Management Master Plan identified a specific need to undertake restoration to mitigate impacts of development in the 905 area and to complement actions being taken in the downstream portion of the watershed. A key guiding principle of the WWFMMP is wet weather flow will be managed on a watershed basis with a natural systems approach being applied to stormwater management as a priority.

Don Mouth Naturalization and Port Lands Flood Protection Project

Toronto and Region Conservation (TRCA) is proceeding with the Don Mouth Naturalization and Port Lands Flood Protection Project (DMNP) in cooperation with the Toronto Waterfront Revitalization Corporation (TWRC). Ultimately this project will develop a preferred alternative that will transform the existing mouth of the Don River including the Keating Channel, into a healthier, more naturalized river outlet to the lake, while at the same time, removing the risk of flooding to 230 hectares of urban land to the east and south of the river.

Appendix B – Oak Ridges Moraine Conservation Plan Watershed Plan Requirements - Conformity Assessment Report (Amended Sept. 2009)

This report documents how requirements of sections 24 and 25 of the Oak Ridges Moraine Conservation Plan (MMAH, 2002) have been satisfied for the portions of the **Don River Watershed** located in the Oak Ridges Moraine Area, based on direction provided by the provincial technical guidance documents (Ministry of the Environment, 2007)[1].

Subsection	Requirement	Conformity Assessment	Document Reference
24.(1)	Every upper-tier municipality and single-tier municipality shall, on or before April 22, 2003, begin preparing a watershed plan, in accordance with subsection 24.(3), for every watershed whose streams originate within the municipality's area of jurisdiction.	Watershed planning and ongoing watershed management have been activities the Toronto and Region Conservation Authority (TRCA) has carried out in partnership with its municipalities for a number of years. Therefore a watershed plan was deemed to have been initiated prior to April 22, 2003, although study components required update to varying degrees. A watershed study was initiated by the TRCA, in partnership with the City of Toronto, Region of York, and area municipalities for the Don River watershed in 2004. An interim report for the Don Watershed ORM subwatersheds, *Don River Watershed – Conformity to Sections 24 and 25 of the ORMCP*, was completed in March 2007. The final watershed plan has been developed with additional technical analysis and detailed consultation with municipal partners, stakeholders	A workplan to fulfill the watershed planning requirements of the ORMCP and direction to commence the Don River Watershed Plan in 2004 were approved at the Sept. 26, 2003 meeting of the TRCA (Authority Res. #A196/03). *Don River Watershed – Conformity to Sections 24 and 25 of the ORMCP* (TRCA, March, 2007). Approval of the *Don River Watershed Plan* and its supporting documents is pending a TRCA Board decision on Sept. 25,

Subsection	Requirement	Conformity Assessment	Document Reference
		and Conservation Authority Board review.	2009.
24.(3)	A watershed plan shall include, as a minimum, (a) a water budget and conservation plan as set out in section 25;	See conformity assessments for sections 25.(1) and 25.(2).	See document references for sections 25.(1) and 25.(2).
	(b) land and water use and management strategies;	The *Don River Watershed Plan* describes recommended management strategies regarding existing and future land and water use that will help to protect the ecological and hydrological features and functions in the Oak Ridges Moraine Area. Key strategies include the need to protect and expand natural cover and build sustainable communities, particularly with an aim to maintain or restore pre-development water balance.	See Section 5, *Don River Watershed Plan*
	(c) a framework for implementation, which may include more detailed implementation plans for smaller geographic areas, such as subwatershed plans, or for specific subject matter, such as environmental management plans;	Implementation direction accompanies the recommended management strategies noted in section 24(3)(b).above. The *Don River Watershed Plan Implementation Guide* provides more detailed implementation direction for policy, regeneration projects, etc. including supportive maps and criteria.	See Section 5, *Don River Watershed Plan* See *Don River Watershed Plan Implementation Guide*
	(d) an environmental monitoring plan;	The *Don River Watershed Plan* includes recommendations regarding changes or enhancements to existing environmental monitoring programs and other area, site-or issue-specific monitoring requirements. The *Don River Watershed Plan Implementation Guide* provides more detailed implementation direction for the plan's recommendations.	See Section 5, *Don River Watershed Plan* See Section 7, *Don River Watershed Plan Implementation Guide*

