

## Action Plan for Sustainable Practices—Implementation Strategies for the Residential and Business Sections in the Greater Toronto Area

### INTRODUCTION

Watersheds in metropolitan areas across Canada are suffering degradation as a result of urbanization. Loss of natural vegetative cover, an increase in the area of paved and other impervious surfaces, and storm sewer systems in older urban areas that route stormwater to streams and rivers, greatly increase the stormwater loading in watersheds and disrupt the natural water balance.

The Greater Toronto Area (GTA) is a case in point. Despite the use of “state-of-the-art stormwater management practices, GTA watersheds are suffering on-going degradation”.<sup>1</sup> Education and awareness campaigns to encourage the adoption of “lot level” and “at source” practices for stormwater management have yet to achieve widespread success. Uptake of sustainable practices by residents and business owners/managers is seen as a key part of implementing GTA-wide watershed management plans<sup>2</sup> and creating sustainable watershed communities.

### PURPOSE

The goal of the study was to determine the marketing opportunities and barriers to improving uptake of lot level stormwater management and other sustainable practices amongst residents of single-family dwellings and business owners/managers of commercial/light industrial facilities in the GTA, and to develop strategies and mechanisms to drive uptake of such practices.

### METHODOLOGY

The two sectors comprising the focus of the research, single-family residential and commercial/light industrial (*business*), are disparate and were therefore addressed separately in the study.

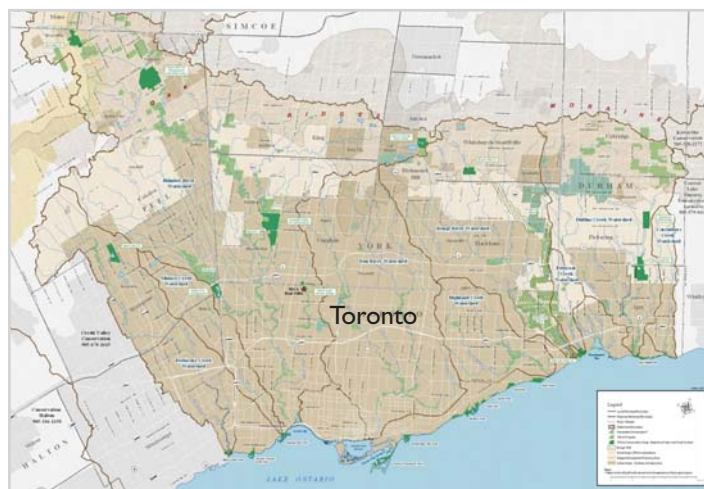


Figure 1 Map of Greater Toronto Area

### Residential sector

Owner-occupants of single-family residential dwellings were the focus of the market research. This segment of the residential sector was selected primarily because single-family dwellings have the greatest impact on the watershed on a “per unit basis”.

The geographic area for the residential research comprised the upper portions of the three major GTA watersheds: the Don, Rouge and Humber rivers. The following five study areas were identified:

1. Don Mills (City of Toronto)
2. Markham-Unionville
3. Thornhill-Richmond Hill (Vaughan East)
4. Woodbridge (Vaughan West)
5. Brampton

1 Toronto Region Conservation Authority; *Terms of Reference for Implementation Strategies for Sustainable Practices*. Toronto. March 2006

2 Ibid

## Research Highlight

### Action Plan for Sustainable Practices—Implementation Strategies for the Residential and Business Sections in the Greater Toronto Area

The five study areas were selected because they are located in an east-west band spanning the GTA where:

- pressure on the form and functioning of the three principal watersheds is significant;
- there is a large percentage of single family dwellings and there are considerable urban growth demands (excluding Don Mills); and,
- there is a good mix of newer and older single-family residences.

Statistics Canada 2001 Census of Population data was used to develop demographic profiles of the five study areas. Based on the profiles of the study areas, a recruitment screener—a series of demographic questions used to screen potential resident recruits for the market research—was developed and used to ensure the research samples were consistent with the demographic profile for the corresponding study area. Table 1 provides a summary description of the overall sample and each of the five study area research samples.

