

TORONTO AND REGION CONSERVATION AUTHORITY

SUSTAINABILITY REPORT 2012 – 2013



INTRODUCTION

About this Report

Table of contents

INTRODUCTION	
About TRCA	1
Ceo Message	3
Stakeholder Engagement	4
Material Sustainability Aspects	5
REPORTING ON MATERIAL IMPACTS	
Flood Protection	7
Water Management	9
Land Management	11
Biodiversity	14
Access to Nature	16
Community Engagement	19
Research and Monitoring	21
Policy Development	24
Government Funding and Funding Diversity	26
Eco-Efficiencies	28
Energy Consumption and Greenhouse Gases	30
Water Conservation and Waste Management	33
Green Economy	35
Taking Sustainability to the Next Level	37
MORE INFORMATION	
Additional Information	39
GRI Content Index	43

Toronto and Region Conservation Authority's (TRCA) 2012-2013 sustainability report is prepared in accordance with the Global Reporting Initiative (GRI) G4 Guidelines, including its NGO supplement. Our disclosure is characterised as Core, meaning that it contains all the essential elements of a sustainability report. We engaged with stakeholders to prioritize content and you can read about this in the "Stakeholder Engagement" and "Materiality Analysis" sections (p4-5).

TRCA's sustainability achievements and performance in this report cover the calendar years 2012 and 2013 and is a follow-up to our 2011 Corporate Responsibility Report. To provide our readers with context about TRCA, there is also information about historical events and activities prior to 2012.

In many sections of the report we refer to TRCA's strategic plan, "Building The Living City: 10-Year Strategic Plan 2013-2022". (Building The Living City). You can read about this plan in the last section "Taking Sustainability to the Next Level" (p37). You can also obtain supplementary information regarding TRCA's strategy, governance, financial, environmental and social performance in the sources we have listed in the "Additional Information" (p39) section and the "GRI Content Index" (p43). To clarify technical sustainability terms, there is a "Definitions" section on page 39.

This report contains information about sustainability aspects that are derived directly from TRCA's sites, as well as TRCA's broader influence on the environmental, social and economic sustainability of the Toronto region. In each report section, we indicate if the aspect is "site" or "region" specific.

GRI encourages reporters to provide information that is comprehensive, balanced and comparable with peers and over time. Due to the absence of comparable organizations that publish sustainability reports and that we are just starting to develop impact measurement systems, we are aware of the limitations that the reader has in comparing information provided in this document. We are committed to provide more comparability in future sustainability reports.

TRCA collaborated with sustainability consultancies Quinn & Partners Inc. and Zizzo Allan PC to conduct stakeholder research and develop this report. The report content has not been subject to formal external assurance.

About TRCA

We have a legislated mandate to embed sustainability in the Toronto region

TRCA works with stakeholders in the Toronto region (also referred to as “the region” in this report) to improve flood protection, water quality and biodiversity in its watersheds. Some of our programs are delivered in collaboration with other conservation authorities, environmental groups and contractors. We also educate residents about the value of nature and our heritage and engage people and businesses in resource conservation and uptake of sustainable practices and technologies. Our work is focused around the nine watersheds that form the Toronto region and the Lake Ontario waterfront as the southern boundary.

We own more than 18,000 hectares of land in the Toronto region, employ approximately 600 employees (full time equivalents) and coordinate over 9,700 volunteers. We are funded by public and private sources with an annual budget of approximately \$90 million.

About 48% of our spending is dedicated to projects and programs that are related to watershed management. 29% goes to tourism and recreation within those watersheds, while another 8% funds our education and outreach. Corporate services constitute 8% of our expenditures and our spending on sustainable communities is less than 7% of our annual total. During the reporting period, there has been no significant change regarding TRCA's size, structure, ownership or its supply chain.

STRATEGY

We work to improve sustainability in our own organization and move the Toronto region towards a more sustainable future

TRCA is and has always been in the business of sustainability. Our work is guided by our ongoing strategic planning, from the Flood Control and Water Conservation Plan in 1959 to the Watershed Plan in 1980 that pioneered integrated watershed planning. The Greenspace Strategy published in 1989 began to recognize the value and role of natural lands. The Watershed Plan and the Green Space Strategy were later integrated as the Valley and Stream Corridor Management Plan in 1994, which provided the foundation for blue and green infrastructure across the Toronto region. In 1999 we initiated The Living City Strategic Plan to create a sustainability vision for the Toronto region and begin to incorporate social and economic dimensions to our sustainability work.

In 2012, the Authority Board Members adopted “Building The Living City”. It is our 10-year plan that lays out the strategic direction TRCA intends





OUR LOGO

In 2012 we announced our new logo. It is designed to convey not only our name, but also who we are today and what we are working towards. Though it can be interpreted in many ways, the round icon represents connection and continuity. The logo has been designed to reflect the interdependence of what TRCA aspires to achieve – healthy rivers and shorelines, greenspace and biodiversity and sustainable communities.

to pursue from 2013 to 2022. The plan describes how we will deliver our commitment to safeguarding and enhancing the health and well-being of Toronto region residents through the protection and restoration of the natural environment and the ecological services our environment provides while enabling a systematic shift toward the green economy.

We believe in our vision for The Living City - “a new kind of community... where human settlement can flourish forever as part of nature’s beauty and diversity”. We are constantly reinventing how our organization can best contribute to the vision of The Living City. Together with our annual report, the sustainability reporting process will keep everyone informed about our progress and challenges and communicate measurable results of our activities.

GOVERNANCE

The Authority’s Board consists of 29 political and public representatives from its 5 major funding bodies, the Regional Municipalities of York, Region of Peel, Durham Region, the City of Toronto and the Town of Mono & Township of Adjala-Torosontio. The Authority Board Members approve and oversee our strategic plan and annual operating plan and budget.

MANAGEMENT APPROACH

The approved strategies and budgets are delivered by the Directors Committee, headed by the Chief Executive Officer and Secretary Treasurer Brian Denney. Directors oversee staff functions such as finance, human resources and marketing, as well as the major program areas, watershed management, ecology, planning and development, restoration services and parks and culture. The Authority operates based on the 5 year business plan which is updated and extended annually. Directors develop their annual operating plans that support TRCA’s strategic objectives. In 2013, each operational plan incorporates quantitative performance measures that report on program activities as well as outcomes. “Measure performance” is a key enabling strategy, described in The Living City strategic plan.

The most senior officer responsible for sustainability is the Chief Executive Officer and Secretary Treasurer.

All of TRCA’s employees and Board members are governed by the Toronto and Region Conservation Authority’s Code of Conduct, which addresses matters of business ethics and conflicts of interest.

CEO Message

Brian Denney

Chief Executive Officer and Secretary Treasurer

We are a leader in watershed management including flood protection and land management. We also aspire to be a leader in regional and corporate sustainability



Welcome to Toronto and Region Conservation Authority's (TRCA's) 2012-2013 Sustainability Report! With this report we are joining a progressive group of organizations across Canada and the world that reports on sustainability, an effort that is comparable to financial reporting or publishing an annual review. According to the Global Reporting Initiative (GRI), a leading, international standard-setting body for sustainability reporting, a sustainability report describes the environmental and social impacts of an organization's everyday activities, provides information about governance and demonstrates the link between strategy and commitment to a sustainable economy.

With TRCA's adoption of GRI and its G4 Sustainability Reporting Framework, we are embarking on an exciting challenge and are demonstrating our commitment to sustainability leadership. This is a difficult task as meaningful and transparent reporting requires that we measure and report the positive and negative outcomes of our work and provide comparable data over time. An important part of leadership is recognizing that to make change, we have to start somewhere. This report is a start.

As you read about our high-priority sustainability aspects highlighted in this report you will find many examples of sustainability leadership. For instance, the rainstorm of July 8 2013 tested our hard work around flood protection of the Toronto region. As the storm approached Toronto, we issued advance-warnings to the public, schools and other institutions. Our flood control systems reduced the impact of downstream flooding. By keeping development out of the flood plains, the valley's and stream corridors were able to flood and thus protect public safety and surrounding development and infrastructure. We also found that the areas most impacted predated our flood line mapping and stormwater management programs. Newer communities have these controls in place and are more resilient to extreme weather events. Despite these examples of our leadership, the July 8 event also illustrated the need to improve stormwater management and flood control measures in older

neighbourhoods which constitutes the vast majority of the Toronto region. With climate change bringing more frequent and intense extreme weather events, we will need to accelerate our work in protecting the Toronto region.

Our ongoing work with government agencies, the private sector, non-governmental organizations (NGOs) and residents showcases an impressive level of stakeholder engagement in comparison to many other organizations. This collaboration enables us to fulfill our flood protection and conservation objectives, while providing many economic and social benefits to our communities. A good example of our contribution to sustainability is the Don Mouth Naturalization and Port Lands Flood Protection Project. The Environmental Assessment was undertaken by TRCA on behalf of Waterfront Toronto and the City of Toronto. The project, when implemented, will result in the creation of a redesigned river mouth that can properly convey flood waters, provide habitat for wildlife and recreational opportunities for residents. In addition, the works will remove 240 hectares of land and 850 buildings from flood risk, allowing significant future economic development in the area.

Finally, our internal sustainability program, which enables us to manage the energy use and carbon emissions at our facilities and sites, contributed to reducing our per employee environmental footprint from our 2005 baseline. We are a sustainability leader, but to date we have only made incremental internal sustainability improvements since we started to measure. We know that we have to do better as we can only achieve exemplary leadership by hitting ambitious targets for energy and water reduction, waste diversion and carbon neutrality.

I welcome your thoughts and comments relating to our sustainability successes and challenges. Please reach us at info@trca.on.ca.

Stakeholder Engagement

*Our stakeholders
shape our work and
this report*

OUR MANY STAKEHOLDERS

Residents
Businesses
Project partners
Employees
Volunteers
Funding municipalities
NGOs
Government bodies
School Boards
Students
Teachers

OUR MISSION CANNOT BE ACCOMPLISHED WITHOUT PRODUCTIVE STAKEHOLDER ENGAGEMENT

We fulfill a unique role, straddling public sector, private enterprise and community concerns and therefore have a diverse and large set of stakeholders. We rely on our stakeholders to inform our work and help deliver the results we seek.

Our stakeholder engagement serves many purposes and we have many types of “participants”. Firstly, we consult those impacted by our work on land and shoreline improvements, including neighbouring property owners and residents as well as our program partners and non-governmental organizations. Secondly, many of our programs serve to build awareness of sustainability-related issues and provide education about nature conservation, enjoying the outdoors and sustainable technologies. We obtain input from employees, project delivery partners and participants in these initiatives to ensure success. Engaging our volunteers is particularly important, as they help to deliver ongoing monitoring of water quality and biodiversity and participate in planting and community clean-ups. Finally, we have an ongoing dialogue with our government funding providers through our Authority Board Members and other governance processes. We estimate that in 2013 we conducted nearly 250 watershed or project based consultations, engaging more than 4,500 people. In addition, our stewardship, education and public events engaged more than 150,000 people and over 800,000 people used our public facilities for recreation. This section describes how stakeholders have contributed to the preparation of this report. In each of the following report sections, we describe how we work with stakeholders to deliver our programs. We report on how we engage with residents in the “Access to Nature” (p16) and “Community Engagement” (p19) sections.

OUR STAKEHOLDERS DIRECTED THE CONTENT OF OUR SUSTAINABILITY REPORT

In following the G4 sustainability reporting standard (see “About this Report”), we recently executed our first stakeholder consultation where we asked stakeholders about the sustainability topics they wanted us to include in our report. This approach is called “materiality analysis” and the purpose is to obtain stakeholder feedback on our sustainability-related work and prioritize the sustainability issues that stakeholders deem most important. We commit to consult with stakeholders on an ongoing basis to ensure that our sustainability strategies and reports reflect desired content. Our first materiality analysis was managed in two steps. First, we conducted an internal session with representatives from TRCA’s directorates to validate and rank a long list of sustainability issues that TRCA manages. Second, we conducted in-depth interviews with representatives from some of our most important external stakeholder groups. We interviewed municipal managers and elected TRCA board members from the City of Toronto, Durham Region, York Region, Region of Peel, Town of Uxbridge and consulted with directors at Waterfront Toronto, Evergreen Brick Works and the Building Industry and Land Development Association (BILD). Once these consultations were complete, we compiled all the stakeholder rankings in our materiality analysis, the outcomes of which are discussed on the next page (p5).

Material Sustainability Aspects

OUR MATERIALITY ANALYSIS IDENTIFIED 11 HIGH-PRIORITY SUSTAINABILITY ASPECTS

This sustainability report provides information about how we are managing and making progress on our most important sustainability aspects. In prioritizing the most important sustainability aspects, we started with the topics addressed in [“Building The Living City” strategic plan](#) and consulted with other sources as specified by GRI (see “Additional Information”, p39). After reviewing relevant documents, we identified an extensive set of sustainability aspects that we are either managing as a part of our legislative mandate, as a part of our strategic plan or as an area that we impact through our daily operations. For example, TRCA manages flood risk and water quality as part of its legislative watershed protection mandate, while it also draws potable water for consumption as part of its impact through its daily operations at its offices and sites.

