



THE TORONTO AND REGION CONSERVATION AUTHORITY

Sustainable Communities Board Meeting #1/07

Chair: Suzan Hall
Vice Chair: Linda Pabst
Members: Glenn De Baeremaeker
David Gurin
Jack Heath
Colleen Jordan
Glenn Mason
Dick O'Brien
John Sprovieri

**April 13, 2007
11:00 A.M.**

SOUTH THEATRE, BLACK CREEK PIONEER VILLAGE

AGENDA

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| 1. MINUTES OF MEETING #4/06, HELD ON DECEMBER 1, 2006 (Minutes Summary enclosed herewith on <u>GREEN</u>) | |
| 2. BUSINESS ARISING FROM THE MINUTES | |
| 3. DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF | |
| 4. DELEGATIONS | |
| 5. PRESENTATIONS | |
| 5.1 A presentation by Maurice Stevens, Vice President, Castlepoint Investments Inc., in regards to item 8.1 - City of Vaughan Block 39 - Progress Update. | |
| 5.2 A presentation by Chandra Sharma, Etobicoke Mimico Watershed Specialist, TRCA and Chris Rickett, Planner, Watershed Resources, TRCA, in regards to the GTAA Living City Project. | |
| 6. CORRESPONDENCE | |

- 7. SECTION I - ITEMS FOR AUTHORITY ACTION
 - 7.1 TORONTO AND REGION CONSERVATION AUTHORITY PARTICIPATION IN SUSTAINABILITY PROJECTS AND PROGRAMS 3-22
 - 7.2 RENEWABLE ENERGY DISCUSSION PAPER 23-24
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Class Environmental Assessment 25-30
- 8. SECTION IV - ITEMS FOR THE INFORMATION OF THE BOARD
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 - 8.2 SUSTAINABILITY MANAGEMENT SYSTEM
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- 9. NEW BUSINESS

NEXT MEETING OF THE SUSTAINABLE COMMUNITIES BOARD #2/07,
TO BE HELD ON JUNE 1, 2007, IN THE
VICTORIA ROOM, BLACK CREEK PIONEER VILLAGE AT 11:00 A.M.

Brian E. Denney
Chief Administrative Officer

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TO: Chair and Members of the Sustainable Communities Board
Meeting #1/07, April 13, 2007

FROM: Brian Denney, Chief Administrative Officer

RE: **TORONTO AND REGION CONSERVATION AUTHORITY PARTICIPATION IN SUSTAINABILITY PROJECTS AND PROGRAMS**

KEY ISSUE

Overview of sustainability projects and programs participated in by Toronto and Region Conservation Authority and development of the Greater Toronto Atmospheric Fund.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT staff be directed to develop a partnership with the Toronto Atmospheric Fund (TAF) and the Greater Toronto Area Clean Air Partnership (CAP) to establish the Greater Toronto Atmospheric Fund (GTAF);

AND FURTHER THAT Toronto and Region Conservation Authority (TRCA) participate in development of collaborative proposals to seek funding from the provincial and federal governments to support the GTAF.

BACKGROUND

At Authority Meeting #4/03, held on May 16, 2003, the Authority approved the Strategic Plan Draft Framework, including an amendment to the advisory board names to include the Sustainable Communities Board (SCB). The SCB was designed to initiate, study, report on and recommend a comprehensive program of community outreach and leadership development towards the sustainable communities objective of The Living City.

In May, 2003, the Authority directed staff to develop a new strategic plan for TRCA, in support of the vision for The Living City:

The quality of life on Earth is being determined in the 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.

This vision is to guide TRCA over the next half of the 21st century. Our mission points to the way, and to the union of four major objectives necessary to achieving The Living City. We can only realize a better future by working in partnerships. We can only restore biological systems through the redesign of human systems in relation to the natural environment. Thus our mission, to work with our partners to ensure that The Living City is built upon a natural foundation of healthy rivers and shorelines, regional biodiversity and sustainable communities, recognizes people as architects of our future, and that every decision is a factor towards a sustainable future.

The Greater Toronto Area (GTA) is growing rapidly. It faces drastic challenges to manage growth, maintain a high quality of life and to simultaneously restore biological diversity and water resources to new levels. The Living City is an attainable vision of nature in the city where human systems (belief systems, governance systems, built systems and economic systems) mimic and assimilate nature's processes to achieve resource efficiency, well-being and prosperity. Cities are part of, not separate from nature.

Our ability to realize this vision has necessary global implications since has the highest consumption of energy per capita and plays an important continuing role in fostering global peace and equitable resource distribution. We hold within our borders approximately 20 percent of the world's fresh water, including 7 percent of the world's fresh renewable water, a resource facing impending pressures and shortages in this century.

The future of the planet will be determined in cities. By 2030, 61% of the world's population will be living in cities. The GTA is the largest urban area in Canada. 80% of Canadians already live in cities. Increasing the livability of the GTA by conserving freshwater and biological resources for future generations, is imperative and our commitment.

With this new vision for The Living City, TRCA embarked on a new era of conservation – with a refocused effort to harness our strengths and experience, and to address climate change as we work to achieve our mission. We recognize the importance of learning from the past to envision a sustainable future.

TRCA is leading and participating in several sustainability initiatives aimed at adapting to and mitigating against climate change. This staff report is intended to provide an overview of these projects and programs for the members of the Authority.

THE LIVING CITY CAMPUS AT KORTRIGHT

The Living City Campus is designed to be a facility that inspires people from all over the world to live more sustainably. From renewable energy to green buildings to new technologies and sustainable transportation, visitors will experience the latest in green living, inspiring change in how we live, work and play today for a healthier tomorrow. The Living City Campus grows out of TRCA's vision for healthy urban environments and The Living City.

Education and Training

The Living City Campus will be a dynamic and collaborative learning environment where students, professionals and the public will meet to share and immerse themselves in the perspectives and best practices of sustainability. Programming on the campus will appeal to people representing a diversity of ages, cultures and professional sectors. Together they will chart out the theory and practice of sustainability as it continues to emerge.

Sustainable Transportation

Fuel cell technology is one type of sustainable transportation innovation that will be showcased at The Living City Campus. Fuel cell technology has improved over the past few years to make it safer, more reliable and a real alternative for powering vehicles. Fuel cells are extremely attractive from an environmental standpoint because they are able to convert hydrogen into energy to power a vehicle producing a by-product of only air and water vapour.

The Energy Plan

The Living City Campus is striving to be a net producer of renewable electricity with the potential of being able to sell excess energy produced on-site. In order to achieve this goal, an energy plan for the campus is being developed. A major part of making this goal achievable is using the most up-to-date sustainability technology in the construction of all the new buildings. The Earth Rangers building in the Southern Gateway is already an energy efficient building and all other structures will follow that lead. The Kortright Centre is supplied by 100% green electricity purchased from Bullfrog Power.

Energy will be produced on the campus through all of the means demonstrated on the energy trail. Passive solar, geothermal and solar photovoltaic energy sources will heat, cool and power the buildings as much as possible. The large windmill in the centre of the energy trail will be another means of supplying the campus with power in addition to the biomass and biofuels that will be produced in the agricultural zone. Diversifying the energy sources on The Living City Campus will increase the likelihood of meeting our goal of being a net producer.

Sustainable Development on Campus

The Living City Campus will not just be a place to learn about sustainable development, but also to implement sustainable technologies within its buildings and developments. All the new and refurbished buildings will be Leadership in Energy and Environmental Design (LEED) certified and incorporate energy efficient technologies. TRCA also strives to influence the local community and the region to create more sustainable housing.

TRCA has been working with the City of Vaughan and developers to create a sustainable community surrounding the campus. A new greener community project is being carried out in ‘Block 39’ across from the service corridor exit on Pine Valley Drive (additional detail provided in a report on this project included in the agenda). Two other key sustainable development projects that are being completed within the larger campus context include TRCA’s Restoration Services Centre and the City of Vaughan’s Emergency Medical Services building. These two buildings are expected to receive LEED Platinum and LEED Silver certification respectively.

Trails and Key Linkages

Trails will be an integral part of The Living City Campus as they will allow visitors to access diverse parts of the Campus as well as connect to the wider community and the region. Within the campus itself, there is an extensive trail system that meanders through the wetlands and brings travellers into the river valley. This trail system will be used primarily by visitors to the campus itself.

2007 will see the development of the new Ryerson University Sustainable Technology Research Centre. Ryerson is committed to this project and TRCA needs to work with the university to establish project direction and design objectives.

Additional projects under review include:

- partnership with the Design Exchange in the design of The Living City Campus marketing book;
- retrofit of the Power Trail in partnership with Direct Energy;
- review of Conference Centre opportunities with key stakeholders including Delta Hotels.

ARCHETYPE SUSTAINABLE HOUSE PROJECT

The TRCA Archetype Sustainable House Project began with a national competition conducted in partnership with the Design Exchange. The intent of the competition was to engage architects, engineers and graduate students from across Canada to design a mass production green home for new community development. The winning team, chosen on June 21, 2006, was selected from 17 entries by a blue ribbon panel of judges. A comprehensive report was provided with each design submission, with final design drawings and specifications to be generated by the winning team prior to construction.