**Table 1** Residential Sector Research Sample

Demographic Variable	Overall	Female	Male	Brampton	Markham	North York	Thornhill	Vaughan
<b>Sample Size n=</b>	121	70	51	26	25	26	22	22
% of sample (n)	100%	58%	42%	21%	21%	21%	18%	18%
Women	58%	100%		65%	56%	62%	50%	55%
Men	42%		100%	35%	44%	38%	50%	45%
<b>Age of home:</b> <5 years	13%	11%	16%	23%	4%		18%	23%
5 to 15 years	21%	20%	22%	19%	24%	8%	14%	41%
16 to 30 years	41%	40%	43%	35%	60%	12%	68%	36%
31 or more years	25%	29%	20%	23%	12%	81%		
<b>Age:</b> 25 to 44 years	38%	43%	31%	54%	20%	42%	18%	55%
45 to 64	59%	57%	61%	46%	72%	58%	73%	45%
65 to 74	3%		8%		8%	5%	9%	
<b>Education:</b> High School	26%	31%	18%	35%	12%	31%	14%	36%
College or Trade	35%	33%	37%	35%	36%	42%	32%	27%
University Degree	39%	34%	45%	27%	52%	27%	55%	36%
<b>Marital Status:</b> Married	84%	74%	98%	85%	80%	85%	95%	77%
Divorced/Sep/Widowed	13%	23%		8%	20%	12%	5%	23%
<b>Children at Home:</b> 1-2	65%	65%	67%	65%	68%	58%	77%	59%
3 to 4	14%	14%	14%	19%	12%	8%	9%	23%
None	20%	20%	20%	15%	16%	35%	14%	18%
<b>Income:</b> \$100,000+	37%	31%	45%	19%	44%	38%	50%	36%
\$60,000 to \$99,000	46%	50%	41%	65%	36%	50%	36%	41%
\$40,000 to \$59,999	17%	19%	14%	15%	20%	12%	14%	23%
<b>Work Hours:</b> 0	7%	9%	2%	4%	12%	4%	5%	5%
1 to 15	3%	3%	4%		4%		9%	5%
16 to 35	25%	34%	12%	19%	32%	31%	18%	23%
36 to 50	62%	49%	80%	69%	44%	62%	68%	68%
<b>Spouse's Work Hours:</b> 0	30%	33%	25%	35%	36%	27%	18%	32%
1 to 15	1%		2%					5%
16 to 35	14%	7%	24%	4%	20%	12%	18%	18%
36 to 50	52%	54%	49%	58%	40%	54%	64%	45%
<b>Canadian Born</b>	53%	53%	53%	46%	40%	54%	59%	68%
<b>Ethnic Origin:</b> Canadian	15%	16%	14%	27%	8%	8%	18%	14%
Italian	22%	20%	24%	4%	16%		23%	73%
U.K.	19%	20%	18%	16%	28%	27%	19%	5%
Black/African	6%	7%	4%	19%	8%			
Jamaican	5%	7%	2%	12%		8%		5%
Asian	5%	1%	6%		4%	12%		1%
Chinese	3%	1%	6%		4%	12%		
East Indian	3%	4%	2%	8%	8%			
Various Other Origins	22%	24%	24%	14%	24%	33%	40%	2%

Residents were randomly recruited via telephone. Research sessions with resident recruits were held at locations in each of the five study areas. A total of 121 residents were surveyed (an average of 24 residents per research session).

At the research session, resident participants completed a questionnaire with both closed- and open-ended questions using a facilitated method of inquiry. Participants provided written responses to 124 verbally asked research questions within a limited timeframe. This research process was used to capture top-of-mind (non-rationalized), unbiased responses that reflected participants' intrinsically held beliefs.

Following the completion of the five research sessions, the participants' verbatim responses were compiled and categorically grouped. Responses were quantified (percentage frequency distribution) and qualified (idea, subject, theme, meaning, etc.) allowing for an objective evaluation of the results. Lastly, the data collected from the research sessions in each of the five study areas were compared to determine if there was consistency in responses between the study groups.

### Business Sector

Both primary and secondary research was utilized for this initial study of the business sector. For the primary research, interviews with 19 key informants were conducted. Informants represented a variety of disciplines associated with the design, construction and operation of commercial and light industrial facilities, including on-site stormwater management and green building. Facility owners/managers, architects, engineers, builder/developers and municipal representatives involved in new development and/or retrofitting of existing developments were interviewed.

## FINDINGS

### Residential Sector

The most significant findings from the research with residents can be summarized as follows:

1. A considerable barrier to homeowners' uptake of sustainable landscaping practices is a deeply held aesthetic motivation that is based on a definition of a beautiful landscape as one with:
  - a manicured, green, weed-free lawn;
  - lots of colour, primarily provided by flowers (principally ornamental annuals);
  - a neat, tidy appearance; and,
  - good design and an organized, structured layout.

This underlying aesthetic motivation leads homeowners to unsustainable practices, such as cutting their lawn too short and excessive irrigation.