The reporting team then synthesized the most relevant sustainability topics in 35 separate aspects and developed definitions for each. Stakeholders were asked to prioritize the aspects from high to low importance. The results are illustrated in the materiality table below. Although each sustainability aspect has a distinct name and definition, it is not a “stand-alone” topic. Most of the aspects are inter-related and few sustainability activities can be executed successfully without the consideration of others. Together they contribute to TRCA’s objectives.

SUSTAINABILITY REPORTING BOUNDARIES HAVE EXPANDED TO REFLECT OUR CORE BUSINESS

TRCA has previously reported on its corporate social responsibility programs and progress. We published our last Corporate Social Responsibility [\(CSR\) report in 2012](#), covering the 2011 reporting period. Prior to our CSR report, other reports covered our internal CSR programs and our engagement with employees and communities.

Our materiality analysis shows that stakeholders think our most important sustainability aspects are tied to our flood protection and conservation mandate rather than simply to the eco-efficiency of our internal operations.

Stakeholders consistently told us that flood protection, land and water management and biodiversity matter to them the most

OUR LEGISLATIVE MANDATE

“...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”. (Excerpt Section 20 of the Conservation Authorities Act)

Therefore, the content of this report has expanded on prior reports to incorporate our organization’s sustainability related programs and results from all of our activities.

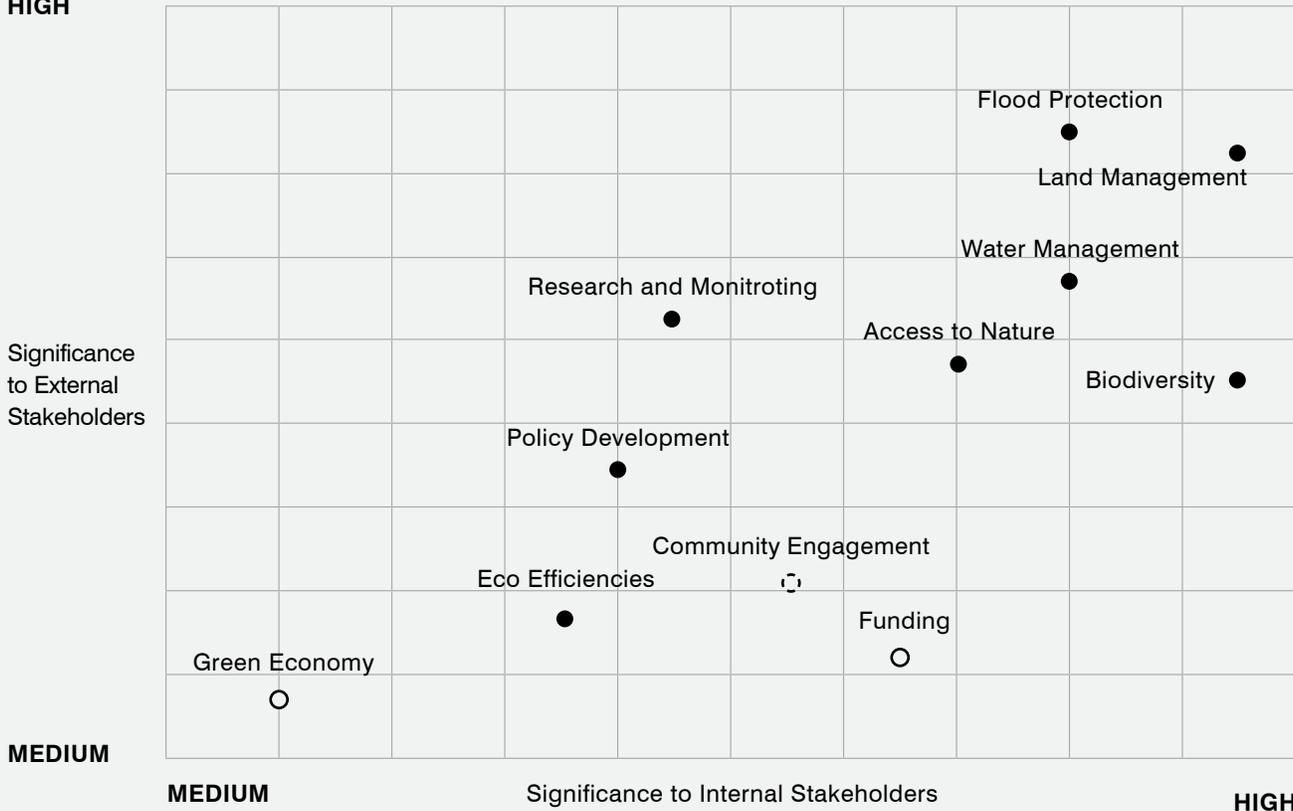
Sustainability aspects that were deemed to be of lesser significance by stakeholders included air quality, customer satisfaction, diverse and equal opportunity employment, employee satisfaction, green procurement, indirect economic impact and training. Although not included in this report, we will continue to monitor our involvement in these areas and evaluate the importance of them in ongoing stakeholder engagement.

MATERIALITY TABLE

ASPECT LEGEND

- Economic
- Environmental
- ◻ Social

HIGH



The Materiality Table illustrates sustainability aspects that have been ranked as most important by our internal (managers) and external (TRCA funding bodies, project partners, development industry) stakeholders. Each aspect is plotted from medium to high significance. As you can see, many aspects are ranked the same by both stakeholder groups. This sustainability report includes information about all of these 11 "material aspects" starting on page 7.

REPORTING ON OUR MATERIAL SUSTAINABILITY ASPECTS

Our flood protection infrastructure and activities protect property valued at billions of dollars

Flood Protection

WE PROTECT THE TORONTO REGION FROM FLOODING

After the devastation of Hurricane Hazel in 1954, four smaller conservation authorities were amalgamated to create TRCA to manage flood control across the Toronto region. One of our most critical mandates continues to be flood risk protection. We operate flood protection infrastructure, such as dams and flood control structures, issue flood warnings and coordinate flood responses with municipal partners. The stormwater and flood line mapping and modeling we generate are critical to understanding and protecting against flood risks.

In collaboration with municipal and provincial partners, we also inform policy and planning to reduce flood risks associated with increased urbanization and development in the Toronto region. Our policy and planning helps us incorporate low impact development principles, enhanced stormwater management practices and setbacks from flood hazards where possible. We also partner with municipalities to retrofit older areas with stormwater management features to further protect against flooding while providing other environmental benefits, such as improved water quality.

In 2012 and 2013, TRCA was responsible for maintaining 10 dams, 25 other flood control structures and hydrological models for all of the Toronto region's watersheds, producing approximately 500 flood line maps. We estimate that in Toronto, a third of the urbanized areas have



stormwater controls, ranging from 77% in the Rouge to 9% in the Highland. Flood-risk is a real concern across our region. 36,000 people live in flood-vulnerable clusters in 30 communities, comprising over \$3 billion worth of property at risk from flooding.

DESPITE RECENT WINS, SIGNIFICANT CHALLENGES REMAIN

Our 2011 Living City Scorecard set out sustainability targets for 2013. Our goal was to ensure that 35% of the region's urban areas have stormwater controls, that there should be no increase in the number of flood-vulnerable clusters and that the number of structures at risk should be reduced. In the long term, we aspire to have fewer than 20 flood-vulnerable clusters and more than 80% of urban areas with stormwater controls in the Toronto region.

We have already demonstrated success in mitigating flood risk. For instance, our work helped mitigate potential devastating effects of the Toronto rainstorm on July 8, 2013 where 126 mm of rain fell within 2 hours in some areas of the city. Newer communities saw little impact, while the areas most affected by the event were older areas that pre-dated flood line mapping and stormwater management programs. For example, on July 8, 2013, TRCA's G. Ross Lord flood control reservoir detained 1.6 million cubic meters of water at its peak, reducing the duration of peak flooding in key impacted areas within the lower Don River by 2 hours, ultimately assisting necessary rescue and recovery activities.

In light of development pressures, climate change and aging infrastructure, much work is still required to provide adequate flood protection and to improve the health of our watershed to the region's residents and businesses. We need to scale up our infrastructure improvements and retrofits to reach our targets including augmenting conventional stormwater practices with innovative solutions such as Green Infrastructure (natural vegetation and vegetative technologies that provide society with necessary products and services) and Low Impact Development (an approach to land development and re-development that works with nature to manage stormwater as close to source as possible).

Case Study



2012 LOWER DON RIVER WEST REMEDIAL FLOOD PROTECTION PROJECT

- Safeguards 210 hectares of downtown Toronto against flooding from the Don River, which has happened periodically since the mid-1870s
- Constructed permanent flood protection landform, averaging 3.5 m high along the west side of Don River from Queen Street to just north of Keating Channel
- Permits construction in the West Don Lands, including the athlete's village for the 2015 Pan/Parapan American Games
- Provides erosion protection through 40,000 truckloads of clay and planting of native grasses, flowers and groundcover to make land more resistant to erosion
- Serves as a foundation for the new Corktown Common, 7.3 hectare park that opened in the summer of 2014

Water Management

Our water resources are vital for healthy communities

UNDERSTANDING AND REPORTING ON WATER CONDITIONS IS THE FOUNDATION OF OUR WORK

As watershed managers, we work to protect the flow, quality and quantity of water within the Toronto region. Our role includes creating a scientific understanding of the state of our aquatic ecosystems and water resources, which we fulfill by monitoring and evaluating key metrics such as river and stream flows, water pollutants, aquatic organisms and river and valley erosion. Many times we take an active role in leading erosion control projects to protect land and water resources. We use our expertise in ecology, hydrology and hydrogeology when we contribute to land development application processes and policy development. Furthermore, we contribute to watershed planning and subwatershed studies and work with municipalities to conduct municipal water quality assessments as well as spearhead municipal drinking water source protection plans.

In order to track and evaluate our progress and inform our priorities and policies, we measure, monitor and report on the region's water quality and quantity in our watershed report cards and other reports. In 2012 we identified 400 significant threats to drinking water supplies in the Humber, Rouge and Duffins watersheds and we are working to implement solutions to mitigate them (Work of the Source Water Protection Authorities).

MEASURING QUALITY OF WATER

Measure	Indicators	Targets	Progress
Surface Water Quality	<ul style="list-style-type: none"> Water Quality Index score (WQI) E. Coli bacteria Phosphorus Benthic Macroinvertebrates (BMI) 	<ul style="list-style-type: none"> By 2016, WQI of 50-59 and no further deterioration of current water quality conditions Long term, WQI of greater than 70 Phosphorus [no target] E. Coli [no target] 	<ul style="list-style-type: none"> WQI varies across jurisdiction (37-77) Water quality decline in most watersheds since 2001 Highest E. Coli levels in Mimico, Don and Highland watersheds Phosphorus levels reduced over past 20 years
Groundwater Quality	Nitrate and Nitrite Chloride	<ul style="list-style-type: none"> Reduce chloride levels in some areas Increase data collection points through partnerships with regional municipalities of Peel, York and Durham 	<ul style="list-style-type: none"> Good groundwater quality overall, indicating little or no contamination from agriculture manure, fertilizers or septic systems Several wells have high chloride levels Best water quality found in Oak Ridges Moraine aquifer Data collection in progress

2013 HIGHLIGHTS

Our 2013 activities included

restoring 435 metres of stream

in the Duffins Creek watershed, mimicking a natural channel and improving habitat for native cold-water fish species. We also contributed watershed data and expert advice to the City of Markham’s subwatershed study for creeks within the Rouge River watershed.

PARTNERSHIPS ARE IMPORTANT FOR FULFILLING OUR WATER MANAGEMENT MANDATE

Successful water management requires collaboration. For example, the City of Toronto has approximately 63 stormwater management ponds (SWMPs), many of which are in need of maintenance in order to perform as designed. This issue can impact stream erosion and negatively impact downstream water quality. In 2013, we partnered with the City of Toronto to clean out 3 of its SWMPs and removed 207 truckloads of sediment thereby creating more room for water storage. We expect this partnership with the City of Toronto to continue and would like to extend our expertise to other areas in the region.

CONTRIBUTING TO DRINKING WATER SOURCE PROTECTION



+



+



=



Credit Valley Conservation, Toronto and Region Conservation and Central Lake Ontario Conservation were designated Source Protection Authorities (together, the CTC Source Protection Region) and assigned the responsibility for developing the scientific understanding of threats to municipal water quantity and quality by the provincial Clean Water Act within their areas. The CTC source protection areas are coincident with their respective conservation authority boundaries. As the lead CTC authority, Toronto and Region Source Protection Authority appointed the multi-stakeholder CTC Source Protection Committee, responsible for overseeing the science work and formulating policies to protect against any identified risk to municipal water quantity and quality within the region. The Toronto and Region Source Protection Area Assessment Report compiles scientific information about the factors influencing the quality and quantity of drinking water across TRCA’s jurisdiction. The assessment report is the first of its kind within our watersheds and was approved in January 2012 by the Ministry of the Environment. An update to the report with new information on water quantity threats will be completed in late 2014.