The winning design will be built at The Living City Campus at Kortright, at the entrance to the Energy Trail. The Energy Trail is an interactive renewable energy learning exhibition. The Archetype Sustainable House Project will serve as the primary energy conservation education facility for workshop participants and as a model to help monitor and verify the effectiveness of materials, systems and technologies.

TRCA plans to build two semi-detached houses at this location. The primary goal of the first home will be to represent affordable green options that can be adopted by home builders and buyers in today's marketplace; the second home will showcase alternative materials and technologies that will demonstrate the best in sustainable design, resource efficiency and energy management systems for the longer term. These houses will serve as models for industry and municipal leaders to see the next generation green homes as we move towards ever more sustainable housing. They will be a powerful statement of what can be achieved in an environmentally conscious new home design. They will demonstrate Canada Mortgage and Housing Corporation's (CMHC) five principles of Net Zero Energy Healthy Housing (NZEHH), and stand as a case study for the emerging LEED for Homes program in Canada.

The goals of the sustainable demonstration houses are to:

- educate and demonstrate new technologies, materials, and processes for residential mass construction;
- provide training for product installation and systems management;
- provide equal opportunities for the demonstration and application of products;
- encourage a holistic approach to sustainable design (not just energy efficiency).

One of the primary objectives of the Archetype Sustainable House Project is to highlight the support and sustainability initiatives of sponsors and associates. Initiatives conducted on The Living City Campus must be conducted through partnerships and associations to ensure success and achieve market transformation towards communities that are healthy and sustainable. Construction is planned to begin in July 2007, with completion expected in the fall 2007.

RESTORATION SERVICES CENTRE

The Restoration Services Centre is the facility that will address long standing deficiencies related to the administration and operation of TRCA's Indigenous Plant Propagation Program and the staging and implementation of resource management projects. The new facility will also provide much needed office space to house staff from the Parks and Culture and Restoration Services divisions.

In keeping with the vision for The Living City Campus as a cluster of sustainable infrastructure, TRCA endeavoured to build its first LEED rated building on the Boyd North property to meet the need for a new facility. TRCA received the occupancy permit for the new centre at the end of March 2007, and are still awaiting the final LEED certification - LEED Platinum is expected. If a Platinum rating is achieved, TRCA's first LEED building will be only the 2nd building in Canada to receive the Platinum rating.

One feature of the development is an on-site stormwater management system, including the enlargement of an existing retention pond. The reservoir and on-site well has allowed the nursery irrigation operation for the first time to be off-line in terms of taking water from the Humber River, removing any impact to baseflow.

WORLD GREEN BUILDING COUNCIL

The World Green Building Council (WGBC), founded in 1999, provides a "union" of national green building councils whose common goal is the sustainable transformation of the global property industry. Nine countries are currently members - Canada, United States, India, Australia, Japan, New Zealand, Taiwan, United Arab Emirates and Mexico.

The WGBC is committed to changing the property industry. The property industry is defined as all those who produce, develop, plan, design, build, alter, or maintain the built environment, and includes building materials manufacturers and suppliers as well as clients and end use occupiers. By bringing together the green building councils from around the world, WGBC is working together to share knowledge, resources and common principles to advance the development of greener buildings.

A sustainable property industry will balance environmental, social and economic issues to ensure a viable and valuable industry for future generations. Buildings account for one-sixth of the world's fresh water withdrawals, one-quarter of its wood harvest, and two-fifths of its material and energy flows. Currently the problems/opportunities that face the WGBC are that demand greatly exceeds supply, and the recent and rapid emergence of other organizations to address the same problems that the WGBC does. An important goal of the WGBC is to coordinate efforts with other international forces to optimize everyone's effectiveness.

WGBC is seeking to establish a Secretariat. At present the work of the WGBC is being done largely through volunteer efforts with the support of part time staff. Demand for the services of the WGBC is rising due to the increasing awareness about climate change and potential for built infrastructure to address this pressing issue and therefore capacity to support this demand needs to be enhanced.

At Authority Meeting #1/07, held on February 23, 2007, the Authority resolved to submit a bid to the WGBC to develop and support a Secretariat to be located at the Earth Rangers LEED rated facility at the Kortright Centre for Conservation/The Living City Campus. Staff is currently preparing additional information requested in response to the two proposals received, one to be located at Kortright and one in Montreal. A decision on the successful bidder is expected in the next couple of months.

CANADA GREEN BUILDING COUNCIL

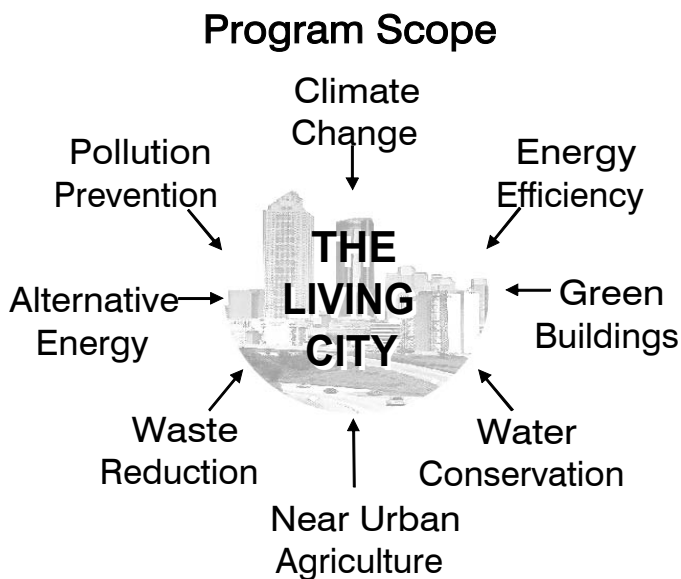
At the direction of the Authority in May 2004, TRCA and the Canada Green Building Council - Greater Toronto Chapter (CaGBC-GTC) entered into a Memorandum of Understanding (MOU) to partner on activities and projects supporting green building design across our regions, in support of TRCA's vision for The Living City. This relationship was developed to help engage leaders and promote sustainable community development and community transformation within the GTA.

Further developing the relationship, the Authority approved an amendment to the MOU in February 2007 allowing TRCA's Manager, Sustainable Development to devote 50% of his time to the CaGBC-GTC as their Executive Director, for a minimum of one year.

COMMUNITY TRANSFORMATION PROGRAMS

The Community Transformation Programs are a group of programs under The Living City banner focussed on creating substantive measurable change in the sustainability of the Greater Toronto Area. The programs were endorsed by the Authority in 2004 and the business plan was approved in 2005.

The programs are collaborative initiatives working with partners to engage and enable leadership to take action. The programs are dynamic, continually shifting to meet the needs of participants in target sectors as well as ephemeral, existing only for as long as needed to effect the necessary change.



The intent is to engage leadership in programs that achieve substantial, measurable improvement in the sustainability of city regions. The programs developed or delivered to achieve this goal include:

1. Mayors' Megawatt Challenge;
2. Greening Health Care;
3. Greening Retail;
4. Renewable Energy Roadmap;
5. Renewable Energy Business Case;
6. Eco-industrial Network;
7. Home Energy Clinic;
8. Sustainable Schools.

Mayors' Megawatt Challenge

The Mayors' Megawatt Challenge (MMC) brings municipalities together to improve energy efficiency and environmental management in their own buildings. Through the Mayors' Megawatt Challenge, municipalities demonstrate leadership, inspiring other organizations and individuals to take action toward healthier, more sustainable communities.

Thirteen municipalities are participating in the program including, the Town of Ajax, City of Barrie, City of Burlington, City of Guelph, City of Kitchener, Town of Milton, City of Mississauga, City of Oshawa, Town of Richmond Hill, City of St. Catharines, City of Toronto, Township of Uxbridge and the City of Waterloo. The program is continuing to recruit new participants from across the Greater Golden Horseshoe.

Since its inception in 2003, buildings enrolled in the program have reduced their total energy use by 2% or the equivalent of 2.2 MWh, with a savings value of \$2.6 million and a green house gas (GHG) emissions reduction of 1,500 tonnes.

The Arenas Project is a special project of the MMC. The goal of the Arenas Project is to achieve large-scale energy and water use savings in arena facilities across the Greater Golden Horseshoe, through identification and implementation of comprehensive energy retrofit projects and operational best practices. Ten municipalities have joined the program and have enrolled 27 arenas. Data collection occurred over the winter with workshops and final audits and action plans to be developed by late spring 2007. The Arenas Project has been so successful that planning for a second round of the project will begin this summer.

Greening Health Care

The nature of health care facilities and operations makes them inherently intensive users of resources. Hospitals in Ontario spend more than \$250 million a year on utilities. As facilities expand and acquire new equipment, and the prices of energy, water and waste removal continue to rise, hospitals are faced with volatile costs that consistently rise faster than the rate of inflation.