2. The terms "naturalized" landscape and "native plant" have a generally negative connotation to most residents. The majority of residents perceive a naturalized landscape as uncontrolled and lacking design and structure.
3. With competing lifestyle priorities, most residents allocate little time or have limited interest in such considerations as sustainable practices. Compounding the little attention given by homeowners to sustainable practices are the many, varied and frequently mixed messages they receive about the environment, which in turn creates confusion leading to disinterest and apathy.
4. The majority of resident respondents reversed their negative opinions about naturalized landscapes upon viewing photos depicting neat and well designed partially naturalized residential landscapes. In other words, residents' negative views of naturalized landscapes were readily addressed using images that challenged their misperceptions.
5. There was a statistically significant consistency in those landscape elements and features that participants cited as important to their homes' landscape, principally
  - a neat and tidy appearance;
  - well designed with a traditional, structured layout;
  - flower gardens for colour; and,
  - trees for shade and aesthetic value.
6. Most respondents were generally supportive of reusing rain water for irrigation, but would not consider lot-level stormwater management practices that involve a significant monetary investment with little perceived personal and/or aesthetic value, and/or required changes to the structure/infrastructure of their home.

### Business Sector

Significant findings from interviews with key informants in the business sector were as follows:

1. Capital cost, function and municipal approvals are the principal drivers for the design of buildings and on-site stormwater management systems in the business sector.

2. Municipalities' efforts in planning and approvals are focused primarily on compliance with building code requirements and not enhanced (beyond regulation) on-site stormwater management and green building. Although several municipalities in the GTA, particularly the City of Toronto, are making headway in green construction, much needs to be done to facilitate greater uptake by building owners/managers/developers.
3. Many building owners/managers are willing to invest more capital to construct "greener" buildings provided they could secure in return expedited approvals from the municipality.
4. Green building and enhanced stormwater management in private sector buildings is primarily driven by two factors:
  - a decision on the part of the builder/developer to build a "green building" because of a personal commitment to the environment and/or as a value added marketing feature; and,
  - a municipal incentive (e.g., change in zoning to increase density in exchange for green features in construction) or requirement (usually due to an existing limitation such as a sensitive watershed prone to flooding) for enhanced stormwater management.
5. Most builders/developers do not give significant consideration to operational costs when designing a building and surrounding site. Carrying and construction costs are the principal drivers; and with enhanced stormwater management systems or other green technologies having longer-term paybacks, they are often not considered.
6. In buildings where there is approximately a one-to-one ratio of floor to ceiling space, such as box stores and light industrial facilities, green roofs do not make economic sense (the calculated payback period is over 10 years).<sup>3</sup>
7. Municipal stormwater management fees are sufficiently low as to not serve as a motivator for the use of enhanced stormwater technologies for retrofits or new construction. There is too long a payback period for most business owners/managers to consider enhanced stormwater management systems.
8. Lack of guiding policies and regulations, misperceptions (societal and within public institutions) and builder/owners/developer concerns over liability limit the use of surface water features for rain water collection and infiltration, such as constructed, decorative streams or ornamental infiltration ponds (common design features in many European cities).

## RECOMMENDATIONS

### Residential Sector

Based on the findings from the research with residents, it was recommended that any marketing program focus on landscaping-related sustainable practices—specifically naturalization and the use of infiltration landscape elements, such as porous materials for hardscape areas and planting trees to create canopy cover. With some very limited exceptions, the residential marketplace is not at a stage where the time, effort (for special permit approvals and sourcing experienced contractors), and money required to retrofit homes for rainwater harvesting through a cistern or equivalent technology or installation of a green roof is a viable consideration.

Three principal, overarching recommendations came out of the residential research:

1. Develop a multi-pronged, integrated marketing program to be implemented GTA-wide.
2. Phase the implementation of the marketing program—starting small and building as resources permit—to allow for troubleshooting of the program on a smaller scale before rolling out the full program; provide the time required to build strategic partnerships with key stakeholders; and monitor and evaluate the program to ensure it meets targets and is modified or adjusted as required.
3. Focus marketing initiatives on generating *incremental change* in residents' approach to their home's landscape. The landscape aesthetic is deeply ingrained and few residents would be willing to naturalize all of their home's landscape. Moving residents toward integrating native plants and utilizing some design features or elements that enhance infiltration of rain water and snow melt are the first steps in changing residents' misperceptions about naturalized landscapes.

The individual components of the recommended marketing program targeting the single-family residential sector in the GTA are summarized in Table 2.