Case Study

MEADOWCLIFFE DRIVE EROSION CONTROL IMPROVES WATER QUALITY, AQUATIC HABITAT AND BEACH ACCESS

The Meadowcliffe Drive Erosion Control Project exemplifies how our projects can have multiple benefits. Prior to construction, erosion in the area was 1.2 m per year and 12 properties, including a designated heritage site, were identified as “at risk” of erosion and slope instability. The Project helped stabilize slopes to protect the residential properties on the Scarborough bluffs and contributed to improved water quality in the area. Its design also provided shoreline protection from waves, enhanced fish habitats and provided greater public access to the waterfront. These improvements helped us obtain 2 hectares of aquatic habitat for many fish species and almost 5 hectares of new recreational space for the public.

Land Management

We are stewards of the natural environment, helping to preserve ecology for the benefit of future generations'

WELL-MANAGED LAND IS A VERY IMPORTANT ASSET

Our land management activities tie into our most important strategies; managing our water resources for current and future generations, maximizing the value of our green space and creating communities that integrate nature and the built environment. Land management does not stand on its own, but supports other sustainability aspects and also provides revenue sources for today and tomorrow.

TRCA protects, restores and enhances land quality through its programs, habitat restoration, policy development, development review and input, land acquisition and management of TRCA-held land and structures.

PROTECTING LAND THROUGH LAND ACQUISITION AND MANAGEMENT

To fulfill our land management objectives, we acquire and maintain areas at risk of flooding or lands that have environmental significance. Much of our holdings are situated along the Niagara Escarpment, the Oak Ridges Moraine and the Lake Ontario waterfront. In 2013, we purchased 64 hectares of land within the Toronto region, bringing our total holdings to almost 18,000 hectares. The majority of these acquisitions were within the Town of Caledon in connection with the [Greenlands Acquisition Project](#).



“The TRCA can turn the ravine system into the place making icon of Toronto. Its most important job is to meaningfully involve the ravines as a design framework for city-building”

*Geoff Cape, CEO,
Evergreen Brickworks*

This type of project helps to deliver multiple benefits through integrated watershed plans, drinking water source protection, flood and erosion control and shoreline protection, public access, outdoor education, regional trails and appropriate recreation.

IMPROVING THE FOREST COVER BENEFITS MORE THAN OUR LAND AND AIR

Our programs promote the Toronto region’s forest and urban tree canopy, focusing on maintaining or increasing the number of trees and leaf cover. These efforts are very valuable to the community for both the aesthetic and environmental services they provide. For instance, a report published by TD Bank in 2014, valued Toronto’s trees at \$7 billion due to the contributions trees collectively make to the environment, human health and overall quality of life.

Furthermore, we have numerous forest habitat restoration and enhancement projects underway. For example, in Etobicoke and Mimico Creeks in 2013 we planted more than 10,000 trees and shrubs. In addition our meadow restoration project resulted in 10 hectares of new meadow habitat and 8 hectares of land prepared for meadow seeding in 2013.

HABITAT PRESERVATION IS A HIGH VALUE ACTION, SUPPORTING MANY GOALS

In fulfilling The Living City “Building The Living City” strategic plan, we also act to preserve and improve aquatic and terrestrial habitats. Much of this is done in conjunction with our stormwater and erosion control programs. For example, in our site enhancement work, there are often opportunities to improve the functions of streams and land such as our work to naturalize hydro line corridors to natural meadows with native wildflowers, grasses, shrubs and bird nest boxes.

We also contribute to land protection by ensuring that our conservation areas, camp sites and golf courses meet the required standards of Audubon International for protecting the environment, conserving natural resources and providing wildlife habitats. To date, five of TRCA’s conservation areas have qualified for the Audubon Cooperative Sanctuary Program, meaning that these areas have a certified environmental management plan that improves efficiency, conserves resources and promotes conservation efforts.

CONTRIBUTING OUR EXPERTISE TO MUNICIPAL DEVELOPMENT ACTIVITIES

TRCA contributes to municipal land use planning. We participate in review and approvals decision-making processes as well as Ontario Municipal Board (OMB) hearings. Through our involvement we focus on the environmental lens of sustainability including flood protection and preservation of significant natural areas and we advocate for broader sustainable community issues to be addressed.

In 2013 we participated in over 30 OMB hearings and in 18 municipal growth area plans and emergency projects to recover from the July 8, 2013 rainstorm. We also conducted cultural heritage surveys and studies that feed into our conservation plans, helping to ensure that sensitive cultural heritage assets situated on conservation lands are protected. This includes considerations for aboriginal communities.

As our region continues to attract more people, we are faced with challenges as we work with our municipal partners to balance competing demands on land for housing, recreation and conservation. The strategies outlined in the “Building The Living City” strategic plan guide us in dealing with this balancing process and encourage us to pursue activities and policies that support sustainable economic development while preserving significant natural areas that support the long-term health of our communities.

LAND BY THE NUMBERS 2012-2013

8.4 hectares of public greenspace per 1,000 people

18,000 hectares of land holdings in 2013

8,800 hectares of land actively managed

64 hectares of land acquired in 2013

200 km of trails maintained

6 km of trails built in 2013

1.7 million native trees, shrubs and aquatic plants planted from 2008-2012

2,600 trees planted in 2013

\$334 million in book value of land in 2012

Case Study



VALLEY AND STREAM CORRIDORS ARE CENTRAL TO OUR IDENTITY

The natural valley and stream corridors are one of the most distinctive features of the Greater Toronto Area (GTA). Much of the valley and stream corridor lands in the GTA are designated as parkland and remain relatively undeveloped. The primary reason for the undeveloped state of these lands, despite the ever growing population in the region, is the danger of flooding and erosion since these landforms often overflow their banks after major storms. In 1954, Hurricane Hazel almost completely flooded the valleys, streams and ravines in western Toronto, and caused property damage across the GTA. Over the years, development controls have been put in place to manage these lands as part of the regional natural heritage system, to provide flood protection for the surrounding lands and to provide recreational opportunities.

Biodiversity

Biodiversity is the abundant variety of terrestrial plants, animals and fish that enhances ecosystem resilience and productivity

TRCA MONITORS SPECIES AND WORKS TO INCREASE RICHNESS THROUGH HABITAT RESTORATION

We protect, restore and enhance biodiversity on TRCA managed land and waters across the region. Biodiversity is an important measure of ecosystem health. Greater biodiversity means that ecosystems can be more resilient to stressors such as increased urbanization, changing climate or invasive species. Greater biodiversity allows ecosystems to adapt to and recover from change.

To understand the current state and trends of biodiversity, we measure, monitor and report on habitats and species in our region. We identify opportunities for improving and restoring habitats in our ongoing work on water and land management. Additionally, we help embed biodiversity considerations into municipal land use and infrastructure planning and policy.

In 2013, our staff and volunteers collected 88,000 data records observing or describing a plant, animal, bird or insect. We track where these species are found and how many there are. This information helps us and our stakeholders inform plans and decisions that affect natural habitats as well as flag wins and challenges as biodiversity trends change.

Habitat restoration is the foundation for increasing biodiversity. In 2013, we restored more than 10 kilometres of riparian zones and shorelines and almost 100 hectares of wetland, riparian and terrestrial habitat. The wetlands we restored in 2013 are equal to 60% of the area of Toronto's High Park.

INTEGRATING BIODIVERSITY INTO POLICY

Through TRCA's Terrestrial Natural Heritage System Strategy, watershed plans and aquatic habitat plans, we help municipalities incorporate biodiversity considerations in their Official Plans and policies. We also provide input to the development and application of policies and guidance documents both municipally and provincially around biodiversity protection and management.

WE MEASURE BIODIVERSITY INDICATORS TO INFORM OUR STRATEGIES

Twenty five percent of the TRCA's nine watersheds have natural cover of forests wetlands and meadows. This cover ranges from 11% in highly urban areas to 40% in headwater areas on the Moraine. Our long-term goal is 30% natural cover in the region. To reach this goal, we need to maintain the existing natural cover and add an additional 28,000 hectares of natural habitats. We also aspire to improve the overall quality of cover from "fair" to "good", as defined by TRCA. When we assess quality we look to 3 key measures:

1. Size: larger habitat patches are better for promoting native species diversity because they provide more diversity of species and resources and can support larger populations.
2. Shape: in developed or fragmented landscapes like the TRCA's watersheds, habitats that are more compact and consolidated (have the least amount of edge) are less vulnerable to adverse external impacts.



3. Matrix influence (surrounding land use): each habitat patch has a relationship with its surrounding land uses (urban agricultural or natural). Generally habitats whose matrix is predominately urban will suffer more adverse effects and those where the matrix is predominately natural will have the most benefit.

Therefore to improve the “quality” of our natural heritage system we will need to increase the size, improve the shape and manage the impacts from the surrounding matrix.

A diverse range of terrestrial and aquatic plants and animal species is essential to creating a productive ecosystem. Biodiversity ensures natural sustainability since all species, including humans, depend on each other to survive. Extinction of even one species may lead to extinction of other species that rely on it. As of 2013 we have observed approximately 1,100 species of native plants and animals in our region. About two thirds are Species of Regional Conservation Concern due to small numbers and poor distribution across the region. We aspire to see no further loss of terrestrial plant and animal species. We are working to complete reforestation and wetland habitat restoration on approximately 750 hectares across the region. We must also actively manage non-native invasive species to protect our native biodiversity. In our watershed monitoring, we have identified 53 native fish species and our target is to maintain this number and opportunistically to re-establish species such as the Atlantic salmon in the Duffins Creek, Humber River and Credit River.

2012 WAS A BIG YEAR FOR “FIRSTS” AND NEW ARRIVALS IN THE REGION

The Rouge River marsh is the largest and most diverse coastal wetland in the GTA. In 2012, the ring-necked duck and at least two pairs of pied-billed grebes nested in the Rouge River area for the very first time and our staff also recorded nesting attempts by the common moorhen and American coot.

In the Duffins Creek watershed, Chinook salmon was captured for the first time in all of our years of sampling. Furthermore, the Louisiana water thrush, a species at risk, was seen throughout the breeding season at a property in the watershed.

There were also troubling new arrivals in the region. The clasping-leaved pondweed, a submerged aquatic plant not seen in the GTA for 100 years, was rediscovered at the Peel Tract. While a food source for ducks, geese and mammals, the clasping-leaved pondweed can form dense mats that block the sunlight from other species. The emerald ash borer continues to spread across the region and will have a significant impact on forest biodiversity. Furthermore, several invasive round gobies were captured in the Carruthers Creek watershed for the first time. This fish is a voracious feeder and spawns several times a year, making it an ecological threat.



Access to Nature

Connecting with nature is fundamental and enhances quality of life

WE HELP PEOPLE ENJOY THE TORONTO REGION'S WATERFRONT, VALLEYS AND STREAM CORRIDORS

Connection with nature supports human health. TRCA offers residents and visitors in the Toronto region an opportunity to enjoy nature and recreational activities through our park and trail infrastructure. Toronto has been gifted with extraordinary waterfront, valley and stream corridor resources and we help make these spaces attractive and accessible to the community where appropriate.

In 2012 and 2013, we expanded and improved infrastructure in the Toronto region to allow safe and convenient access to ravines, valley and stream corridors and other TRCA sites. In 2013, we completed over 6 kilometres of new trails and built many metres of boardwalk to encourage access to wetlands, while minimizing habitat and water flow disturbances. We also installed 7 kiosks of educational signage and 60 parking spots to allow safe and accessible entry for the public to conservation lands. Since keeping people safe is one of our priorities, we removed more than 3,500 hazard trees and closed or rehabilitated 20 kilometres of unauthorized and unsafe trails.



Downtown Toronto lies in the centre of over 1,400 kilometres of waterfront trails. We work with our project partners, such as Waterfront Toronto to create an integrated network of trails and parks around the city and the waterfront. In 2012, we completed two new shoreline parks to enhance the Waterfront Trail.

By inviting the public to enjoy our sites and trails and providing opportunities for them to understand our conservation efforts, we are helping to create future allies and advocates for our activities, while providing opportunities for recreation and reflection.

INCREASING ACCESSIBILITY BY REMOVING BARRIERS

To provide all community members with equal access to our facilities, we adopted a new Admittance Policy and Operating Procedures in 2012. This new policy will better allow persons with disabilities, children and the financially challenged and “active transportation” users – which include walkers, joggers, cyclists, in-line skaters and skateboarders, wheelchair users and snow shoe users – to enjoy our services and facilities.