Membership in the Greening Health Care program includes 20 hospital corporations, representing a total of 29 hospital sites. Hospital membership continues to increase as the program is offered to hospitals across Ontario through the support of the Ontario Power Authority. The program has partnered with the Canadian Health Care Engineering Society (CHES) on a workshop for potential members and TRCA has joined the Canadian Coalition for Green Health Care to increase support for the program.

Greening Retail

In April 2006, the Authority directed staff to pursue funding and partnership opportunities in order to develop and implement a new program of The Living City that engages the retail sector in the application of sustainable practices and technologies. Staff was able to secure \$25,000 from Environment Canada and \$6,000 in-kind from The Conservation Foundation of Greater Toronto to undertake and complete Phase I of the program. The results of the Phase I report confirmed the premise for Greening Retail that, doing the right thing for the environment can also be good for the bottom line. There are a great many environmental best practices that leaders in the sector are implementing but are not yet common practice across the sector. The objective of Greening Retail is to make the best practices of the leaders, common practice for the sector.

Having confirmed the premise for the program, staff was able to secure an additional contribution of \$25,000 from Environment Canada as well as \$20,000 from PowerStream. These funds are being used to initiate Phase II research and prepare a web based database of environmental best practices for the Greening Retail web site. An additional \$155,000 are required to complete Phase II and staff will work closely with the Conservation Foundation to raise these funds.

Renewable Energy Road Map

Adoption of renewable energy technology has been identified as one of the key areas where society can address the issue of climate change and significantly reduce green house gas emissions. TRCA has more than 20 years of experience in renewable energy education and training through the Kortright Centre for Conservation. The Renewable Energy Road map is a project to build on our current renewable energy experience and initiatives to identify strategic leverage points (opportunities) for TRCA and its partners to transform the marketplace for renewable energy in the Greater Golden Horseshoe.

In this project, staff will compile and synthesize all of the recommendations and issues identified in key documents published by governments, non-government organizations and industry associations. Through consultations with renewable energy experts, staff will identify who is acting on these recommendations and what is being accomplished, identify gaps in recommendations and activities and make recommendations for actions in strategic areas. The results of the report will be used to determine the actions that TRCA will take in transforming the market for renewable energy in the Greater Golden Horseshoe.

Business Case for Renewable Energy

Discussions with experts in the renewable energy sector has indicated that there is a significant amount of misinformation or misunderstanding of the business case for renewable energy. Often generalizations on the “pay-back-period” for renewable energy installations are passed around by word-of-mouth and are taken as gospel. In many cases these generalizations are based on actual case studies, but the information has been used more broadly as a general rule-of-thumb.

These general rules are important tools, to help us understand how and where best to apply our resources on more detailed feasibility studies or implementation. However, the context for these general rules is often lost and thus just how applicable the rule is to a specific set of circumstances cannot be determined without undertaking a feasibility study. Staff believe that this lack of good general rules for a defined set of contexts is a significant barrier to implementation of renewable energy technologies.

In this project, staff will partner with universities and industry groups to identify and communicate accurate general business cases for a set of target audiences (homeowner, small and medium business, large business, institution and investor) and group of renewable technologies (solar PV, geothermal, solar thermal air and water, and wind). The results of the study will be used as part of a larger marketing effort to transform the market for renewable energy.

Eco-industrial Network

Staff is developing an Eco-industrial Network as part of the creation of the proposed Pearson Eco-industrial Park. The purpose of the network is to identify and facilitate potential partnerships between businesses to reduce the generation of waste, improve energy efficiency, implement renewable energy technologies and undertake collaborative projects.

The results of this project will be used to develop a strategy for rolling the network out across the Greater Golden Horseshoe.

Home Energy Clinic

The Home Energy Clinic teaches homeowners to identify and understand the benefits of making their homes more energy efficient. The clinic offers homeowners a solution by identifying the actions that can be taken, the resulting savings in energy costs and the appropriate incentive and rebate programs. This information is then presented in an easily understood Home Energy Plan.

Development of the Home Energy Clinic was put on hold when staff learned that a significant local distribution company (LDC) was in the process of developing a similar software program. Staff is exploring partnerships with the LDC in question and determine how best to move forward with the program.

Sustainable Schools

The Sustainable Schools program identifies and evaluates best practices in green design, commissioning and operations, and helps school boards take action to improve the energy and environmental performance of their new and recently-built schools. There are four school boards participating in the program including, York Region District School Board, Peel District School Board, Dufferin-Peel Catholic District School Board and Simcoe County District School Board. Energy data and building profiles from more than 50 recently built schools have been entered into an online performance management system.

Benchmarking results for 50 of the schools in the system indicate that there is a significant range in energy intensity, with the least efficient schools using nearly 3 times more energy per square foot than the most efficient schools. Inventories and testing are underway for selected schools to relate energy use profiles to system design, use of portables and installed power densities. The results from these investigations will be used to conduct design charettes with participating school boards to increase the efficiency of new school design. Eventually the program will be expanded to address operation and retrofit opportunities in all schools.

SUSTAINABILITY MANAGEMENT SYSTEM

An initial set of environmental management targets and objectives was finalized in 2002. Initially, under the Environmental Management System (EMS), only environmental targets were set. The program was expanded in 2004 to include social and economic targets and renamed the Sustainability Management System in order to better manage TRCA's organizational movement toward sustainability.

The SMS enables TRCA managers to continually review, consult on, monitor, report, revise and improve TRCA's environmental performance in selected areas where internal operations have significant impact on the environment. These areas are called 'significant aspects' under ISO 14000 terminology, one global standard for environmental management systems.

SMS priorities include:

- creating a culture of operating sustainably;
- working toward greater greening of TRCA's vehicle fleet;
- using the EcoOffices program and office EcoTeams to improve sustainability performance;
- pursuing an energy management plan for data monitoring and energy retrofit of existing facilities - preparation of a request for proposal for energy management services and initiation of contract;
- instituting "green" purchasing policies so TRCA can continue supporting and facilitating the shift to a sustainable economy;
- improve communications with TRCA staff on sustainable operations (through newsletters and a Sustainability Station at all work locations); and
- improve SMS data system to incorporate weather normalized data and improve staff access to ongoing performance information.

The 2006 annual report of the SMS is included in this agenda as a separate report.

ONTARIO ECOSCHOOLS PROGRAM

TRCA is a partner and participant in the Ontario EcoSchools program, and has been since its development in 2002. The goal of the Ontario EcoSchools Program is to help schools reduce their environmental impact by making decisions for a healthy world a part of everyday school life. The program is uniquely designed to address both how schools are run and what students learn. Based on the Ontario curriculum, it is a holistic approach to education that engages students, staff and volunteers in learning activities that are the foundations for sustainable communities. Ontario EcoSchools also offers schools the opportunity to participate in a certification program, with a scoring system for bronze, silver and gold, to recognize and honour their environmental efforts each year.

TRCA education staff saw the EcoSchools Certification program as an opportunity to showcase its efforts in sustainability education, to formally integrate the Sustainability Management System (SMS) into its work, and to inspire visitors and other agencies to build on their environmental programs and practices. To this end, in September 2005, the process for certification was initiated at TRCA's five education facilities.

In June 2006, Claremont, Lake St. George and Albion Hills field centres, the Kortright Centre for Conservation and Black Creek Pioneer Village joined the ranks of Ontario's 112 certified EcoSchools; the results: one silver and four gold Ontario EcoSchools certifications. TRCA policy and guidelines, as set out in the SMS, were also fully integrated into the EcoSchools Certification Guide. In becoming the first conservation authority, and non-school board, to achieve Ontario EcoSchools certification, TRCA is demonstrating its commitment to educating for sustainable living. Black Creek Pioneer Village is also the first museum to achieve certification.

At Authority Meeting #8/06, held on October 27, 2006, the Authority resolved to participate in the EcoSchools Program in 2006-2007, as certification is not a one time thing, but rather must be obtained annually. Over the 2006-2007 academic year, the five TRCA education facilities will continue to demonstrate their commitment to education for sustainable living through their teaching and facilities operations by participating in EcoSchools once again. As well as meeting on-going challenges from the previous school year, such as a more explicit integration of a systems thinking approach in the curriculum, or more effective delegation of the EcoTeam's tasks, TRCA education facilities want to 'raise the bar' in a few key areas, including the following:

- Litterless lunches and snacks be promoted to visiting classes as a means to increase their participation in TRCA EcoSchools Program while decreasing the production of waste at the education facilities, along with efficient diversion of waste produced by visitors to either recycling or compost bins.
- Research on efficient ways to purchase a greater amount of local and organic produce and foodstuffs as a means to decrease the education facilities' ecological footprints, and to further build on 2005-2006 EcoSchools Certification achievements. Some facilities have already begun to purchase fair trade coffee and tea (Kortright) and are experimenting with biodegradable cups and plates (BCPV). Collectively, staff are also researching various options for more ethical and ecologically friendly food purchasing.
- Promotion of EcoSchools Program to other conservation authorities and district school boards as a means to creating a culture of sustainability in Ontario.

EcoOffices

At the October 27, 2006 Authority Meeting, the Authority further resolved that the EcoSchools model for managing environmental sustainability be adapted for use, under the TRCA SMS, at TRCA's administrative offices - Boyd Office, Restoration Services Centre, Head Office and Downsview Office beginning in the fall of 2006. To assist with this process, EcoTeams were to be convened at each site.