3 Orlando Corporation and the Municipal Infrastructure Group; "Green Roofs Initiative", Toronto. March 2006

**Table 2** Components of the Residential Sector Marketing Program

COMPONENT	DESCRIPTION
Messages and positioning	<ul style="list-style-type: none"> <li>■ Visual “messages” will be as important as language-based messages in dispelling residents’ misconceptions about landscapes that are naturalized and/or encourage greater infiltration. Promotional materials and advertising should depict <u>partially</u> naturalized landscapes that are beautiful, colourful (with an abundance of flowers), tidy and well designed.</li> <li>■ Respondents identified common words and themes to describe the emotions evoked by their home landscapes. Using these words and themes in simple messages; for example, “beautiful. . .naturally”, “coloured by nature”, “natural curb appeal”, etc., in conjunction with visuals of beautiful landscapes; will help to dispel misconceptions and evoke positive feelings toward partially naturalized landscapes.</li> <li>■ Any campaign images and messages should be focus tested with residents prior to their use.</li> </ul>
Strategic partnerships	<ul style="list-style-type: none"> <li>■ Capitalize on the experience and expertise of key stakeholders and cost effectively reach more of the residential marketplace by securing strategic partnerships.</li> <li>■ Establish partnerships and joint marketing initiatives with key stakeholders—area municipalities, box retailers (cited by respondents as the preferred destinations for lawn care products), garden centres/nurseries (most frequently identified by respondents as the preferred destination for garden care products and services) and community and environmental organizations.</li> </ul>
Products and resources	<ul style="list-style-type: none"> <li>■ Develop a consistent “look and feel” for all marketing products and resources.</li> <li>■ Begin with an outdoor campaign utilizing full colour posters depicting beautiful, partially naturalized residential landscapes.</li> <li>■ As program builds, informational resources, POP displays and coupons, table top displays for key municipal locations (libraries, recreation centres, utility billing offices, etc.) will be required.</li> <li>■ All advertising products and informational resources should be focus tested with residents prior to finalisation.</li> </ul>
Vehicles	<ul style="list-style-type: none"> <li>■ Implement a <i>Landscape Advisory</i> service to work directly with homeowners to help them begin to naturalize their landscape and employ other sustainable landscaping practices.</li> <li>■ Make use of a variety of marketing vehicles including outdoor signage; POP displays and joint promotional initiatives with retail stakeholders; strategic partnerships with municipalities, garden clubs and other community and environmental groups; demonstration projects at key municipal and retail locations and at single-family residences in target areas; a website with hands-on landscaping and gardening design tools and information; and advertisements in local papers and Canadian gardening magazines.</li> </ul>
Demonstration sites	<ul style="list-style-type: none"> <li>■ Naturalized or partially naturalized demonstration projects should be secured at key municipal locations—headquarters, libraries, recreational facilities and municipal parks—and participating retailers.</li> <li>■ Offer an incentive to homeowners in target residential areas to serve as demonstration sites.</li> <li>■ Profile demonstration sites through media, garden clubs and tours, municipal newsletters, utility bill inserts, etc.</li> </ul>

**Business Sector**

The principal recommendation stemming from the business sector research is the establishment of a GTA Centre for Sustainable Technologies. This would be a virtual centre operated in co-operation or as a joint venture with stakeholders—individuals and their organizations with expertise in enhanced stormwater management technologies, site design, construction/retrofitting, green construction/renovation, sustainable landscaping and municipal planning and approvals. The centre would serve as an information hub, a one-stop electronic shop for information, resources and referrals on sustainable practices and green building.

The remaining marketing-communications and outreach recommendations for fostering sustainable practices—enhanced on-site stormwater management, rain water reuse, and green building—can be summarized as follows:

1. Educational outreach to municipal planning and approvals staff through the provision of a guidebook with a step-by-step checklist of sustainable practices supported by a one-day workshop to help facilitate the use of the guidebook and explore the topic of green buildings in more detail.

## Research Highlight

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2. Demonstration projects and case studies should be promoted where they exist and new demonstration projects secured. There are several excellent examples of enhanced stormwater management systems and green construction in GTA developments that should be promoted to the business sector and key decision-makers in municipalities—mayors and councillors, relevant commissioners, senior policy makers and planning and approvals staff.
3. Establish a *Leaders in Sustainable Practices* initiative. This would include an awards program recognizing sustainable practices in new building construction and retrofitting of existing developments, a *corporate leaders* program wherein key corporate leaders serve as peer-to-peer advocates for “greening” new and existing developments, and a *business outreach* program targeting decision-makers in the business community.
4. As the research with the business sector indicated, the majority of the barriers to enhanced stormwater management, green construction, and other sustainable practices are not marketing related. Therefore, it is recommended that further research into the non-marketing related barriers to sustainable development in the commercial and light industrial sectors be undertaken.

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