Improved accessibility is facilitated through a number of our programs. We offer free admission for children aged 15 and under at all conservation areas year round and to Black Creek Pioneer Village on weekdays in July and August. Active transportation users do not pay admission fees and disabled and low-income individuals are offered lower entry fees. New Canadians enjoy one year of free admission to all of our public use facilities.

Thanks to the new admittance policy, attendance and education revenues grew by 13% from 2010 to 2012. Our plan is to continue working with local municipalities to expand access points to TRCA lands for active transportation users. Furthermore, we hope to increase recreational fishing opportunities through our newly developed Urban Recreational Fisheries Plan.

Our objective to provide access to nature can be a challenge when we are also tasked with protecting natural areas and habitats. We need to find the right balance of getting people exploring nature while preserving the ecosystem.

ENHANCING SCHOOL EDUCATION THROUGH OUTDOOR, HANDS-ON LEARNING

Our education programs help learners of all ages develop creative problem solving skills, ecological literacy, heritage knowledge and commitment to action. To reach our goals and help students better understand their surroundings, we combine scientific education with hands-on experiences, many of which are outdoors. By learning about and experiencing what sustainable city-building means first hand, we hope that our participants will adopt more sustainable thinking and behaviours.

In 2012 and 2013 we continued to align our programs with the Ontario school curriculum, with a particular enhancement of science-based learning. This includes a renewed focus on biodiversity, environmental stewardship and natural spaces in the schoolyard. This helps students become more aware of their local natural environment and better understand the issues impacting their immediate community.

“The authentic setting of Black Creek Pioneer Village and the richness and variety of the hands-on experiences offered have inspired learning and left lasting memories for my students and for me, a teacher. To have the opportunity to reach back in time and to discover the value in the everyday past lives of everyday people is magical.”

Elementary School Teacher

Annually, our education programs reach over 125,000 students from across the GTA. Our objective is to improve the collection and analysis of student data to measure our programing success in order to better understand how we are meeting the objectives of the “Building The Living City” strategic plan as well as the expectations of our program partners and supporters.

Our biggest challenge is that we can’t charge the actual cost of delivery to the user without creating financial hardship and impacting participation. The education budget in 2013 was \$7.5 million, but this included over \$2 million in capital expenditures for facility improvements. User fees, sales and admissions contributed \$3.8 million to the program and major donations amount to between \$0.5-1.0 million in most years. We have partnerships with 8 major school boards, but in most cases the boards don’t contribute funds to the program. As we see education as important in achieving The Living City vision we need to get even more creative in the future to try and fill the funding deficit.

NATURE BY THE NUMBERS	
Conservation areas	7
Camp grounds	3
Visitors per year or admission fees 2012/2013	Circa 795,000
Students involved 2012/2013	Circa 250,000

Case Study



BLACK CREEK PIONEER VILLAGE

In 2013, 47,000 students travelled back in time at Black Creek Pioneer Village. Ranging in age from pre-school to adult learners, students participated in interactive programs that celebrated Ontario’s cultural heritage and connected to the Ontario school curriculum in social sciences, health and physical education, environmental studies and science and technology.

Community Engagement

Input and participation from the community serve multiple purposes and are vital to our success

WE ENGAGE THE PUBLIC IN A VARIETY OF FORMS

Engaging the community and encouraging participation from the public in our work is central to our success. The community is granted many opportunities to interact with us – as visitors to our parks, participants in public consultations, participants in educational programs or volunteers that help deliver our research as well as in our monitoring, conservation and educational programs. Across the region we organize litter clean-ups, native species planting events, interpretive nature walks and homeowner workshops that teach sustainability living from low impact development and landscaping for water conservation to energy conservation and urban agriculture many of these programs are delivered through partnerships. For example, our Rouge Valley stewardship events are possible through collaboration with 36 partners. In 2013, our stewardship program in Durham Region organized more than 30 environmental events that engaged almost 1,600 residents.

ENCOURAGING RESIDENT INPUT ON SPECIFIC PROJECTS AND PLANS

To meet our mandate and deliver our strategy, we include community input and perspectives in our asset management and land planning processes. We host public engagement sessions for major projects and we facilitate stewardship committees to solicit input on the implementation of larger conservation land management plans and on the day-to-day activities on our conservation land holdings. In 2013, we conducted 27 public engagement sessions and stewardship meetings and distributed over 2,500 newsletters.

VOLUNTEERS ARE CRITICAL TO OUR ACTIVITIES

At TRCA, more than 9,500 volunteers participate in various programs and projects each year, such as birding work with staff at Tommy Thompson Park, participating in programs at Black Creek Pioneer Village, supporting the archaeology department, monitoring and recording observations for the Terrestrial Volunteer Monitoring Program, supporting educational programs at the Kortright Centre and participating in our planting and clean-up programs. Our volunteer opportunities attract people of all ages from all parts of the region. We have many volunteers who are over 80 years old and have volunteered with TRCA for many years. Others are newcomers and many have an environmental background, hoping to get their first experience in the field and in Canada.



We also engage volunteers through our Environmental Volunteer Network (EVN), which connects with residents across the region to provide meaningful volunteer opportunities on an as-needed basis. In 2013, over 700 new volunteers joined EVN, increasing our total pool of temporary volunteers to over 4,000. Each year these volunteers contribute over 30,000 volunteer service hours.

BEYOND PHYSICAL ENGAGEMENT

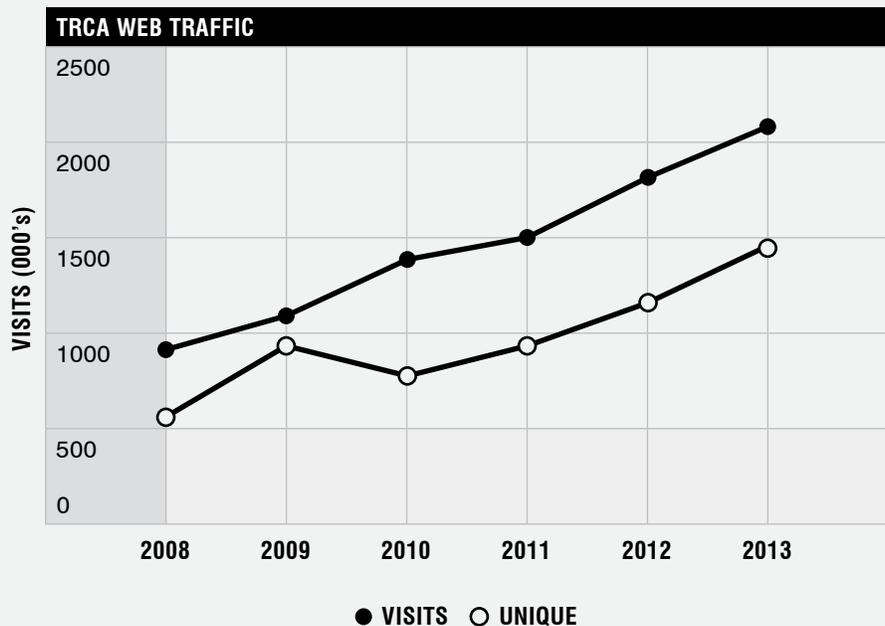
We use our online presence to communicate with the public in our region and around the globe. In 2012 and 2013 we had 1.17 and 1.44 million unique visitors to our website respectively. Our website provides a variety of information to our stakeholders. Likewise, we have regular feeds of event-related information through social media channels such as Twitter and Facebook. We manage at least 10 different Twitter accounts to promote our key programs.

Case Study



TRCA'S ARCHAEOLOGY PROGRAM

We value our cultural heritage and we have an in-house Archaeological Resource Management Unit to manage archaeological assessments on our sites. In 2013, we created an open-ended master plan of all of our assessments to act as an internal reference tool. In our region, there are archaeological sites that are more than 12,000 years old and many sites are culturally affiliated with Aboriginal communities or European pioneers. As custodians of these sites, we are responsible for protecting them and telling their stories to our visitors.



ARCHEOLOGY STATISTICS

TRCA owned or managed land subject to archaeological assessments	1,200 hectares (7% of total land)
Hectares assessed in 2013	39
Individual assessments in 2013	172
Archaeological sites added to our records in 2013	6
Artifacts curated in 2013	More than 20,000
Total archaeological sites registered in TRCA jurisdiction	475

Research and Monitoring

We aspire to be experts in watershed health, sustainable urban development and climate change adaptation

TRCA has a long history of supporting and collaborating on research related to water resources and ecosystem management, both with academic institutions and senior government partners. In recent decades, the Toronto region has been faced with a growing portfolio of complex challenges associated with climate change, unprecedented rates of regional development, and the growing momentum for a transition to urban sustainability. The emergence of these challenges have necessitated TRCA's move from a supporting, to a leading role in research, to develop new understanding and new solutions that are required to respond to solve contemporary problems. As such, the TRCA now undertakes and commissions research with academics, non-governmental organizations and private sector partners in fields as diverse as ecological restoration, green buildings, and sustainability governance. This research is used to provide critical insights into the unique challenges of the Toronto region and guides policy, programs and projects in all TRCA business areas.

RESEARCH IS INTEGRAL TO WHAT WE DO

In 2012 and 2013, TRCA conducted or participated in research related to a wide range of urban environmental management and sustainability issues. The TRCA Sustainable Technologies Evaluation Program continued to assess the performance of technologies for reducing the impact of urban runoff on streams, rivers and Lake Ontario, as well as energy efficiency and renewable energy generation technologies for green buildings. Through its ongoing leadership of the Ontario Climate Consortium, the TRCA significantly improved the availability of future climate modelling data for Ontario and piloted the application of advanced climate change risk and vulnerability assessments TRCA watersheds, in partnership with government and academic partners from Canada and the US. Staff in departments throughout the organization partnered with Ontario universities on dozens of research studies - many of them supported by major national



research grants - on topics as diverse as the impacts of development on wetlands, the behaviour and movement of fish in the Lake Ontario waterfront area, the outcomes of restoration on urban streams, urban greenhouse gas reductions strategies, and harnessing social innovation to accelerate progress towards sustainability in the Toronto region.

WE STUDY ECOLOGICAL SYSTEMS AND CATALOGUE DATA TO SUPPORT SMART CONSERVATION AND DEVELOPMENT

Our extensive data collection and supplementary analysis provide scientific evidence of the health of our watersheds and subwatersheds. We conduct research and monitor our watersheds under two main program areas. The Regional Watershed Monitoring Program (RWMP) is the primary monitoring program. It is a science based, long-term initiative to collect high quality data from terrestrial and aquatic ecosystems. All data collected through the RWMP is shared with partner municipalities and other agencies. The information gathered through the RWMP provides input into restoration efforts as well as planning and development projects.

The second group of research programs is special research and monitoring projects where we study localized issues that have a more limited time frame than RWMP initiatives. Two examples of these special projects are the Natural Channel Design and Duffin Heights Monitoring programs. The purpose of the Natural Channel Design Program is to construct a stream channel and floodplain to replicate an undisturbed watercourse by imitating natural channel system form and function. Restoration of stream channels not only helps us preserve streams but also helps us obtain and gain biodiversity. The goal of the Duffin Heights Monitoring Program is to gather information of the area under pre- and post-development conditions to determine changes in local plant and animal species, as well as physical site characteristics that can be attributed to urbanization. Once this information is gathered, it will be used to support climate change adaptation and mitigation efforts.

In 2013, almost 1,500 sites were monitored by approximately 20 TRCA staff members and more than 150 volunteers, providing more than 382,000 soil, water, plant or animal samples. This includes long-term sites that are part of the RWMP and sites that have been sampled as part of a specific project. These efforts compiled more than 11 million data records that document the condition of the region's aquatic and terrestrial systems.

A UNIQUE ROLE

"The collected data and its reporting not only contributes to measuring the performance of our management decisions but also contributes to facilitating a region-wide approach to sustainability while telling the story of the Toronto region and its ecosystem health." (TRCA Watershed Monitoring and Reporting Progress Report 2013)

A LONG-TERM MANDATE

We collect and manage vast amounts of data. It is a challenge to select the most salient information and explain to our stakeholders how it should guide policy development and decision-making. Over time, we have obtained a better understanding of conservation issues faced by the region; however we are sensitive to the desire of our stakeholders to see short-term results. We strive to balance the need for regular reporting of our progress and flagging emerging issues, but we also understand the long-term nature of environmental monitoring and incorporate this understanding in our decision-making.

Case Study



METEOROLOGICAL MONITORING AND HYDROMETRICS

Our meteorological monitoring program helps us develop an understanding of the impacts of climate change on the region and required adaptation strategies. We commenced the Meteorological Network in 2006, partnering with academic institutions. This Meteorological Network monitors rainfall, wind direction and speed, air and soil temperature, relative humidity, solar radiation, snow depth, barometric pressure, soil moisture, evaporation and leaf wetness in the region. Various governments, private sector agencies, educational institutions and the public consistently request this data for use in studies and modelling projects. For instance, our data was used to determine the conditions of several watersheds before the July 8, 2013 flood.