Staff will ensure that the EcoSchools Steering Committee are advised and consulted throughout the TRCA pilot project for consideration of application of EcoOffices at their school board offices. To assist in the process, staff are developing an internal certification process to recognize office efforts.

It is the opinion of staff that the following EcoSchools components, which are absent in the existing SMS, will add value to TRCA's organizational efforts towards sustainability:

- establishment of EcoTeams at each facility;
- empowerment of facility EcoTeams to set annual targets and pursue site specific solutions;
- incorporation of annual goals that are set cooperatively.

It is anticipated that the SMS will be greatly enhanced by the establishment of facility specific EcoTeams and the generation of site-specific approaches to sustainability that these teams will provide. The EcoSchools methodology is based on staff empowerment and ownership, whereas, too often in the past, the SMS has worked in a 'top-down,' or prescriptive fashion. Adapting EcoSchools for use at TRCA offices will empower staff and have a positive impact.

TRCA EDUCATION FOR SUSTAINABILITY

TRCA education is a network of centres and programs whose commitment to excellence in education has spanned 50 years. Included in TRCA's education program are the formal and non-formal programs offered through Black Creek Pioneer Village (BCPV), the Kortright Centre for Conservation, the three residential field centres (Albion Hills, Lake St. George and Claremont), the Watershed on Wheels outreach program, the Investigating The Living City Spaces programs, and the seasonal/new educational initiatives offered in the TRCA parks. The education programs are designed to connect learners to their environment through fun and meaningful, hands-on exploration of local systems and sustainable technologies.

In 2005, the Authority approved the adoption of a TRCA education curriculum entitled *A Systems Thinking Guide to Learning in The Living City*. This curriculum set out the future concepts and directions for the re-orientation of TRCA environmental education towards sustainability education.

2007 Activities

In 2007 this important work in sustainability education will continue through the pursuit of the following:

- Developing more dynamic and engaging resources for on-line visitors, such as interactive maps of the watersheds and Tommy Thompson Park.

- Participating in the United Nations Decade (2005-2015) of Education for Sustainable Development (ESD) initiative through the Toronto Regional Centre of Expertise (RCE). Staff will share their expertise in ESD, as well as contribute to the Governance and Outreach committees on an ongoing basis over the life of the program.
- Implementing and evaluating the PowerStream Energy Education Pilot Project in collaboration with Ontario EcoSchools, the York Region and York Catholic district school boards, York Region Health Services and the Clean Air Partnership.
- Expanding educational program opportunities for secondary students and adults.
- Exploring a redevelopment strategy for the Lake St. George Field Centre, including the retrofit or rebuild of existing facilities to LEED standards and provision of technology-enabled learning through broadband networking to connect the field centre with advanced broadband-enabled schools within the GTA and province.
- Continuing to expand professional and skill development opportunities for TRCA education staff.
- Introducing two new programs at the Kortright Centre for Conservation: a team building and leadership development program and a GPS / Geocaching program. Both programs will be geared towards secondary school students to maintain relevancy and meet education needs.
- Expanding Black Creek Pioneer Village's work in environmental citizenship and communicating environmental messaging to all schools and visitors. The EcoSchools movement has helped us to plan how to go about this.
- Investigating, through proposals that are underway, the possibility of Black Creek Pioneer Village becoming the 'Gateway to the Greenbelt' with the Greenbelt Foundation. This would put the village in a unique position for promoting the sustainable use of the province's farmlands and environmentally sensitive areas.
- Building a sense of place by linking schools to their watershed addresses and using this, along with EcoSchools certification, as a basis for watershed reporting in ecological literacy and achievement.

POWERSTREAM ENERGY EDUCATION PILOT PROJECT

In October 2006, TRCA entered into an agreement with PowerStream Inc. to implement the PowerStream Energy Education Pilot Project to selected schools within the Town of Markham, City of Vaughan, Town of Aurora and Town of Richmond Hill, in the 2006/2007 academic year. The goal of the PowerStream Energy Education Pilot Project is to generate immediate and long-term energy savings through behaviour change and actions at school, in the community and at home

PowerStream Inc. is mandated to foster and encourage the development and adoption of energy conservation and demand side management programs within its service area. This mandate has presented opportunities for joint programming and projects with TRCA. In January 2005, PowerStream and TRCA entered into a Conservation and Demand Side Management Services Agreement to execute such joint programming for six Community Transformation Programs.

The positive relationship built between PowerStream and TRCA led to discussions regarding energy education programming. TRCA, in collaboration with boards of education and others, prepared a proposal for an energy education pilot project and in August, received funding approval for same.

The PowerStream Energy Education Pilot Project is a collaboration of regional education, environmental and health organizations interested in combining efforts and resources to implement one of the first, integrated, multi-partnership energy education/climate change programs in Ontario.

- The project provides the framework for energy savings and sustainable behaviour change.
- The project builds on successful energy education resources, avoiding duplication of effort.
- School boards can build connections with their current energy conservation initiatives.
- Teachers will become more confident in addressing energy curriculum with their students.
- PowerStream will strengthen relationships with school boards, schools and the other education project agencies.
- School boards will build capacity as schools become Certified EcoSchools.
- A culture of energy conservation and leadership will develop with the students and within schools.
- An education model for others to emulate will be developed.

SUSTAINABLE COMMUNITY DEVELOPMENT

Interest in sustainable community planning and design throughout North America and Europe has been growing dramatically since the early 1990s. The Sustainable Community Development program is committed to working with organizations, agencies and municipalities to accelerate sustainable urban development in a way that best reflects the interests of our communities' social, economic and environmental health. TRCA's aim is to enrich existing sustainable community initiatives and support the growth of environmentally friendly urban development.

The Block 39 project located in the City of Vaughan is currently Ontario's largest Energy Star community under development. The project was led by TRCA to explore what is possible in new community development, and as an additional feature in The Living City Campus. Block 39 grew into a project supported by the developer, 4 builders, the gas and electric utilities, the City of Vaughan and Canada Mortgage and Housing Corporation (CMHC). The framework used to educate the builders and engage community leaders on Block 39 is now being used to encourage future developments around the GTA.

Block 40 in the City of Vaughan has begun a review of sustainable community options. Block 40 could be one of the first communities to use the LEED for Homes rating system in Ontario. Additional communities are also beginning to work with TRCA to review their sustainable community options.

Municipal Green Building Tool Kit

Across the country, regional and municipal governments are developing exemplary sustainable development programs. Many of these programs have put forth legislation, revised building codes, tax incentives and language specific to green design. Also, there are many demonstration projects and publications featuring voluntary or mandatory guidelines that advance green principles. The purpose of the tool kit project is to gather information about these existing resources and make the information accessible through various publications, including an interactive website. The kit will allow those interested in starting a green building and planning program quick and easy access to information about existing programs and models, case studies and tools of the featured programs.

CaGBC, the Association of Municipalities of Ontario and TRCA staff distributed the Municipal Green Building Tool Kit in December 2006. Workshops will be conducted in 2007 to assist municipal staff in southern Ontario with navigating through the tool kit and applying the information to potential green building projects within their jurisdictions.

A 2007 initiative is now underway as a partnership between TRCA and the CaGBC-GTC to develop a website in support of the tool kit. The website will be hosted by CaGBC-GTC and will focus on the direct needs of municipal leaders in southern Ontario.

SUSTAINABLE TECHNOLOGIES EVALUATION PROGRAM

The idea for a TRCA-led program that evaluates environmental technologies originated from an earlier multi-agency program in which TRCA was a partner - the Stormwater Assessment Monitoring and Performance (SWAMP) Program. In 2003, as the SWAMP program neared the end of its mandate, strong support was expressed for the continued existence of a program like SWAMP. However, participants thought that the original mandate should be broadened to include greater focus on stormwater pollution prevention, source controls, construction phase measures, cost factors, maintenance, management and operating practices (e.g. street cleaning), and restoration.

In response to these recommendations, TRCA's Sustainable Technologies Evaluation Program (STEP) was developed in 2005. The program, which has a much broader focus than its predecessor, helps to fulfill the goals of several regional initiatives, including the Toronto and Region Remedial Action Plan, the Toronto Wet Weather Flow Management Master Plan, Drinking Water Source Protection Plans and TRCA's vision for The Living City. STEP provides data and analytical tools to support implementation of sustainable technologies and practices.

STEP's main objectives are to:

- monitor and evaluate sustainable technologies in the areas of water/land, energy and air;
- assess potential barriers to implementing sustainable technologies;
- provide recommendations for guidelines and policy development; and
- disseminate study results and recommendations and promote the use of effective technologies at a broader scale through education and advocacy.

Technologies evaluated under STEP are not limited to physical structures; they may also include preventative measures, implementation protocols, alternative urban site designs or other practices which promote more sustainable ways of living.

Several technologies are being evaluated or are undergoing evaluation under the program. These include:

- rooftop gardens;
- permeable pavement;
- bio-retention swales;
- rainwater harvesting systems;
- erosion and sediment control ponds;
- air biofiltration systems.