Subsection	Requirement	Conformity Assessment	Document Reference
	(e) provisions requiring the use of environmental management practices and programs, such as programs to prevent pollution, reduce the use of pesticides and manage the use of road salt; and,	The *Don River Watershed Plan* contains recommendations regarding the use of environmental management practices and programs. The Implementation Guide further identifies practices and policies applicable to the land use planning and development process.	See Section 5, *Don River Watershed Plan* See Sections 1 and 5, *Don River Watershed Plan Implementation Guide*
	(f) criteria for evaluating the protection of water quality and quantity, hydrological features and hydrological functions.	The *Don River Watershed Plan* identifies watershed goals, objectives, indicators and targets to be used to track or evaluate long term watershed health. This framework is updated, but based on that in *Forty Steps to a New Don (*the previous watershed management strategy; TRCA, 1994). The accompanying Implementation Guide sets out recommended policies to provide guidance for the review of land use proposals to evaluate protection of groundwater and surface water quality and quantity, hydrological features and functions, as well as terrestrial features and functions, and aquatic communities and habitat.	*See Sections 2 and 3, Don River Watershed Plan and supporting current conditions reports.* Section 1, *Don River Watershed Plan Implementation Guide*
24.(4)	Major development is prohibited unless, (a) the watershed plan for the relevant watershed, prepared in accordance with subsection 24.(3), has been completed;	The interim report, *Don River Watershed – Conformity to Sections 24 and 25 of the ORMCP*, was completed in March 2007 and approved by the TRCA Board as fulfillment of the ORMCP requirements. The final watershed plan has been developed with additional technical analysis and detailed consultation with municipal partners, stakeholders and the Conservation Authority Board. The *Don River Watershed Plan* and its background documents now provide the basis for satisfaction of the Oak Ridges Moraine Conservation Plan requirements and supercede	*Don River Watershed – Conformity to Sections 24 and 25 of the ORMCP* (TRCA, March 2007). Approval of the *Don River Watershed Plan* and its supporting documents is pending a TRCA Board decision on Sept. 25, 2009.

Subsection	Requirement	Conformity Assessment	Document Reference
		the interim report. While the management strategies remain largely unchanged, the technical direction and science has been refined in the later work.	
	(b) the major development conforms with the watershed plan; and	See conformity assessment for section 24.(3)	See document references for section 24.(3)
	(c) a water budget and conservation plan, prepared in accordance with section 25 and demonstrating that the water supply required for the major development is sustainable, has been completed.	See conformity assessments for sections 25.(1) and 25.(2).	See document references for sections 25.(1) and 25.(2)
24.(8)	An application for major development to which this subsection applies shall not be approved unless, (a) the relevant municipality has complied with clause (c) of subsection 24.(4); or	See conformity assessment for section 24.(4)	See document references for section 24.(4)
	(b) the applicant, (i) identifies any hydrologically sensitive features and related hydrological functions on the site and how they will be protected, (ii) demonstrates that an adequate water supply is available for the development without compromising the ecological integrity of the Plan Area, and (iii) provides, with respect to the site and such other land as the approval authority considers necessary, a water budget and water conservation plan that, (A) characterizes groundwater and surface water flow systems by means of modelling,	For any applications received prior to completion of watershed plans, in accordance with the ORMCP, conformity will have been reviewed and confirmed through applicant submitted studies.	

Subsection	Requirement	Conformity Assessment	Document Reference
	(B) identifies the availability, quantity and quality of water sources, and (C) identifies water conservation measures.		
25.(1)	Every upper-tier municipality and single-tier municipality shall, on or before April 22, 2003, begin preparing a water budget and conservation plan, in accordance with subsection 25.(2), for every watershed whose streams originate within the municipality's area of jurisdiction.	A water budget study was initiated by the Toronto and Region Conservation Authority, in partnership with the City of Toronto, Region of York, and area municipalities for the Don River Watershed as part of the overall Don River Watershed Plan. The Regional Municipality of York identified the need for a water conservation plan for the entire Region in 1997. The Region's Water for Tomorrow program included a 6 year capital program along with a 2 year maintenance program. This 8 year program came to completion in summer 2006, with a sustained savings of 20.33 million litres per average day. In 2007 the Region completed its Water Efficiency Master Plan Update. The Region has begun to implement programs recommended in the master plan including water efficient fixture rebates, subsidized rain barrel sales, free pre-rinse spray valve replacements for commercial kitchens, industrial/commercial/institutional water audits and capacity buy-back. As new and updated programs begin the Region maintains its public and youth education programs along with a shower head and toilet flapper retrofit maintenance program.	Approval to initiate the Don River Watershed Planning Study according to an initial work program, including water budget study, was granted at the Sept 26, 2003 meeting of the Authority (Authority Res. #A196/03). *York Region Water Efficiency Master Plan Update, 2007.*
25.(2)	A water budget and conservation plan shall, as a minimum,	The *Don River Watershed Plan* includes a quantitative description of the major components	See Section 3, *Don River Watershed Plan*