We also launched the Hydrometrics Program (HYDMET) which ensures the collection, interpretation and dissemination of water quantity and quality as well as meteorological data that is vital to meet flood and watershed management needs in the region. HYDMET staff members maintain and operate over 120 gauging stations that measure stream flow, precipitation, snow pack, baseflow, water quality and climate. The information collected by HYDMET is regularly used by internal and external clients for a variety of projects including flood warning, flood infrastructure operations, water budget modeling and various natural heritage and climate change studies.

ADVANCING ADAPTATION STRATEGIES FOR CLIMATE CHANGE

Our policies and procedures must evolve in light of a changing climate. Through our work as the secretariat for the Ontario Climate Consortium (OCC), which is comprised of Ontario scientists, researchers and practitioners, we manage and support climate change research and collaboration. In 2013, the OCC hosted its first Annual Climate Change Symposium with over 180 participants. We have also led climate change risk assessment projects in the Region of Peel with a focus on understanding the impacts on built and natural systems. We are also currently leading a Natural Resources Canada funded project to undertake an engineering focused climate change risk assessment of electricity infrastructure to enhance resilience to extreme weather impacts. This work serves to further enhance our understanding of the implications a changing climate may have on built and natural infrastructure.

The TRCA leverages its climate change adaptation expertise and networks to support our partner municipalities and other community stakeholders in their efforts to prepare for and adapt to the impacts of climate change. TRCA staff have participated and have provided support to the development of virtually all of the climate change strategies and response plans that have been developed by Toronto region municipalities, and also provided input on climate change policies in municipal Official Plans and Strategic Plans. Further, the Authority has successfully advocated, in partnership with Conservation Ontario, for stronger wording related to climate change adaptation in the Provincial Policy Statement for land use planning and for the development by the provincial government for stronger technical, policy and financial support to municipalities as the key delivery agents for climate change adaptation actions to protect communities, the environment and the economy in Ontario.

Policy Development

Good policy is a foundation for meeting our collective goals, protecting resources today and enabling our envisioned future

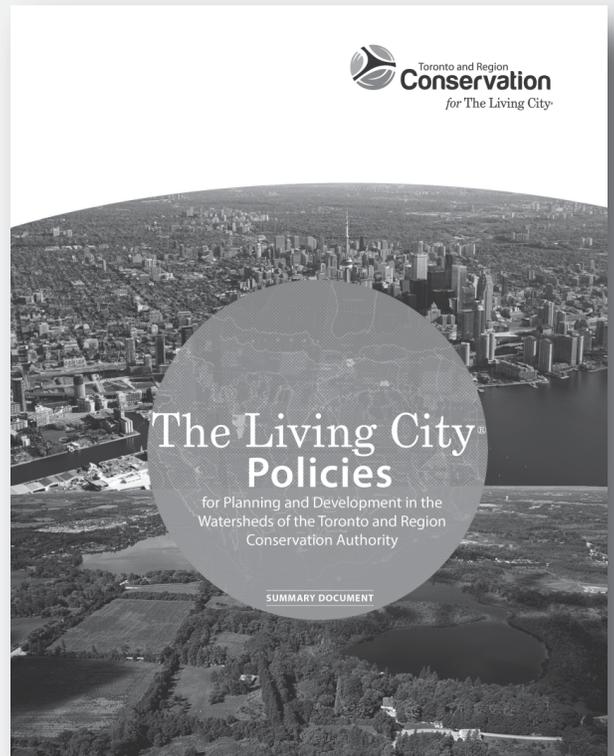
INSIGHTFUL, FORWARD LOOKING POLICY HELPS US BUILD THE LIVING CITY

Our policy input and development review activities tackle technically complex challenges. Through our participation in the municipal decision-making process that guides growth, redevelopment, revitalization and intensification throughout TRCA's jurisdiction, we advocate to our municipal partners and stakeholders to integrate innovative strategies for watershed management, ecological design and other sustainability considerations that support The Living City objectives.

We assist municipalities by providing advice on land use and development direction within flood vulnerable communities. In 2013 we were involved in 11 provincially-guided comprehensive reviews and revitalization studies for flood vulnerable areas across the jurisdiction to facilitate improved flood management strategies. This work is very progressive and is increasingly important in light of heightened severe weather concerns due to climate change.

DEVELOPING THE LIVING CITY POLICIES

In 2012 and 2013, we drafted what will be TRCA's main policy document called The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority. This document will guide implementation of our regulatory authority and participation in planning and environmental assessment processes. It will replace TRCA's Valley and Stream Corridor Management Program, which has been our main policy document since 1994. In developing the Policies we have solicited public comment and conducted stakeholder consultation with municipalities, provincial ministries, environmental non-government organizations, neighbouring conservation authorities and representatives from the development industry. The renewed policy framework will better achieve The Living City objectives as we assist our partners to plan and design sustainable communities.



*Case
Study*

**MARKHAM'S OFFICIAL
PLAN**

Adopted by City Council in December 2013, the new Official Plan (OP) of the City of Markham provides a vision for sustainable growth and will guide development in Markham until 2031. The OP recognizes that Markham's landforms and watercourses connect and integrate its local ecosystem with a larger ecosystem. As such, the OP is based on a holistic approach to natural heritage, agriculture, urban forestry and water resource planning and provides policies and principles to protect the natural environment while establishing healthy communities. TRCA worked with Markham staff to provide its technical expertise during the development of the OP.



VAUGHAN METROPOLITAN CENTRE

The Vaughan Metropolitan Centre (VMC) is another major redevelopment area that TRCA planning and environmental assessment staff continued to review through 2013 in conjunction with the City of Vaughan, the Region of York, and developers. Through remediation and restoration of the Black Creek tributary that runs through the area, several hectares of land will be removed from the flood plain. Edgeley Pond, located at the northern extent of the VMC, currently provides stormwater quantity control for approximately 770 hectares of the surrounding urban area. Constructed over 20 years ago before modern stormwater controls were required, the pond will be retrofitted to bring it up to current stormwater management standards for water quality treatment, erosion control and flood protection. The overall plan for the VMC will facilitate a vast improvement in the health of the Black Creek sub-watershed. Its multiple benefits will include: improved stormwater management, access to public greenspace, and simply a beautification of a substantial pervious area that improves water quality, air quality, noise attenuation, and natural aesthetics in an area currently dominated by pavement, steel, and concrete.

Government Funding and Funding Diversity

Diversified, stable funding is critical to ensure our financial sustainability

ABOUT 30 PERCENT OF OUR FUNDING COMES FROM NON-GOVERNMENT SOURCES

Stable and diversified funding streams are critical to delivering our strategic plan. Currently, approximately 60 percent of our funding comes from our municipal partners while 10 percent is from federal and provincial governments and the remaining 30 percent is from the private sources. Although our revenue decreased by 10% from 2012 to 2013, the funding stream split was similar to previous years. Our largest funding partners are The City of Toronto (\$21.3 million), The Regional Municipalities of Peel (\$13.9 million), York (\$8.2 million) and Durham (\$1.4 million), based on 2013 revenue.

“Building The Living City” strategic plan aims to build partnerships and new business models to increase our financial stability by developing diverse, new revenue sources. Our goal is to increase the diversity of funding sources and the total amount of funding received to support/leverage our programs.

To achieve this goal we are pursuing innovative actions around multi-partner collaboration to leverage our funding by extending services to other regions, offering educational services to fee-paying recipients and engaging in contract and fee for services with all levels of government and the private sector. For example, nearly 25% of the revenue we receive from municipal governments is for products and services contracted from TRCA, outside of the annual budget discussions with these funding partners.

Each division has been tasked with looking for ways that they can provide products or contract services or generate fee for service revenue from existing and new funding partners. For example, the education section has been successful in leveraging its expertise to develop and deliver programs across Canada with the support of donations from private foundations. The Restoration Services Nursery has been successful in marketing its products to organizations across the GTA. In addition, the Planning and Development Division has established a fee for service model to improve the financial self-sufficiency of their service.

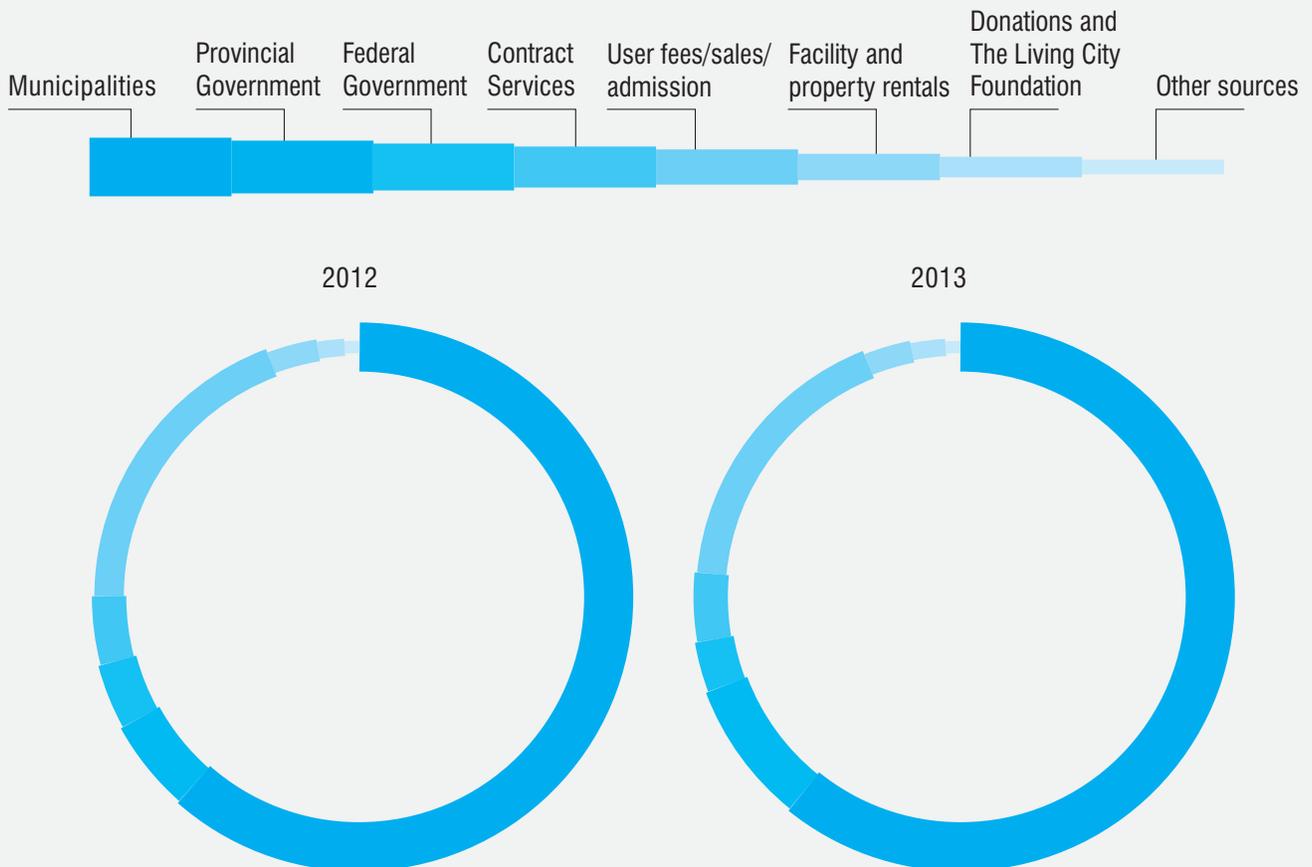
Case Study

The education section at TRCA has taken on leadership and coordination of the Canadian arm of the Monarch Teachers Network (MTN), a multi-agency program that is supported by The W. Garfield Weston Foundation and the Educational Information and Resource Centre, a US-based public agency. MTN of Canada is a growing network of educators who believe that by bringing nature to the class room, we can teach, inspire and connect students to the natural world. Through the MTN of Canada, program funding was obtained from The W. Garfield Weston Foundation, TD friends of Environment Foundation, local community groups and workshop participants to support professional development, learning and habitat creation. The program held 13 workshops in 2013 reaching 155 participants and through those teachers potentially 115,000 students.

Case Study

In 2013 the Sustainable Communities Service Area received municipal revenue of \$3.1 million, which was slightly more than half of the total revenue for the Service Area (52%). The additional revenue was from a variety of sources including, provincial (\$447,000), federal (\$1.3million) and other sources (\$1.1million), for combined revenue of \$5.9million. TRCA was able to leverage the municipal funding nearly one to one in support of sustainable community programs such as Partners in Project Green (PPG), Sustainable Neighbourhood Action Plans (SNAP) and the Sustainable Technology Evaluation Program (STEP).