A website has been developed highlighting sustainable technology monitoring and research by STEP, SWAMP and other agencies to not only disseminate information about STEP projects, but also provide a portal through which developers, private organizations, universities, government/non-governmental agencies and the general public can access and learn about work being undertaken by other groups on sustainable technologies.

In future years, STEP will conduct evaluations of:

- the Archetype Sustainable House Project at The Living City Centre Campus;
- the Mattamy Homes in Milton;
- the Ryerson town homes in Toronto;
- the Now House-WW2 retrofit project in Toronto;
- various stormwater source and conveyance controls;
- and other projects yet to be identified.

Discussion papers will be prepared for the air and energy components of the program to define directions for research.

Green Roofs

STEP has been involved with the development of the Canadian green roof industry for several years, starting with the initiation of the York University Green Roof monitoring study. The study was undertaken to provide the local data needed to support broader implementation of green roofs in the GTA. The York University study yielded key information on the stormwater and biodiversity benefits that green roofs can provide within TRCA's jurisdiction. These findings have helped to inform the actions of our partner municipalities as they develop green roof policies and incentive programs.

STEP has also recently completed a study of the costs and savings to building owners installing green roofs in the GTA. The goal of the study was to develop a better understanding of the financial bottom line by looking at both the capital and life cycle cost of a green roof relative to a conventional roof. The results will be used to better inform green roof policy decisions, including the type and magnitude of incentive that is required to motivate broader use of this technology.

In 2006, TRCA also became a corporate member of Green Roofs for Healthy Cities (GRHC) and is currently providing guidance to this organization in the development of a Green Roof Life Cycle Cost Calculator intended to assist industry professionals responsible for green roof projects. TRCA staff will also attend and present the York University study findings at GRHC's Greening Rooftops for Sustainable Communities Conference in the spring of 2007.

Permeable Pavement and Bioretention Swale Demonstration Project

In September 2004, the TRCA retrofitted a portion of a parking lot at Seneca College, King Campus with permeable concrete block pavement and a bioretention swale in order to monitor their performance as a stormwater infiltration technology. The site includes a custom designed drainage networks that permits the monitoring of water quantity and quality of surface runoff and infiltrate. In addition, all instrumentation is powered via solar panels and a wind turbine. Beginning in the fall of 2005, monitoring has been focused primarily on water quantity and quality, however, in 2006 the monitoring protocol was revised to include sediment quality and infiltration tests of both the Seneca site and at six older permeable pavement installations, as well as, subgrade/pavement temperature and storage monitoring in order to answer concerns raised about pollutant accumulation and the affects of winter. For 2007, monitoring will continue with the intention of testing the permeable pavements structural stability under various moisture conditions and weight loads. A final report will be published in March 2008 and it is expected that results and other literature will be used to develop GTA design guidelines for these two technologies.

Rainwater Harvesting Demonstration Project

Collecting rainwater from roofs and using it for non-potable domestic use (e.g. irrigation) can significantly reduce runoff, while at the same time relieving pollution and flooding pressures on local watersheds. This project will be undertaken from April 2006 - March 2008 to evaluate the benefit of rainwater harvesting (RWH) systems and explore potential barriers (e.g. cost, regulation) and incentives (e.g. tax benefits) for the adaptation of RWH on commercial properties. For this study, two sites were chosen: i) Metro Label printing facility and ii) a newly constructed condominium by Minto Developments. While both buildings are LEED certified (silver and gold respectively) and will be using the RWH system for irrigation and several toilets, they differ significantly in rainfall collection area and water use demand. By observing the performance of these very different RWH systems in terms of water/sediment quality and quantity, considerations can be made in order to conclude the viability of RWH system applications in Toronto and the Greater Toronto Area.

Erosion and Sediment Control Practices Evaluation: Ground Truthing the Guideline

In Ontario, sediment control measures have been required on construction sites for over a decade. However in many cases, recommended practices are either not implemented, improperly installed, under-engineered or not maintained. As a result, elevated levels of suspended sediment in local watercourses can degrade water quality, increase stream flooding, influence geomorphic stability and cause deleterious effects on aquatic life. According to the Greater Golden Horseshoe Conservation Authorities Erosion and Sediment Control Guideline for Urban Construction (December 2006), an effective erosion and sediment control (ESC) plan should involve a multi-barrier approach which includes both erosion prevention and the application of various measures (e.g. ESC ponds) designed to reduce sediment transport from a construction site.

This study which will be conducted from April 2007 to March 2009 is expected to monitor the effectiveness of a guideline designed ESC plan for a new development underway in the City of Vaughan from the beginning to final stages of construction. The ESC plan process will be directed by a steering committee made up of both public and private candidates and for the first time demonstrate the effectiveness of a web-based tracking tool which will document and communicate all plan attributes to all involved with the ESC plan (e.g. committee to field staff). While construction has not yet started, in 2007 the study focus will be developing a monitoring protocol and baseline monitoring of current study area conditions including in-stream water quality and quantity, local populations, study area land use and habitat conditions. The study results and practical knowledge acquired through this process will be applied in training workshops on application of the new ESC guideline.

SUSTAINABLE PRACTICES RESEARCH PROJECTS

Community-based social marketing research and a survey of new home buyers was conducted to inform implementation strategies for lot level stormwater management and naturalized landscaping. Recommendations from the studies are being incorporated in the watershed plans to address water balance and other sustainability objectives.

NEAR URBAN AGRICULTURE

The acquisition of property by TRCA since the 1950's resulted in an inventory of productive agricultural land which has historically been rented on an annual basis for conventional crops such as corn, soybeans, alfalfa and some livestock pasturing. Due in large part to the advance of urban sprawl, economic pressures and other needs for this land by TRCA, agricultural use has steadily declined. Today, there is a total of 2,960 acres (1,396 hectares) being rented for agricultural use: 2,000 acres (800 hectares) in the Rouge River watershed, 900 acres (360 hectares) in Humber River watershed and 60 acres (24 hectares) in the Duffins Creek watershed.

TRCA could have a meaningful role in the evolution of a new kind of agriculture in the Toronto region because of its land base. A vision for a new form of agriculture on TRCA-owned lands includes making smaller farm areas more profitable through the use of new, innovative and land intensive agricultural production methods. It will involve finding new partners and maybe growing new kinds of crops to satisfy a need for locally grown products that cater to the changing demographics.

Contributing to near urban agriculture will help achieve The Living City objective for Sustainable Communities by:

- promoting social equity and food security in communities by providing opportunities for increased accessibility to fresh, healthy foods;
- providing opportunities for community economic development by helping to reduce the number of imports and by creating jobs and meaningful work for the local people;
- reducing our ecological footprint by providing locally grown and sold food, reducing food miles and greenhouse gas emissions related to food transportation;
- providing a space for celebrating the cultural diversity of communities by growing a new range of crops sought after by new Canadians.

In 2005 TRCA entered a partnership with the City of Toronto and a number of other community groups to initiate an urban farm on 8 acres (3 hectares) of TRCA-owned land within the boundaries of Black Creek Pioneer Village. The objectives are to:

- build community capacity to address local food security and environmental issues;
- promote healthy nutrition and active lifestyles;
- increase the availability of rare and nearly extinct vegetable and other plant species;
- increase participants' knowledge and skills in organic farming and environmental stewardship;
- generate and disseminate knowledge in sustainable agriculture and community development;
- create meaningful employment opportunities for local youth;
- enable youth to develop employment, leadership and entrepreneurial skills.

TRCA staff is currently working on a discussion paper and policy for agricultural use on TRCA-owned land. Other partners are also being sought that may have an interest in near urban agricultural ventures across TRCA's jurisdiction.

ONTARIO CENTRE FOR ENVIRONMENTAL TECHNOLOGY ADVANCEMENT

In 2003, TRCA entered into an agreement with Environment Canada to be the lead, with Ontario Centre for Environmental Technology Advancement (OCETA) remaining as the delivery agent, for the Toronto Region Sustainability Program. This program provides small to medium sized manufacturing enterprises in the Toronto region with a 50% cost-share funding incentive (up to a maximum of \$4,000) for pollution prevention planning. The objectives of the program are to create an action and results oriented program in Toronto to advance the performance of small and medium enterprise (SMEs) and manufacturing operations in the City of Toronto in areas of sustainable development and environmental performance in line with Environment Canada's objectives.

In 2004, TRCA watershed specialists worked to initiate support for OCETA by engaging local manufacturers; TRCA and OCETA staff worked together to promote Toronto Region Sustainability Program through conferences and workshops; and TRCA worked to gain municipal support by developing a framework for shared action.

In 2005, TRCA entered into an agreement with the City of Vaughan and OCETA to develop the Vaughan Manufacturer's Sustainability Program to engage SMEs in Vaughan under the Toronto Region Sustainability Program. Staff is attempting to develop similar agreements with municipalities across the Toronto region.