Subsection	Requirement	Conformity Assessment	Document Reference
	(a) quantify the components of the water balance equation, including precipitation, evapotranspiration, groundwater inflow and outflow, surface water outflow, change in storage, water withdrawals and water returns;	of the water balance equation on an average annual basis, over the watershed surface area. The water budget was developed based on land use characteristics, interception abstractions, vegetation, surficial soils, and spatial variations in long term average precipitation, temperature and evaporation across the watershed using Precipitation Runoff Modeling System (PRMS) software and the groundwater flow model (MODFLOW) to conform to the jurisdictional standard prepared for the source water protection program.	See *Geology and Groundwater Resources – Report on Current Conditions (TRCA, 2009).*
	(b) characterize groundwater and surface water flow systems by means of modelling;	The groundwater flow system of the Don River watershed has been characterized by development and calibration of a groundwater flow model that utilizes MODFLOW software. The surface water flow system of the Don River watershed has been characterized by development and calibration of a hydrologic model based on Visual OTTHYMO software.	See *Geology and Groundwater Resources – Report on Current Conditions (TRCA, 2009).* *See Surface Water Hydrology/Hydraulics and Stormwater Management - Report on Current Conditions (TRCA, 2009)* *Don River Hydrology Update*. MMM Ltd., 2004
	(c) identify, (i) targets to meet the water needs of the affected ecosystems, (ii) the availability, quantity and quality of water sources, and (iii) goals for public education and for water conservation;	See 24(3)(f) above for targets and criteria. The Regional Municipality of York's Water for Tomorrow program outlined specific goals for both education and water conservation measures as outlined in the initial scope of work in 1997. The Water Efficiency Master Plan Update recommends new and/or updated programs for	See 24(3)(f) above for targets and criteria. York Region *Water Efficiency Master Plan Update (2007)*

Subsection	Requirement	Conformity Assessment	Document Reference
		public education and water conservation measures. New goals for education and water conservation measures will be set as program implementation plans are completed.	
	(d) develop a water-use profile and forecast;	All upper-tier and single-tier municipalities in the Don River watershed have developed water use profiles and forecasts as part of preparing water use assessment reports and/or water efficiency plans and programs. York Region has developed water-use profiles and forecasts as part of the Water and Wastewater Master Plan Update, 2009. The forecasts incorporate the effect of planned water conservation measures on future demand. These profiles and forecasts are updated with the master plans. Drawing on the municipal data and additional information from the Permit to Take Water database, a watershed-based water use profile was prepared as part of the *Don River Watershed Plan.*	See section 3 of York Region's *Water and Wastewater Master Plan Update, 2009* See Baseflow and Water Use Assessment – Report on Current Conditions (TRCA, 2009). See Geology and Groundwater Resources – Report on Current Conditions (TRCA, 2009).
	(e) evaluate plans for water facilities such as pumping stations and reservoirs;	Plans for any such facilities are being evaluated by York Region as part of its updated water supply strategy and will be reviewed in the context of the updated watershed information.	York Region's *Water and Wastewater Master Plan Update, 2009*
	(f) identify and evaluate, (i) water conservation measures such as public education, improved management practices, the use of flow restricting devices and other hardware, water reuse and recycling, and practices and	All upper-tier and single-tier municipalities in the Don River watershed have developed water efficiency plans and programs that identify and evaluate water conservation measures, incentives and ways of promoting water conservation measures and incentives. The *Don River*	See Section 5.0 in *Don River Watershed Plan (2009)* See Sections 5.0 and 6.0 of York Region's *Water*

Subsection	Requirement	Conformity Assessment	Document Reference
	technologies associated with water reuse and recycling, (ii) water conservation incentives such as full cost pricing, and (iii) ways of promoting water conservation measures and water conservation incentives;	*Watershed Plan* supports the recommendations of the municipal water efficiency plans and programs and describes management strategies that would further contribute to achieving the objectives and targets of these plans/programs. York Region's water rates are currently based on full cost pricing.	*Efficiency Master Plan Update* for the identification, evaluation and recommendation of water conservation measures and education
	(g) analyse the costs and benefits of the matters described in clause (f);	All upper-tier and single-tier municipalities in the Don River watershed have developed water efficiency plans and programs that analyse the costs and benefits of their recommended water conservation measures, incentives and promotion strategies.	See Section 5.2.3 of York Region's *Water Efficiency Master Plan Update* for the cost analysis of water conservation measures
	(h) require the use of specified water conservation measures and incentives;	York Region's Water for Tomorrow program used specific water conservation measures and incentives as part of the original capital plan. The Water Efficiency Master Plan Update also recommends the use of specific water conservation measures and incentives including water efficient fixture rebates, subsidized rain barrel sales, free pre-rinse spray valve replacements for commercial kitchens, industrial/commercial/institutional water audits and capacity buy-back	See Section 6.0 of York Region's *Water Efficiency Master Plan Update* for the recommended program strategy
	(i) contain an implementation plan for those specified measures and incentives that reconciles the demand for water with the water supply;	York Region developed an implementation plan for the program as part of the scope of work in 1998. The Water Efficiency Master Plan Update has recommended an updated program strategy. Implementation plans/strategies for components of the updated program are currently being developed.	See Section 6.0 of York Region's *Water Efficiency Master Plan Update* for the recommended program strategy
	(j) provide for monitoring of the water budget and water conservation plan for	York Region's Water Use Efficiency Master Plan	See Section 9.0 of York