FUNDING DIVERSITY



Eco-efficiencies

As an organization dedicated to conservation and building sustainable communities, we are walking the talk and showing leadership by example

CONSERVATION IS GOOD FOR THE BOTTOM LINE

Although we are in the business of sustainability, we recognize that our daily operations can negatively impact the environment. Our operations, such as the use of vehicles and equipment, energy consumption, the products we buy and what we do with our waste, speak to our operational sustainability impacts. Our scale is significant. We own and manage more than 18,000 hectares of land. We have facilities and offices situated on approximately 20 sites across the Toronto region. Furthermore, the activities of our employees, tenants and visitors leave a “footprint” primarily through energy and water consumption, waste production and associated carbon emissions. In recognizing that reducing these impacts can positively affect both the environment and the bottom line of our organization, we group these sustainability aspects under the term “Eco-efficiencies”.

THE CSR PROGRAM DEMONSTRATES AUTHENTICITY AND PROVIDES LEARNING OPPORTUNITIES TO BUSINESSES

We track and report on our operational sustainability impacts, i.e. our Eco-efficiencies, through our Corporate Social Responsibility (CSR) Program. Our overall objective is to minimize our impact on the environment as well as demonstrate to businesses and residents of the Toronto region that reducing their environmental impacts is good for business. We have set short and long term targets for our most significant environmental impacts. We deploy two main strategies to achieve our targets. Firstly, we engage our employees, tenants and visitors to change behaviours to sustainable ones through awareness raising campaigns, ongoing programs and



Environmental certifications
 Many of our sites and golf course are certified by the Audubon Cooperative Sanctuary Program. We also have EcoCentre-certified facilities. Both certification programs are operated by well-known not-for-profit organizations and the programs offer support and guidance to site managers as they work to reduce their environmental impact, enhance their operational performance and promote awareness and behaviour change.

demonstration projects. For example, the CarbonCats program is a staff outreach program, organized by EcoTeams at major TRCA sites that educates our staff and helps staff adopt sustainable habits. Secondly, we invest in more efficient and green technologies as part of our facility refurbishment and maintenance programs in which we also seek to demonstrate the viability of new technologies.

SUSTAINABILITY IS MANAGED LIKE ANY BUSINESS OBJECTIVE

We have dedicated staff members who are responsible for developing and managing our CSR Program. They recommend focus areas, define performance indicators, provide implementation tools, coordinate implementation and measure and report on our impacts. At each of our sites operations staff along with the EcoTeams are responsible for executing the CSR Program. Approximately 5% of our staff has EcoTeam responsibilities. The Chief Executive Officer is ultimately accountable to our Authority Board Members for achieving our operational sustainability objectives and targets.

In the following two sections we report on our achievements, progress to targets, challenges and future plans. We also discuss our work in building sustainable communities in the “Green Economy” section (p35).

SELECT ENVIRONMENTAL PERFORMANCE TARGETS	
Performance Indicator	Target
Carbon emissions	Become carbon neutral by 2025
Energy consumption	Reduce total energy consumption 15% against 2005 levels by 2015 and 50% against 2005 levels by 2025
Renewable electricity	Source 80% of electricity from renewable sources by 2015
Fleet fuel efficiency	Achieve average of 12 litres per 100 kilometres by 2018
Vehicle fleet	50% of vehicle fleet to use alternative fuel by 2020
Water consumption	Reduce total potable water consumption by 35% below 2009 level by 2025
Waste diversion	Divert 80% of total waste from landfill by 2018

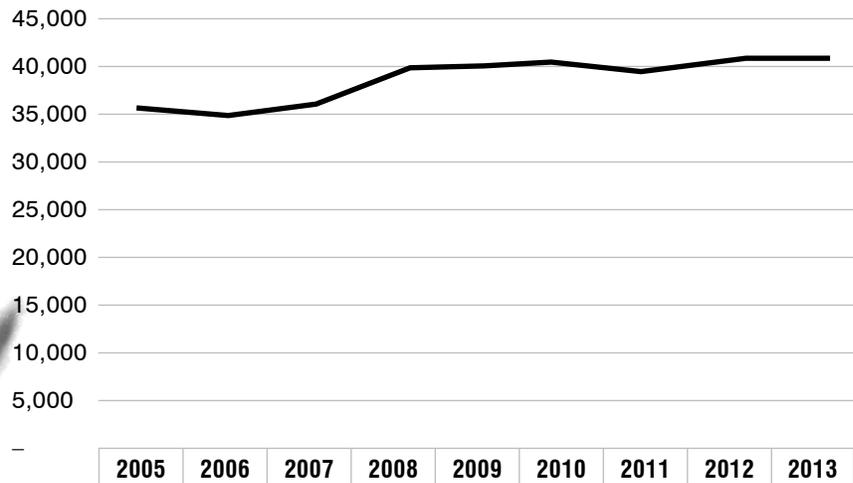
Energy Consumption and Greenhouse Gases

While we are reducing our energy and carbon footprint per employee, the challenge to reduce overall impacts remains

ENERGY FOOTPRINT STEADY AS CONSUMPTION PER EMPLOYEE IS DOWN

We use many types of energy at our sites and in our fleet. For example, our offices are heated by natural gas, oil and propane. Electricity powers our cooling, ventilation, lighting, computers, office equipment and appliances. Diesel and gasoline power our yard equipment and fleet. Back-up generators run on diesel and natural gas. In 2013, our total energy consumption was around 41,000 Gigajoules (GJ), equivalent to the energy required to power almost 1,000 GTA homes. Our total energy consumption has remained fairly steady over the past 5 years, taking us off track to achieve our targeted 15% energy reduction against 2005 levels by 2015. To achieve this reduction, we will need to reduce our energy consumption by almost 35% below 2013 levels over the next two years .

ENERGY CONSUMPTION 2005 – 2013 (GIGAJOULES)



The good news is that, on average, energy consumption per employee has decreased by an average of 2% per year between 2008 and 2013 to 67 GJ per full time equivalent employee (FTE). Our strategy is to continue to affect change through awareness and behavioural change programs at each of our sites, while undertaking a thorough facility retrofit program, supported by results from site audits. Our staff is dedicated to reducing our environmental consumption—our EcoTeams are working hard to develop innovative approaches, our facilities management group is prioritizing energy and water efficiency opportunities as light and facility retrofit programs are undertaken and our IT department is implementing initiatives to replace servers, photocopiers, printers, workstations and monitors with energy efficient models.

We are already seeing some early results of our retrofit program. For example, the installation of a new heating system at our head office reduced natural gas consumption by 8%.



In 2012, a lighting retrofit at Black Creek Pioneer Village was estimated to save almost 1% of our annual electricity consumption. The project included changing existing lights to more efficient compact florescent and LED (light-emitting diodes) lights. With incentive funding from the Ontario Power Authority, the project had a pay back of less than one year. The energy efficiency improvements described in the Kortright Visitor Centre case study on page 32 have achieved electricity savings of over 18,000 KWh per year equating to a 16% reduction in use.

CARBON EMISSIONS REDUCTION THROUGH ENERGY EFFICIENCY AND FUEL SWITCHING

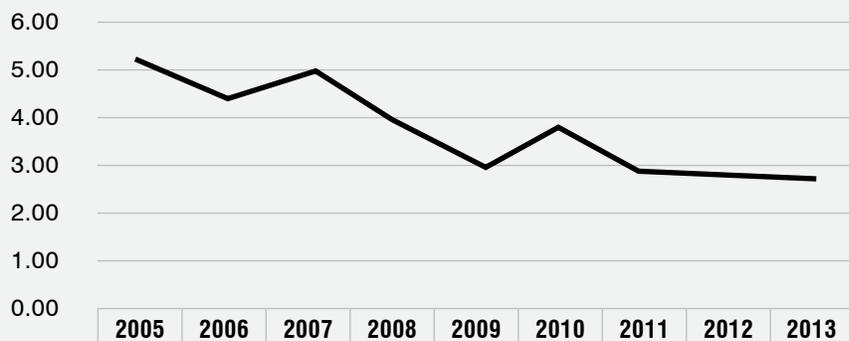
The reduction of greenhouse gases, generally referred to as carbon emissions, from TRCA's operations is also an important objective of our CSR Program. Carbon emissions are a major contribution to climate change and governments and organizations around the world are setting reduction targets. In calculating our carbon emissions, we include energy used to light, heat and cool our facilities and fuels from owned and leased vehicles. Staff business travel in their cars is also included.

TRCA's total carbon emissions have remained fairly stable since we started to measure them in 2005, but are trending downward when emissions per employee are considered. We reduced our overall footprint by 4% annually 2008-2013 and since we started to measure in 2005, carbon emissions per employee decreased by 46%. In 2013 our carbon emissions were 1,700 tonnes of carbon dioxide equivalents (tCO₂e). Our target is to become carbon neutral by 2025.

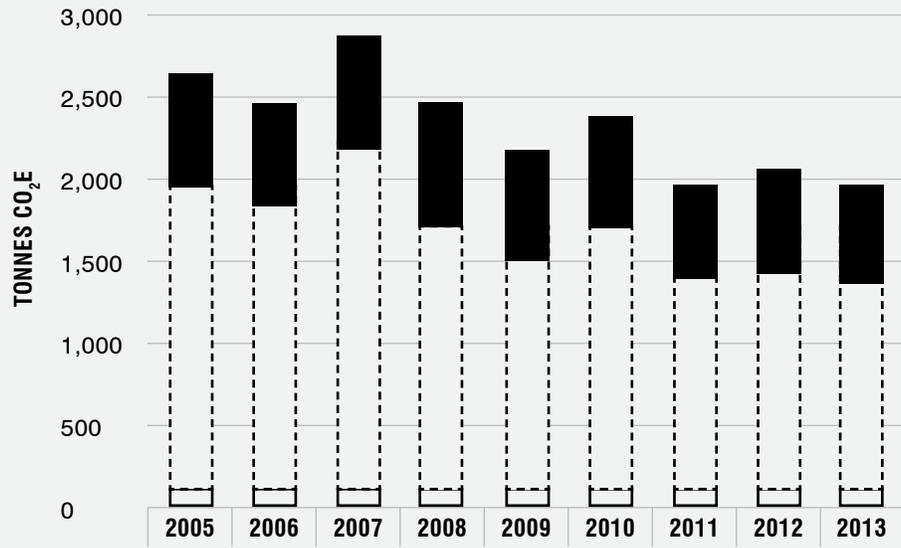
In reviewing our carbon emissions data in detail, we see that our emissions profile has improved over the years as heating oil has been replaced by natural gas and as Ontario's electricity grid has phased out coal power. At select facilities, we are also procuring electricity and gas from renewable sources and this has also reduced emissions.

While our energy efficiency programs have stabilized our carbon footprint during a time of organizational growth, our major challenge relating to both energy and carbon emissions is to make a radical shift in the type of energy we source and use. Only a significant uptake of renewable energy at facilities and in vehicles will help us achieve this target, which means achieving this shift with available resources will be our primary focus going forward. We have already begun this transition with renewable energy installations at The Living City Campus and Restoration Services. Collectively in 2013 the solar and wind installations at these facilities produced almost 44,000 kWh of electricity.

CARBON EMISSIONS PER EMPLOYEE (TONNE CO₂E/FTE)



CARBON EMISSIONS BY SCOPE



- Direct scope 1 (natural gas, equipment and vehicle fuels)
- ▤ Indirect scope 2 (electricity)
- Indirect scope 3 (staff vehicle fuel)

Case Study

KORTRIGHT CENTRE RETROFIT PROJECT



The Kortright Centre Retrofit Project is our most significant energy retrofit project. We improved energy efficiency at this site by reskinning the main building, improving insulation, replacing windows, changing heating and cooling systems, incorporating natural lighting and completing a comprehensive lighting retrofit. We also installed a geothermal heating and cooling system to decrease the use of purchased electricity at the site and associated carbon emissions. We are yet to complete a rain water collection system. We will use the learnings from this project to inform future retrofit projects and disseminate information to stakeholders in our communities to help accelerate uptake of energy efficiency and renewable energy technologies.

Water Conservation and Waste Management

We strive to mimic nature's efficiencies by properly managing and minimizing water use and waste generation, which is critical to support the TRCA brand

MUNICIPAL WATER USE IS GOING DOWN

We use water for drinking, washing and irrigation at our facilities and parks. We source water from municipal systems and wells. Improving and demonstrating smart water use is very important to us. We envision our facilities as models for managing water consumption and stormwater runoff. Our target is to reduce our municipal water consumption by 35% below 2009 levels by 2025. We also seek to better measure water use from ground wells so we can develop comprehensive strategies and targets.

Our major water management strategies include water use monitoring, replacing fixtures, faucets and appliances with water efficient models, repair leaks, rainwater harvesting and elimination of potable water irrigation. Overall our consumption of water from municipal sources has been highly variable, mainly due to the pools and splash pads that we operate; draining a pool one year in order to undertake repairs necessitates increased water consumption when we fill the pool. Our main objective is to better understand our general water consumption and water required for pools. This will allow us to identify and implement appropriate reduction strategies. In 2013, our water consumption from municipal sources was 74,000 cubic metres of water. To achieve our target we need to reduce annual consumption by almost 25,000 cubic metres, equivalent to the volume of 10 Olympic swimming pools.