GREATER TORONTO ATMOSPHERIC FUND

At Authority Meeting #7/05, held on September 30, 2005, Resolution #A187/05 was approved, as follows:

WHEREAS at the annual GTA Smog Summit this year, representatives of the federal and provincial governments, along with municipal politicians from across the Greater Toronto Area (GTA), signed a declaration expressing their intent to explore the creation of a GTA-wide climate and clean air agency on the model of the Toronto Atmospheric Fund;

WHEREAS the year 2005 has seen the highest number of air quality alerts in the history of the region;

WHEREAS parts of the GTA are experiencing constraints in electricity supply through the provincial grid;

WHEREAS municipalities in the GTA recognize the serious effects that climate change will have on the region's economic, environmental and social health;

WHEREAS rising energy prices are creating a strain on municipal budgets;

WHEREAS the creation of a GTA climate and clean air agency would assist GTA municipalities, as well as the federal and provincial governments, in dealing with these problems;

THEREFORE LET IT BE RESOLVED THAT the Toronto and Region Conservation Authority call on the federal and provincial governments to fund the creation and ongoing operation of such an agency, based on the Toronto Atmospheric Fund model, said agency to work in cooperation with the GTA regions and local municipalities, as well as with senior levels of government, other public sector agencies, and the private and not-for-profit sectors, in dealing with clean air and climate change issues across the GTA;

AND FURTHER THAT the local municipalities and regional Medical Officers of Health in the GTA be so advised.

Discussions are underway with the Toronto Atmospheric Fund and the GTA Clean Air Partnership to establish the Greater Toronto Atmospheric Fund. Staff is seeking approval from the Authority to pursue a partnership with TAF and CAP to establish the GTAF, and to develop proposals with these two agencies to seek funding from the provincial and federal governments. If funding is achieved, GTAF will be administered by a secretariat at TRCA with the goal of advancing building retrofits, energy efficiency and renewable technology applications.

Report prepared by: Kathy Stranks, extension 5264
For Information contact: Glenn MacMillan, extension 5212;
Brian Dundas, extension 5262;
Renée Jarrett, extension 5315;
Gary Wilkins, extension 5211

Date: April 5, 2007

TO: Chair and Members of the Sustainable Communities Board
Meeting #1/07, April 13, 2007

FROM: Deborah Martin-Downs, Director, Ecology

RE: RENEWABLE ENERGY DISCUSSION PAPER

KEY ISSUE

To determine what additional role Toronto and Region Conservation Authority can, or should play, in the transformation of the market place for renewable energy.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT staff be directed to prepare a discussion paper, in collaboration with leaders in the field, to determine what additional role Toronto and Region Conservation Authority (TRCA) can, or should play, in the transformation of the market place for renewable energy;

AND FURTHER THAT staff report back to the Sustainable Communities Board in September, 2007 with the final draft of the discussion paper.

BACKGROUND

There is a general understanding that energy use is one of the most significant factors contributing to climate change. According to the National Round Table on the Environment and Energy (NRTEE), addressing the impact of energy on climate change requires examining two key areas: how energy is used and how it is produced. TRCA is involved in a number of strategic activities that target these two key areas of energy activity.

Energy Use

TRCA is currently pursuing a number of sector based energy efficiency programs such as the Mayors' Megawatt Challenge, Greening Health Care and Sustainable Schools. Through these programs, TRCA assists more than 40 institutional organizations in improving their energy efficiency and environmental management in the Greater Golden Horseshoe region.

Energy Production

NRTEE recommends addressing several areas of energy production in terms of climate change. TRCA cannot influence carbon capture and sequestration in the oil and gas sector. However, the other two key areas recommended for activity by NRTEE are combined heat and power (CHP) projects and renewables, and TRCA can play a role in these. For example, in the past year, TRCA hired Tridel Corporation using funding from Ontario Power Authority and Toronto Atmospheric Fund to design a CHP installation for a high rise residential building. TRCA has been involved in renewable energy education and training for more than 25 years through the Kortright Centre for Conservation.

RATIONALE

There have been several nationally and provincially focussed strategy documents developed in recent years by organizations such as the Pembina Institute, David Suzuki Foundation, Canadian Renewable Energy Alliance and others. Staff believe there is a significant opportunity to build on TRCA's current renewable energy initiatives and the strategy documents already developed. There is also a significant opportunity to identify strategic leverage points (opportunities) for TRCA and its partners to transform the marketplace for renewable energy in the Greater Golden Horseshoe region.

TRCA is in a good position to engage key government and non-government organizations (NGOs) in the development of a discussion paper. With its regional focus and municipal partners, TRCA is well situated to facilitate a process to synthesize the recommendations and issues being addressed in key documents already published, identify who is acting on the recommendations and what is being done, identify gaps in the current activities and make recommendations for actions in strategic areas.

DETAILS OF WORK TO BE DONE

- Internal meeting with staff to confirm direction and approach (completed).
- Compile and synthesize key reports (completed).
- Meet with key NGOs and government agencies to engage them in the project (mid to late May).
- Complete draft report (end of June).
- Broad circulation for profile and feedback (3 months).
- Finalize and publish report (September, 2007).

FINANCIAL DETAILS

\$10,000 from PowerStream's 2006 contribution to The Living City has been allocated for this project, as well as \$10,000 from the Regional Municipality of Peel and \$10,000 from the City of Toronto.

Report prepared by: Bernie McIntyre, extension 5326
For Information contact: Bernie McIntyre, extension 5326
Date: March 28, 2007

TO: Chair and Members of the Sustainable Communities Board
Meeting #1/07, April 13, 2007

FROM: Carolyn Woodland, Director, Planning and Development

RE: **BOLTON ARTERIAL ROADS STAGE 2**
Class Environmental Assessment

KEY ISSUE

To provide information regarding the Bolton Arterial Roads Stage 2 Class Environmental Assessment.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT the Town of Caledon be advised that the South Alignment, as proposed in the Draft Environmental Study Report, dated January 2007, is satisfactory to the Toronto and Region Conservation Authority (TRCA) subject to the conditions provided in this report;

AND FURTHER THAT the Humber Watershed Alliance be advised of the Authority's position.

BACKGROUND

In 1983, the Town of Caledon completed the Bolton Transportation Study which identified that an eastern arterial needed to be developed along the Vaughan/King/Caledon Townline Road. The town completed an Environmental Study Report for the proposed works in 1988 at which time concerns were raised with respect to the need for the proposal, its links to other arterial roads in the Bolton area, and the potential environmental effects. As a result, in 1989, the Minister of the Environment (MOE) "bumped up" the level of study required for the project to an Individual Environmental Assessment (IEA).

The IEA report was submitted to the Ministry in 1997 and divided the proposal into two stages. Stage 1 included immediate improvements to the transportation network, including the reconstruction/construction of both Townline Road and Coleraine Drive, south of King Street. Stage 2 included a "by-pass" road around the Village of Bolton from King Street and Coleraine Drive, extending north, crossing Duffy's Lane and Regional Road 50 and then running southeast to connect with King Road at Townline Road (Exhibit 5-1).

Concerns regarding the IEA were raised by TRCA related to significant impacts on landform features and functions of the Humber River watershed, as well as significant impacts on the management and operation of TRCA's Bolton Resource Management Tract. On February 21, 1997, the Authority recommended that staff advise MOE and the Town of Caledon that TRCA could not support the proposed alignments for the Bolton By-pass (Res. #A310/96), between Duffy's Lane and Regional Road 50.

The town submitted a formal amendment to the IEA in 1998 which moved the alignment to the northern limits of TRCA property (Exhibit 3). The Bolton Arterial Roads IEA was approved by the Minister of the Environment in April 2000. For Stage 2, however, as part of the Conditions of Approval set forth by MOE, it was required that a future Municipal Roads Class Environmental Assessment (EA) be carried out for confirmation of the road alignment between Duffy's Lane and Regional Road 50.

Bolton Arterial Roads Stage 2 - Environmental Study Report

There are two alignments being discussed at this time. The first alignment is the WN2 Refinement which is located at the northern limit of TRCA property. The second alignment is the South Alternative which is located approximately 240 m south of TRCA property's north boundary line (Exhibit 5-1). The South Alternative was proposed so that the WN2 Refinement (northerly alignment) would not sever a farmland parcel. In a letter prepared by TRCA dated August 11, 2006, it was noted that further to previous discussions with the Town of Caledon, the consultant, the farm owners and TRCA technical staff, it was determined that TRCA staff has no objection in principle to the southern alignment based on the town's commitment to address TRCA's outstanding concerns.