Subsection	Requirement	Conformity Assessment	Document Reference
	effectiveness.	Update recommends a monitoring and Evaluation program which is implemented with each program component. The *Don River Watershed Plan* includes recommendations regarding changes or enhancements to existing environmental monitoring programs and other area, site-or issue-specific monitoring requirements that provide for, or improve capacity for monitoring of the water budget.	Region's *Water Efficiency Master Plan Update* See Sections 5 and 6, *Don River Watershed Plan.* See Section 7, *Don River Watershed Plan Implementation Guide.*
27.(1)	Except with respect to land in Settlement Areas, all development and site alteration with respect to land in a subwatershed are prohibited if they would cause the total percentage of the area of the subwatershed that has impervious surfaces to exceed, (a) 10 per cent; or	Current and projected future per cent impervious cover has been assessed for each Oak Ridges Moraine subwatershed (based on methods suggested in draft Technical Paper #13 which exclude Settlement Areas, utilizing subwatershed boundaries defined in draft Technical Paper #9). These estimates indicate that no Oak Ridges Moraine subwatersheds in the Don River Watershed exceed the 10% impervious cover criteria for current conditions (based on 2002 land use), nor will they exceed 10% upon build-out of municipal official plans approved as of February 2006.	See *Don River Watershed Impervious Cover Assessment Technical Briefing Note* (TRCA, 2007).
	(b) any lower percentage specified in the applicable watershed plan.	No lower percentage is specified.	

1.Ministry of the Environment (2007) Oak Ridges Moraine Conservation Plan – Watershed Plans, Technical Paper #9.
Ministry of the Environment (2007) Oak Ridges Moraine Conservation Plan – Water Budgets, Technical Paper #10.
Ministry of the Environment (2007) Oak Ridges Moraine Conservation Plan – Water Conservation Plans, Technical Paper #11.
Ministry of the Environment (2007) Oak Ridges Moraine Conservation Plan – Subwatersheds (Impervious Surfaces), Technical Paper #13.

Don River Watershed Planning Study
List of Supporting Documents

Watershed Plan

Toronto and Region Conservation Authority. 2009. *Don River Watershed Plan*.

Supporting Documents

Toronto and Region Conservation Authority. 2009. Don River Watershed Plan Reports on Current Conditions - Geology and Groundwater Resources; Fluvial Geomorphology; Aquatic System; Surface Water Hydrology/Hydraulics and Stormwater Management; Baseflow and Water Use; Surface Water Quality; Terrestrial Natural Heritage (and refinement of the Target System); Land and Resource Use; Nature-based Experiences; Cultural Heritage; and Air Quality.

Toronto and Region Conservation Authority. 2009. *Don River Watershed Plan Implementation Guide*.
Toronto and Region Conservation Authority. *Don River Watershed Based Fisheries Management Plan* (in progress, 2009)

The Municipal Infrastructure Group Ltd. 2009. *Don River Watershed Site Evaluation*. Prepared for Toronto and Region Conservation Authority.

XCG Consultants Limited. 2009. *Upper Don River Watershed Sustainable Stormwater Management Study*. Prepared for Toronto and Region Conservation Authority.

Water's Edge Limited and Hugh Whiteley. 2007. *A Principles-Based Methodology to Build a Watershed-Regeneration Priorities Plan for a Largely-Urbanized Watershed*. Prepared for Toronto and Region Conservation Authority.

Freeman Associates. 2006. *Action Plan for Sustainable Practices—Implementation Strategies for the Residential and Business Sectors in the Greater Toronto Area.*

J.D. Power and Associates. 2006. *2006 New Home Builder Customer Satisfaction Study – TRCA Supplemental Study*. Toronto and Region Conservation Authority.





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