WATER CONSUMPTION

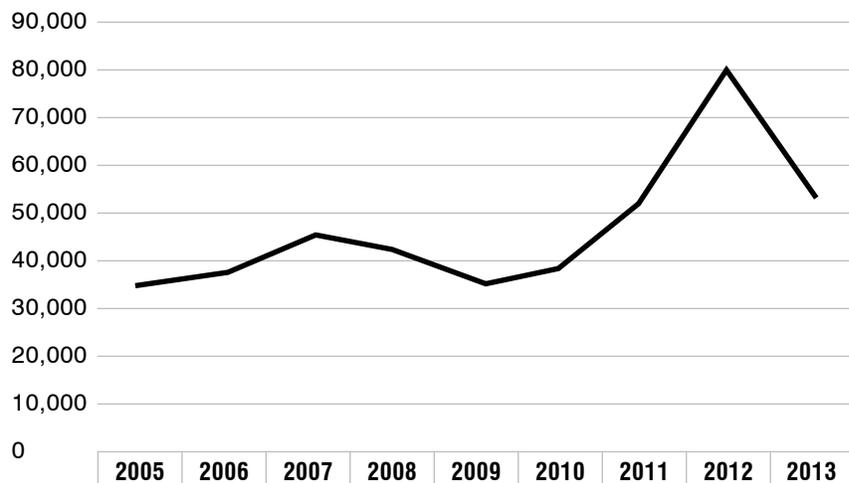


Figure 1: Metered municipal and well water consumption at TRCA facilities, excluding facilities that have splash pads and pools. Water consumption increased in 2010 with the acquisition of Bathurst Glenn Golf Course. A water leak at Indian Line Campground and dry conditions at the golf course caused the spike in water use seen in 2012.

ORGANICS DIVERSION IS A BIG WIN

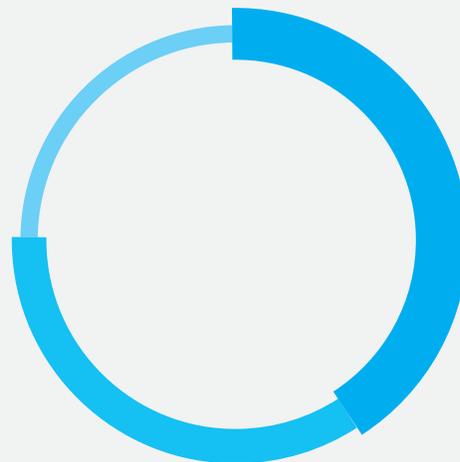
We aim to minimize waste generation and maximize waste diverted from landfill. As a steward of conservation and nature, it is important to us that our employees, business partners and visitors not only contribute to our sustainable waste management efforts, but also witness us adopting

best in-class approaches to reduce, reuse and recycle. Although we have had recycling programs in place for quite some time, 2013 marked the beginning of a multi-phase development of a sustainable waste management program. Driven by data collected from over 20 audits of our recycling and waste streams, the program has for the first time provided us the granularity to fully understand our waste composition and quantities. This information is being used to develop tailored strategies geared to increasing waste diversion at our sites. Our corporate goal is to achieve 80% diversion of landfill waste by 2018.

Although only two of our sites have so far reached the 80% diversion rate, our office EcoTeams have put in place comprehensive approaches to waste diversion, including organizing campaigns to avoid generating waste and placing effective signage on disposal containers. These employee driven activities will benefit from the data and recommendations coming out of our sustainable waste management program in the coming years.

A significant challenge has been to obtain accurate waste output and diversion data from our haulers. In 2013, we decided to hire a new waste hauler with a proven track record of helping clients increase their diversion rates and capture waste metrics. At the majority of our sites we now receive monthly reports on how much recycling and waste was collected. This information feeds into our strategies and help us to measure our progress. Looking at our available data for 2013, the total waste output, for 10 offices and field centres, was 135 tonnes. That is equivalent to 165 dumpsters of garbage. Of this total, 35% was recyclables and 24% was organic waste recycling.

2013 WASTE DIVERSION AT TRCA OFFICES AND FIELD CENTRES



DO AS YOU SAY: EXAMPLES OF PREFERRED PRACTICES

- Switch off printers, computers, monitors and lights when not in use – reinforce with stickers and EcoTeam volunteers
- Include sustainable procurement principles in purchasing policy
- Use of solid ink printers
- Only use EnviroSeal green cleaning products
- Mandatory use of FSC certified paper products
- Source 40% of food products locally
- Composting and recycling bins at each site
- Eliminate plastic water bottles
- Put in place electronics recycling program
- Ban non-native plants and pesticide use
- Use organic fertilizers

The graph above shows the 2013 rate of waste diversion to compost and recycling streams at our offices, field centres, Black Creek Pioneer Village and Kortright Centre. In 2014 we plan to undertake waste audits of the remaining ten facilities and at that point, will be able to report on our corporate wide waste footprint.

Green Economy

Creating economic opportunities through sustainability innovation and best practices

THERE ARE MANY ECONOMIC BENEFITS OF A GREEN FOCUS

Our “Building The Living City” strategic plan’s first leadership strategy is to “green the Toronto region’s economy”. In the work we do to create sustainable communities, we are dedicating resources to grow the green economy. Our programs are designed to improve the sustainability performance of existing economic sectors, increase the uptake of sustainable technology, materials and practices or build new sectors in growth areas such as renewable energy and green buildings. This will benefit the region by enhancing resiliency, reducing resource consumption and greenhouse gas emissions from industry sectors, all the while greening existing jobs and creating new jobs and contributing to economic growth.

To grow more sustainable industry sectors, we facilitate leader conferences, idea incubation and cross-industry collaboration. We are pioneering the establishment of eco-business zones as a platform for better integration of energy and material use between business the surrounding community. We are a hub for training and transitioning programming to allow workers to acquire the skills and experiences needed to obtain “green jobs”. We also promote urban agriculture, tourism and cultural landscapes to contribute to regional economic development.

The Living City Campus at our Kortright Centre site is being developed to inspire people to live more sustainably and become a driving force in the green economy. The Campus grows out of TRCA’s vision for healthy urban environments and will offer various programs and attractions that are of interest to technical experts, students, technology innovators, business entrepreneurs, community leaders and the broader public. We hope to attract at least 100,000 visitors per year once the Campus is fully developed. Like a traditional campus, The Living City Campus will be centred on facilities dedicated to inspiring people and furthering knowledge through courses, workshops, exhibits and symposia. The Living City Campus is well underway with partnerships with 8 academic organizations for research on site and 35 companies expressing interest in providing products and services.



Case Studies

STEPS TO LOW CARBON INNOVATION

Our Sustainable Technologies Evaluation Program (STEP) was established to accelerate the uptake of green technologies in the Toronto region, in the public sector and in institutional, commercial and residential settings. STEP provides monitoring data and performance evaluation of sustainable technologies. This exercise allows us to build public and institutional confidence and reduce the perception of risk associated with new technologies. In 2013, STEP accomplished many milestones in assessing new products, providing best practice design guidance and disseminating research.

Between 2012 and 2013, TRCA scientists and engineers collaborated with industry and academic partners in addressing knowledge gaps related to sustainable technologies. We made great strides in learning about renewable energy through a joint study with York University on small wind turbine performance, which showed how this technology can be best applied and how it can save home owners money. We also learned more about residential heating and cooling technologies through collaboration with Ryerson University by evaluating and comparing two high efficiency ground and air source heat pumps. The results revealed air source heat pump technologies to be much more feasible and cost-effective than is commonly believed, paving the way for this low carbon technology to be seriously considered as an alternative to conventional residential heating and cooling systems.

THE LIVING CITY CAMPUS & BRE INNOVATION PARK

In 2012, TRCA entered into a partnership with the Building Research Establishment (BRE) to develop the BRE Innovation Park at The Living City Campus. Feedback from a stakeholder workshop informed the development and completion of a business plan, performance standards and development briefs that will serve as benchmarks for construction that is scheduled to begin within the Park in 2014. As part the international BRE Innovation Parks Network, seven new demonstration buildings, along with the existing LEED Platinum Archetype Sustainable House, will act as a Canadian hub of demonstration, research, measurement and verification of innovative construction methods, products and technologies. The BRE Innovation Park at The Living City Campus will generate change in industry practices, stimulate societal demand and influence future policy and legislation for a more sustainable built environment.

PARTNERS IN PROJECT GREEN ENABLES PALLET REUSE AND DIVERSION

Partners in Project Green (PPG) is a public-private partnership co-led by the TRCA and the Greater Toronto Airports Authority. By providing sustainability information, programs and access to experts and a community of like-minded peers, PPG helps businesses located around the Toronto Pearson International Airport collaborate, save money and improve their sustainability performance in the areas of energy, waste management, water stewardship and stakeholder engagement.

A 2013 industry roundtable and workshop on pallet waste and diversion is a good example of how PPG unlocks sustainability opportunities through collaboration. PPG's Manufacturing & Logistics Consortium, which includes manufacturers, logistics companies, recyclers and haulers, was convened to devise solutions to increase pallet diversion. Every year hundreds of millions of new pallets in different materials and formats are being shipped into Canada, making efficient waste diversion difficult to achieve. Wood pallets are the most commonly used type and while many wood pallets are reused, a great amount of wood waste is generated over time. Plastic and metal pallets, on the other hand, last for many years and are fully recyclable, allowing producers to emphasise lower lifecycle costs and improved environmental attributes. Despite their advocates, the current market share of plastic and metal pallets is so small that the effect on overall pallet diversion is minimal. PPG's roundtable brainstormed solutions to identified issues associated with pallet waste, including establishing a "milk run" collection, creating a centralized wood depot, standardizing a green procurement policy, forming a pallet cooperative and developing a community-wide data map to improve results. PPG is monitoring the results of this innovative type of collaboration.

Taking Sustainability to the Next Level

We will take guidance from our stakeholders as we are Building The Living City

With the launch of the “Building The Living City” strategic plan in 2013, TRCA committed to addressing urban challenges through 12 leadership and enabling strategies. The “Building The Living City” strategic plan purposely extends our organization’s activities outside the “traditional” regulated mandates of conservation authorities, but that does not mean less attention will be paid to these mandates.

In the stakeholder consultation that informed the content of this report, many of the external stakeholders expressed a concern that TRCA could face challenges if our focus became too broad. Our stakeholders clearly told us that it is important to preserve the recognized expertise we have in flood protection and conservation to manage climate change-related issues and a forecasted increase in the region’s population. Stakeholders suggested that continuing to prioritize our strengths and efforts related to legislated mandates would provide a license to embark on complementary programs to deliver the “Building The Living City” strategic plan.

We have found through our consultations and the preparation of this report that we must improve the dialogue we have with our stakeholders. In 2013 we did more in water management, flood protection and biodiversity than we ever have in the past and 93% of our revenues are allocated to delivering our legislated mandate. Despite only 7% of our revenues dedicated to sustainable community program development and implementation many of our stakeholders feel that these programs and activities dominate our agenda. Clearly we need to improve our communication. We commit to continue to report progress on all aspects and keep this concern at the forefront in managing TRCA’s operations and programs.

Looking forward, we aspire to continue the sustainability reporting process that the publishing of this report pioneered. In the past two years we have accomplished a significant amount of work in accurately and consistently defining and measuring TRCA’s activities and outcomes. In doing this, we have and will continue to create new types of metrics, collect data, build information systems, design scorecards and obtain input from a wide group of stakeholders. Having worked on this report, we realize there is still much work to be done in terms of attributing metrics to different material sustainability aspects. However, measuring our success will be one of our most significant sustainability actions as it helps stakeholder and funding partners see our value and continue their support for TRCA’s programs.

We hope to significantly improve our ability to measure and describe challenges and advances in our most important sustainability aspects with the publishing of our next sustainability report. We also hope to be able to report on the sustainability of the region and the key actions society needs to implement in order to achieve The Living City vision in the Greater Toronto Area.

BUILDING THE LIVING CITY**LEADERSHIP STRATEGIES**

1. Green the Toronto region's economy
2. Manage our regional water resources for current and future generations
3. Rethink greenspace to maximize its value
4. Create complete communities that integrate nature and the built environment
5. Foster sustainable citizenship
6. Tell the story of the Toronto region

OUR VISION

The quality of life on Earth is being created in rapidly expanding city regions. Our vision is for a new kind of community – The Living City® – where human settlement can flourish forever as part of nature's beauty and diversity.

ENABLING STRATEGIES

7. Build partnerships and new business models
8. Gather and share the best urban sustainability knowledge
9. Measure performance
10. Accelerate innovation
11. Invest in our staff
12. Facilitate a region-wide approach to sustainability

OUR MISSION

To work with our partners to ensure that The Living City® is built upon a natural foundation of healthy rivers and shorelines, greenspace and biodiversity, and sustainable communities.