The Draft Environmental Study Report (ESR), dated January 2007 was received on March 9, 2007. The draft ESR concluded that the South Alternative is the most technically preferred and through enhancements, impacts to the environment will be minimized and mitigated through the following conditions:

Conditions pursuant to the Authority approved Res. #A300/97:

- TRCA has traditionally made lands available for municipal road widenings and servicing purposes at no cost. The Town of Caledon should be aware that since the optional alignment involves a substantial area of tableland where no road presently exists, TRCA may seek compensation for the land, if and when the road project proceeds, so that further greenspace acquisition could take place.
- Given the extent of TRCA land holdings to the north of Bolton and the value of these large blocks of TRCA-owned lands as contiguous greenspaces, the Town of Caledon should seriously consider protecting these lands from any proposals for new road crossings between the Bolton Resource Management Tract and the north end of Albion Hills Conservation Area.
- The connection from Duffy's Lane to the by-pass be shifted north of the tributary feature and minimize further encroachment into the Bolton Resource Management Tract parcel, maximizing the length of the existing Duffy's Lane right-of-way to be decommissioned.
- The Humber Valley Heritage Trail Association has established a basic trail which links Bolton to Albion Hills Conservation Area, through these lands. Maintenance of the regional trail through the Bolton Resource Management Tract lands, in the vicinity of the new arterial road and improvements such as the Humber River bridge, should be accomplished as part of this road project.
- Aquatic habitat creation projects in the area previously impacted by the Duffy's Lane crossing of the Humber River should be part of the detailed design phase of this project and put in place as part of the construction of the road.
- Terrestrial habitat creation projects where the opportunity exists, including reforestation efforts and the creation of wetlands where conditions permit, should be part of the final construction phases.

- Stormwater quality and quantity treatment for the runoff from all new impervious surfaces will need to be incorporated in the final design according to the best management practices at that time.
- Archaeological assessment of resources and appropriate measures to protect them.
- Interpretive signage along the new road.
- Permits pursuant to Ontario Regulation 158 (now 166/06).

Additional conditions pursuant to TRCA review of the draft ESR:

- Commitment to incorporate requirements of the Humber Valley Trail Association regarding the relocation of the trail to have an underpass instead of a grade crossing.
- Commitment to appropriately span the wetland and watercourse crossings associated with the new alignment.

Staff will continue to be involved in the review process, once the project reaches the detailed design stage, to ensure that our concerns are addressed, appropriate watercourse crossing spans are achieved and that appropriate compensation is obtained.

DETAILS OF WORK TO BE DONE

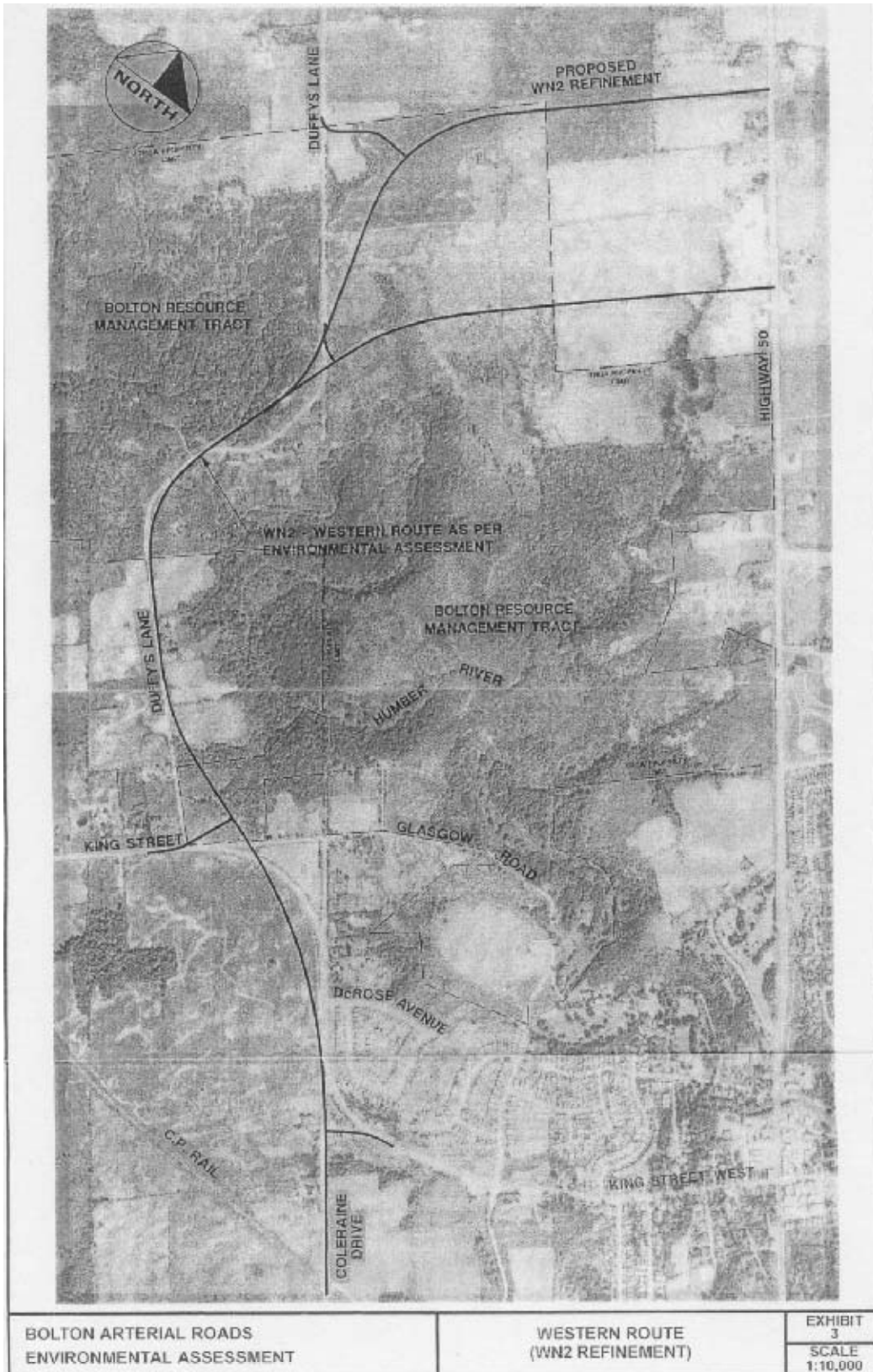
TRCA staff is currently preparing additional comments on the draft ESR and will be including the above-noted comments as part of the letter. It is expected that the town will be filing the final ESR for 30-day public review the week of April 9, 2007 and it is our expectation that the comments will be fully addressed, prior to final approval.

Report prepared by: Sharon Lingertat, extension 5717
For Information contact: Beth Williston, extension 5217
Date: April 03, 2007
Attachments: 3

Attachment 1



Attachment 2



Attachment 3



TO: Chair and Members of the Sustainable Communities Board
Meeting #1/07, April 13, 2007

FROM: Deborah Martin-Downs, Director, Ecology

RE: **CITY OF VAUGHAN BLOCK 39**
Progress Update

KEY ISSUE

Draft approval for Block 39 is in place and preliminary design work is underway to ensure sustainable features including Energy Star commitment for all homes.

RECOMMENDATION

IT IS RECOMMENDED THAT the staff report entitled "City of Vaughan Block 39 Progress Update" be received.

BACKGROUND

Over the past 18 months, Toronto and Region Conservation Authority (TRCA), City of Vaughan, PowerStream Inc., CastlePoint Investment Group and Canada Mortgage and Housing Corporation (CMHC) have been working together to develop Block 39 in the City of Vaughan as an example of sustainable development. As a measure of success to date, the Block 39 project was identified in January 2007 by Enerquality Corporation and the Ontario Home Builders Association as the largest Energy Star community under development in the province. Building on this success, project partners are working to maximize the site potential for sustainable measures beyond Energy Star. Some of these measures under consideration include:

Site Opportunities

- naturalized landscaping;
- pedestrian/cycling right-of-ways;
- parkway linkages;
- permeable paving for driveways and public areas;
- rain barrel program.

Utility Support - PowerStream

- infrastructure assistance program;
- transformers: reduced quantity, smaller and new technology;
- energy efficient street lighting and reduced quantity;
- Smart Meters with Load Control program.

Home Builder Initiatives

- Energy Star Homes;
- pre-wiring for photovoltaic;
- solar/tankless water heating option package;
- air quality assurance during building process;
- enviro-friendly, inert releasing agent for forms;
- Indoor Air option package for home owners including consideration of Low Volatile Organic Compounds (VOC) and no formaldehyde materials.

Homeowner Support for Sustainable Living

- sustainable living workshops at The Living City Campus;
- Archetype Sustainable House tours and demonstrations.

In addition to the above initiatives, TRCA introduced zerofootprint to the builders. Zerofootprint is an organization promoting geothermal heating and cooling for the community. The use of geothermal technology in community applications is running into some resistance due to the perceived poor reputation these systems have with the Block 39 builders. This reputation resulted from application problems 20-30 years ago. Advances in geothermal installation techniques have come a long way since that time. TRCA and zerofootprint staff are working to address the builder's concerns.

Report prepared by: Andrew Bowerbank, extension 5343
For Information contact: Andrew Bowerbank, extension 5343
Date: March 23, 2007

TO: Chair and Members of the Sustainable Communities Board
Meeting #1/07, April 13, 2007

FROM: James W. Dillane, Director, Finance and Business Services

RE: **SUSTAINABILITY MANAGEMENT SYSTEM**
2006 Annual Report

KEY ISSUE

Toronto and Region Conservation Authority (TRCA) Operational Sustainability 2006 Report and 2007 priorities.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT the 2006 Sustainable Management System Annual Report be received.