Additional Information

You can find more information about TRCA and the GRI reporting guidelines in the following documents :

- [Building The Living City](#)
- TRCA annual reports [2012](#) and [2013](#)
- [TRCA CSR Report 2011](#)
- [2011 Living City Report Card](#)
- [TRCA Watershed Monitoring and Reporting Progress Report 2013](#)
- [GRI G4 Reporting Principles and Standard Disclosures](#)
- [GRI G4 Implementation Manual](#)
- [GRI G4 NGO Sector Supplement](#)
- [Audited financial statements 2013](#)

If you have any questions regarding the content in this report, please contact bmcintyre@trca.on.ca

DEFINITIONS

These terms appear throughout the sustainability report:

Building The Living City®

Strategic directions that the TRCA intends to pursue from 2013 to 2022. The strategies emphasize TRCA's commitment to preserving and enhancing the well-being of the region's residents through protection and restoration of the natural environment and the fundamental ecological services the environment provides.

EcoTeam

Groups of TRCA staff at a particular site or facility that have volunteered to undertake internal sustainability related initiatives.

Green buildings

Green buildings integrate environmental and social attributes that improve building performance in order to reduce the building's impact on the environment.

GRI

Global Reporting Initiative. An international standard-setting body for sustainability reporting that helps companies and organizations clearly describe the environmental and social impacts of their everyday activities, provide information about governance and demonstrate the link between strategy and commitment to a sustainable economy.

Living City Vision

TRCA's vision statement: "...a new kind of community...where human settlement can flourish forever as part of nature's beauty and diversity."

Retrofit program

Adding or altering a component of an existing building improve operational efficiency and overall building performance.

Riparian

Habitats or zones on wetlands adjacent to rivers and streams.

Sustainability aspect

Economic, environmental or social impact/issue/area that relate to an organization's activities.

Terrestrial Natural Heritage System Strategy

A TRCA program that provides a science-based tool to aid planning and development decisions in relation to natural features and functions.

Sustainable technology

A technology that is more resource efficient and/or has a reduced the ecological impact compared to current technology. It also sometimes known as "clean tech".

Urban Master Environmental Servicing Plans

Plan that defines how a new or redeveloping community will affect natural ecosystems, including natural hazards and what specific servicing needs and constraints exist.

Urban Recreational Fishing Plan

Strategies for improving public access to recreational fisheries and establishing clear direction among municipalities to enhance and maintain that public access.

ENVIRONMENTAL ACCOUNTING INFORMATION

Information relating to energy, greenhouse gas emissions and water is comparable to past years' CSR reporting. Baseline year is 2005. Greenhouse gas emissions are accounted for in accordance with the [Greenhouse Gas Protocol](#) and follow the operational control principle as emissions from owned and leased facilities, installations, vehicles and equipment are included. Emissions are calculated using "final" emissions factors published annually by the Natural Resources Canada (National Inventory Report 1990-2011: Greenhouse Gas Sources and Sinks in Canada) and include all gases that are deemed to have "global warming potential". Carbon equivalent emissions within the National Inventory Report were calculated using the 1995 IPCC global warming potentials and atmospheric lifetimes. Scope 2 emissions from electricity are net of purchased renewable electricity. Scope 1 emissions from natural gas are net of purchased renewable gas. Carbon sinks from TRCA land vegetation are excluded.

OTHER INFORMATION TO SATISFY GRI STANDARD DISCLOSURES REQUIREMENTS

ORGANIZATIONAL PROFILE: 2013 EMPLOYEES			
Employee category	Female	Male	Total
Full time	229	249	478
Part-time: benefits	40	14	54
Part-time: no benefits	63	17	80
Term contract	38	25	63
Occasional	16	10	26
Per diem	14	32	46
Seasonal	64	57	121
TOTAL	464	404	868

There are seasonal variation in employment due to limited conservation area operating periods. In addition to these employees, TRCA had 9,742 volunteers between March 2013 and April 2014. There are no employees covered by collective bargaining agreements.

ORGANIZATIONAL PROFILE: MEMBERSHIPS IN INDUSTRY ASSOCIATIONS AND ADVOCACY ORGANIZATIONS

- Conservation Ontario
- Rouge Park
- Humber Watershed Alliance
- Etobicoke Mimico Coalition
- Source Water Protection
- Clean Air Partnership
- Canada Green Building Council
- Audubon International
- Canadian Centre for Occupational Health and Safety
- Canadian Chapter of the Society for The Preservation of Old Mills
- Canadian Museum Association
- Children's Water Education Council
- Conservation Ontario
- Costume Society of Ontario
- Durham Strategic Energy Alliance
- Green Infrastructure Ontario Membership
- High Performance Solutions Inc.
- Hike Ontario
- HR Downloads Inc
- Integrated Pest Management Council of Canada
- International Right of Way Association
- Learning Enrichment Foundation
- Markham Historical Society
- Municipal Finance Officers Association of Ontario
- National Golf Course Owners Association of Canada
- Ontario Archaeological Society
- Ontario Association for Impact Assessment
- Ontario Culinary Tourism Alliance
- Ontario Land Trust Alliance Inc.
- Ontario Motor Coach Association
- Ontario Museum Association
- Ontario Parks Association
- Ontario Snow Resorts Association
- Ontario Sustainable Energy Association
- Ontario Trails Council
- Peel Soil and Crop Improvement Association
- Prosecutors Association of Ontario
- Rare Breeds Canada
- Toronto Convention & Visitors Association
- UNEP/World Green Building Council
- Vaughan Chamber of Commerce
- Whitechurch Stouffville Chamber of Commerce
- International Erosion Control Association Great Lakes Chapter Board
- International Erosion Control Association Education Committee
- American Society of Civil Engineers (ASCE)
- Canadian Standards Association (CSA) Rainwater Harvesting Standard Committee
- Chair of Conservation Ontario Integrated Watershed Management Technical Committee
- CAGBC Greater Toronto Chapter Education Committee
- CAGBC GT Chapter Municipal Leader's Forum Committee

GRI CONTENT INDEX

GENERAL STANDARD DISCLOSURES			
STANDARD DISCLOSURE	STANDARD DISCLOSURE TITLE	PAGE	SECTION
STRATEGY AND ANALYSIS			
G4-1	Statement from the most senior decision maker of the organization	3	CEO Message
ORGANIZATIONAL PROFILE			
G4-3	Name of the organization	Inside front cover	About this report
G4-4	Primary brands, products, services	1 1 26	About TRCA Annual report Audited financial statements
G4-5	Headquarters location	www.trca.on.ca/about/	Website
G4-6	Country operations	1	About TRCA
G4-7	Nature of ownership and legal form	26	Audited financial statements
G4-8	Markets served	2	About TRCA
G4-9	Scale of reporting organization	26 1 26	Government funding and funding diversity Annual report Audited financial statements
G4-10	Employee demographics	1 39	About TRCA Additional information
G4-11	Percentage of total employees covered by collective bargaining agreements	39	Additional information
G4-12	Supply chain	1	About TRCA
G4-13	Significant changes during the reporting period	Inside front cover	About this report
G4-14	Precautionary principle	2	About TRCA
G4-15	Externally developed charters, principles to which organization subscribes or endorses	28	Eco-efficiencies
G4-16	Memberships of associations	39	Additional information

GENERAL STANDARD DISCLOSURES
continued on next page >

STANDARD DISCLOSURE	STANDARD DISCLOSURE TITLE	PAGE	SECTION
IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES			
G4-17	Entities included in organization's consolidated financial statements or equivalent documents	2, 26	Audited financial statements
G4-18	Defining content and setting Aspect Boundaries	4 5	Stakeholder engagement Material sustainability aspects
G4-19	Material Aspects identified in the process for defining report content	5	Material sustainability aspects
G4-20	Aspect Boundary for each material aspect within the organization	5	Material sustainability aspects
G4-21	Aspect Boundary for each material aspect outside the organization	5	Material sustainability aspects
G4-22	Restatements for previous reports	1 39	About TRCA Additional information
G4-23	Significant changes from previous reporting periods	5	Material sustainability aspects
STAKEHOLDER ENGAGEMENT			
G4-24	Stakeholder groups	4	Stakeholder engagement
G4-25	Stakeholder identification and selection	4	Stakeholder engagement
G4-26	Stakeholder engagement approach	4	Stakeholder engagement
G4-27	Key topics and concerns raised through stakeholder engagement and response	4 37	Stakeholder engagement Taking sustainability to the next level

GENERAL STANDARD DISCLOSURES
continued on next page >

STANDARD DISCLOSURE	STANDARD DISCLOSURE TITLE	PAGE	SECTION
REPORT PROFILE			
G4-28	Reporting period	Inside front cover	About this report
G4-29	Date of most recent report	Inside front cover	About this report
G4-30	Reporting cycle	Inside front cover	About this report
G4-31	Contact point for questions about the report	39	Additional information
G4-32	"In accordance" option	Inside front cover 43-45	About this report GRI Table
G4-33	External assurance process	Inside front cover	About this report
GOVERNANCE			
G4-34	Governance structure of the organization, including committees	2	About TRCA
ETHICS AND INTEGRITY			
G4-56	Values, principles, standards and norms of behavior	Available on request (http://trca.on.ca/dotAsset/190294.pdf)	
SPECIFIC STANDARD DISCLOSURES			
CATEGORY: ECONOMIC			
ASPECT: ECONOMIC PERFORMANCE			
G4-DMA	Generic Disclosures on Management Approach	26	Government funding and funding diversity
G4-EC4	Financial assistance received from government	2 26	About TRCA Government funding and funding diversity
ASPECT: INDIRECT ECONOMIC IMPACTS			
G4-DMA	Generic Disclosures on Management Approach	35	Green economy
G4-EC8	Significant indirect economic impacts, including the extent of impacts	35	Green economy
CATEGORY: ENVIRONMENTAL			
ASPECT: ENERGY			
G4-DMA	Generic Disclosures on Management Approach	28	Eco-efficiencies
G4-EN3	Energy consumption within the organization	29	Energy consumption and greenhouse gases
G4-EN5	Energy intensity	29	Energy consumption and greenhouse gases
G4-EN6	Reduction of energy consumption	29	Energy consumption and greenhouse gases

SPECIFIC STANDARD DISCLOSURES
continued on next page >

CATEGORY: ENVIRONMENTAL			
STANDARD DISCLOSURE	STANDARD DISCLOSURE TITLE	PAGE	SECTION
ASPECT: WATER			
G4-DMA	Generic Disclosures on Management Approach	28	Energy consumption and greenhouse gases
G4-EN8	Total water withdrawal by source	33	Energy consumption and greenhouse gases
ASPECT: BIODIVERSITY			
G4-DMA	Generic Disclosures on Management Approach	14	Biodiversity
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	14	Biodiversity
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	14	Biodiversity
G4-EN13	Habitats protected or restored	14	Biodiversity
ASPECT: EMISSIONS			
G4-DMA	Generic Disclosures on Management Approach	28	Energy consumption and greenhouse gases
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	28 39	Energy consumption and greenhouse gases Additional information
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	28	Energy consumption and greenhouse gases
G4-EN18	Greenhouse gas (GHG) emissions intensity	28	Energy consumption and greenhouse gases
ASPECT: EFFLUENTS AND WASTE			
G4-DMA	Generic Disclosures on Management Approach	33	Water conservation and waste management
G4-EN23	Total weight of waste by type and disposal method	33	Water conservation and waste management

SPECIFIC STANDARD DISCLOSURES
continued on next page >

STANDARD DISCLOSURE	STANDARD DISCLOSURE TITLE	PAGE	SECTION
ASPECT: PRODUCTS AND SERVICES			
G4-DMA	Generic Disclosures on Management Approach	7 9 11 14 16 19 21 24 35	Flood protection Water management Land management Biodiversity Access to nature Community engagement Research and monitoring Policy development Green economy
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	7 9 11 14 16 19 21 24 35	Flood protection Water management Land management Biodiversity Access to nature Community engagement Research and monitoring Policy development Green economy
CATEGORY: SOCIAL Sub-Category: Society			
ASPECT: LOCAL COMMUNITIES			
G4-DMA	Generic Disclosures on Management Approach	7 9 11 14 16 19 21 24 35	Flood protection Water management Land management Biodiversity Access to nature Community engagement Research and monitoring Policy development Green economy
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	4 7 9 11 14 16 19 21 24	Stakeholder engagement Flood protection Water management Land management Biodiversity Access to nature Community engagement Research and monitoring Policy development
SPECIFIC STANDARD DISCLOSURES FOR SECTORS			
CATEGORY: ECONOMIC			
NGO-8	Ethical fundraising	26	Government funding and funding diversity
CATEGORY: SOCIAL			
G4-DMA	Affected stakeholder engagement	1 4	About TRCA Stakeholder engagement
G4-DMA	Monitoring, evaluation and learning	21	Research and monitoring



WWW.TRCA.ON.CA