BACKGROUND

At Authority Meeting #10/99, held on October 29, 1999, Resolution #A278/99 was approved as follows:

THAT the proposed corporate Environmental Policy Statement be adopted;

AND FURTHER THAT the proposed framework for implementing an Environmental Management System be approved.

Extensive staff consultation, research and planning following this resolution resulted in an initial set of environmental management targets and objectives. These were finalized in 2002. Initially, under the Environmental Management System (EMS), only environmental targets were set. The program was expanded in 2004 to allow for inclusion of social and economic targets and renamed Sustainability Management System in order to better manage Toronto and Region Conservation Authority's (TRCA) organizational movement toward sustainability.

The Sustainability Management System (SMS) enables TRCA Managers to continually review, consult, monitor, report, revise and improve TRCA's environmental performance in selected areas where internal operations have significant impact on the environment. These areas are called 'significant aspects' under ISO 14000 terminology, one global standard for environmental management systems.

SMS HIGHLIGHTS FROM 2006

In 2006, TRCA's Field Centres, the Kortright Centre for Conservation (KCC) and Black Creek Pioneer Village (BCPV) became certified EcoSchools. EcoSchools certification demands high environmental performance and the integration of sustainable operations into the curriculum. This is a major development and a laudable achievement.

Also in 2006, TRCA revamped the EcoSchools program to fit our office facilities and renamed it EcoOffices. Just as they had been set up at the educational facilities under the EcoSchools program, EcoTeams have been finalized for the following offices:

- Boyd/New Restoration Services Centre
- Downsview
- Head Office (5 Shoreham)
- Eastville (tentative)

Certification of offices as EcoOffices is targeted for 2008. Permission to use EcoSchools materials and branding for TRCA's internally developed EcoOffices initiative was provided by Ontario EcoSchools.

2006 also saw the establishment of 'Sustainability Centers' at the Boyd, Downsview and Head Offices. The centers are displays (chalk and bulletin boards) where information about TRCA sustainable operations is communicated to staff. The center has a resource box attached to it, so staff can go and retrieve tips, information, contact names, and/or TRCA policies related to operating more sustainably.

TRCA took a significant step toward managing its facility energy use in 2006 by initiating a contract with BOSS Online, a web-based energy and water use tracking system. Establishing baseline energy usage is the first step in the goal of dramatically reducing the amount of energy consumed. This service will allow energy use to be measured accurately, factoring out the impact of annual weather patterns. Once trends are observed, steps can be taken toward improvement and accurate reporting of successes.

TRCA pursued Audubon certification for Bathurst Glen Golf Course, receiving environmental planning certification, naturalizing more than four acres of previous manicured turf, increasing cultural practices to reduce maintenance and chemical application and completing plans for additional Wildlife and Habitat Enhancement for 2007 implementation.

TRCA's Electronic Information Management System implementation continued with the establishment of the Laserfiche document system. This electronic filing system will significantly reduce paper consumption.

Other sustainability initiatives and accomplishments in 2006:

- The beginning of construction of the new Restoration Services Centre, a Leadership in Energy and Environmental Design (LEED) certified 'green' building;
- Completed 5 year project to mitigate (remove or retire) approximately 28 underground storage tanks;
- Continued purchasing of green products, with the addition of:
 - a new requirement to request bids from Eco Certified printing companies,
 - employees to stay at green certified hotels when away on business, and
 - mandatory purchasing of energy efficient flat screen monitors;
- 20% of electrical energy used at TRCA is green sourced;
- Completed removal of pit toilets at Conservation Areas (CAs) (2005);
- Six buildings at BCPV have been converted to gas from oil heating as part of the BCPV energy conservation initiatives;
- Four new seasonal wetlands have been created at KCC (over past couple of years);

- Installed solar hot water system at Indian Line Campground to supplement existing electric heaters to ensure that there is sufficient hot water to meet demand and reduce hydro requirements;
- KCC entrance walkway lighting changed to energy efficient Light Emitting Diode (LED) fixtures;
- Converted pool at Indian Line Campground to salt water system reducing chlorine usage;
- Targeting of higher use vehicles, such as Central Services and Enforcement Officers vehicles, for greater efficiency. In 2006 two new central services vans were purchased. One vehicle has a smaller gasoline V8 motor than in previous vans and the other vehicle is powered by a Diesel motor with a light fiberglass body. The gasoline van improved by 1L/100 kilometres and the diesel-powered van's fuel use was 6l/100 kilometres, which relates to a 30% improved efficiency. Two of the Enforcement vehicles were replaced with Honda Ridgeline Pickup trucks. The improvement in fuel usage was 3 and 4 litres/100 Kilometres which is 15%-20% improvement respectively;
- Purchased a new Toyota Prius vehicle in 2006, bringing the number of hybrid vehicles in the fleet to 3;
- Fleet mileage has improved from 17.2 L/100 km to 15.0 L/100 km between 2003 and 2006;
- As part of a test program, a small gas powered coolant heater has been placed in a Central Services cargo van. This unit, called BlueHeat, uses the vehicle's existing fuel and electrical supply to heat the engine coolant and circulate it to heat the engine and vehicle interior. This simultaneously defrosts the windshield without idling the engine. It uses a small amount of fuel (.6l/hour) to heat the coolant. The program is aimed at reducing idling. If this unit works efficiently this winter season, additional units may be installed in other trucks;
- Improved the mileage recording sheets for all TRCA vehicles to include the number of passengers in the vehicles during the trip. This will help set targets for the types of vehicles required to meet the needs of work locations. This information is primarily important for the pool vehicles at Head Office and the Downsview Office;
- Using BioDiesel at the Claremont Field Centre and KCC in the landscape equipment. No technical problems have been encountered with the motors. Expansion of the use of Bio-Diesel fuel is planned for Glen Haffy CA and the Nursery this summer;
- Expanded an existing program that donates used cell phones to food banks to include staff member's personal phones;
- Expanded program for computer recycling to staff personal computers (e.g. computers at home);
- Instituted bicycle commuting between Head Office and Downsview Office with purchase of bikes and bike racks; and
- Replaced inefficient Head Office toilets with high performance, low-flow models.

As in every year, SMS continued its regular auditing of unnecessary idling, adherence to smog day policies, best practices of sediment control structures and the shutting off of lights and computers when not in use. "Turn off computer" and "turn off lights" reminder stickers have been produced and posted at various facilities.

Social Indicators of Sustainability

Quality of Working Life:

1. Overtime is less than 0.5% of total salary dollars for the second year.
2. Absence due to illness is up 4.77 days per employee vs 4.16 in 2005, but is less than the national average of 9 to 10 days.
3. Work/life balance indicators have improved by 1.3 points on a scale of 5 as indicated by the 2006 Employee Survey.
4. Employee Engagement improved from 1.89 to 1.84 as indicated by the 2006 Employee Survey.

Diversity and Social Equity

1. 20 Mentees currently being mentored at TRCA.
2. 30 Internationally trained professionals are seeking professional accreditation through TRCA programs.
3. 10% of staff were born outside of Canada (Benchmark Source: 2006 Employee Survey)
4. All Staff trained in Diversity.

In 2007, the SMS will focus on launching the EcoOffice program (with establishment of EcoTeams), greening the vehicle fleet and developing a corporate Energy Management Plan to set a path for significant reductions in our energy use at facilities.

The list of new SMS targets for 2007 is as follows:

- EcoTeams meeting and operating at Head Office, Boyd/Restoration Services Building and Downsview;
- EcoTeams to investigate site-specific office temperature policies for heating and cooling seasons;
- EcoTeams to address and report on waste management issues, including composter performance and benchmarking;
- Enact Thermal curtains at Downsview (note: Downsview Park initiative);
- New Heating, Ventilation and Air Conditioning (HVAC) system for Downsview (note: Downsview Park initiative);
- Continue getting mandatory bids from at least one EcoLogo certified printer and compile data on reliability, quality and price differential to determine if a certified printer can be used every time;
- Research viability of more than 50% recycled paper and/or eco-certified sources of paper (e.g. forest certifications) by surveying partner municipalities for policies;
- Consider adding green catering companies to mandatory procurement list;
- Pursue Energinox systems for recovering waste energy in cooking/food services operations;
- Develop online energy and water tracking and redo TRCA performance reporting;
- Consider expansion of Restoration Services Building car pool policy to other offices;
- Train and begin reporting on our Green House Gas totals;
- Investigate needs for calculating TRCA 'corporate footprint';
- Investigate centralized shutdown of computers;
- Consider implementation of Green Performance awards for sustainable operations;

- Pursue installation of LED exit lighting;
- Investigate staff concerns over sustainability practices at external meeting facilities;
- Reinforce 'no idling' efforts;
- Prepare and distribute additional prompts for staff use (e.g. no idling, turn off lights and computers and print double sided);
- Investigate ethanol in Canadian gasoline. Is Sunoco still the leader? Think about incentives to staff for using;
- Look into recyclable food containers at food services;
- Create Sustainability Centres for other facilities that request;
- Pursue Social Purchasing Portal membership and opportunities associated with it; and
- Continue biodiesel implementation and monitoring.

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