THE TORONTO AND REGION CONSERVATION AUTHORITY

Sustainable Communities Board Meeting #3/06

Chair:	Michael Di Biase
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	John Sprovieri
	Michael Thompson
	Dick O'Brien - Chair, Authority

October 13, 2006
11:00 A.M.
SOUTH THEATRE, BLACK CREEK PIONEER VILLAGE

AGENDA

1. MINUTES OF MEETING #2/06, HELD ON JUNE 9, 2006 — Pages
(Minutes Summary enclosed herewith on GREEN)

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 Reneé Jarrett, Senior Manager, Education, in regards to item 7.1 - EcoSchools Certification of Toronto and Region Conservation Authority Education Facilities.

8.3 KNOWING NATURE, STAYING SAFER PROGRAM
Toronto and Region Conservation Authority Education and Conservation Parks Initiative 47-49

8.4 BUILDING CODE ENERGY STANDARDS
Recommended Changes 50-54

9. NEW BUSINESS

NEXT MEETING OF THE SUSTAINABLE COMMUNITIES BOARD #4/06,
TO BE HELD ON DECEMBER 1, 2006, IN THE
HUMBER ROOM, HEAD OFFICE AT 11:00 A.M.

Brian E. Denney
Chief Administrative Officer

/af

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Adele Freeman, Director, Watershed Management

RE: ECOSCHOOLS CERTIFICATION OF TORONTO AND REGION CONSERVATION AUTHORITY EDUCATION FACILITIES

KEY ISSUE

The celebration and presentation of EcoSchools Certification Awards to all five Toronto and Region Conservation Authority education facilities.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT the efforts of the Kortright Centre for Conservation, Black Creek Pioneer Village, Albion Hills Field Centre, Lake St. George Field Centre and Claremont Field Centre be congratulated for their achievement of Gold and Silver EcoSchools Certification during the 2005-2006 academic year;

THAT the five education facilities continue to demonstrate their commitment to educating for sustainable living through their teaching and facilities operations by participating in the Ontario EcoSchools program in 2006-2007;

THAT litterless lunches and snacks be promoted to visiting classes as a means to increase their participation in Toronto and Region Conservation Authority's (TRCA) EcoSchools Program while decreasing the production of waste at the education facilities;

THAT efficient ways to purchase a greater amount of local and organic produce and foodstuffs be researched as a means to decrease the education facilities' ecological footprints, and to further build on 2005-2006 EcoSchools Certification achievements;

AND FURTHER THAT TRCA continue to promote EcoSchools to other conservation authorities and district school boards as a means to creating a culture of sustainability in Ontario.

BACKGROUND

At Authority Meeting #1/05, held on February 25, 2005, a report on the Ontario EcoSchools Program which charted its progress within the education community was received. Resolution #A11/05 was approved in part as follows:

> *THAT staff continue to work with the project partners, conservation authorities and the education community to implement the program across the province;*
>
> *THAT staff integrate this work into other Toronto and Region Conservation Authority (TRCA) education programs, projects and initiatives;*
>
> *THAT the education facilities of TRCA pursue certification as EcoSchools facilities;*

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's 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 the five TRCA education facilities.

RATIONALE

In June 2006, TRCA's 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. Throughout the academic year, each facility went through the process of completing EcoReviews for waste and energy, setting goals through action plans, implementing their goals and documenting all work in a certification portfolio. The TRCA EcoSchools auditing team, comprised of TRCA staff Sarah Kear, Manager of Education Curriculum, Brian Dundas, Coordinator of Sustainability Management Systems, and Catherine Mahler, the Ontario EcoSchools Program Coordinator, toured each of the five facilities to see and share the results of each facilities' year of hard work in action. Tours included presentations by the EcoTeams (teaching, administration and operations staff) on changes made to facilities operations and new initiatives in teaching and communicating ecological literacy. TRCA policy and guidelines, as set out in the SMS, were also fully integrated into the EcoSchools Certification Guide.

Based on the certification portfolios and tours, points were awarded and tabulated under the seven EcoSchools Certification categories:

- The Five-Step Process (forming an EcoTeam, conducting EcoReview, developing the Action Plan, implementing the Action Plan, monitoring and evaluating progress)
- Energy Conservation
- Waste Minimization
- Curriculum
- Staff Development
- Enriching your Program
- Innovative Projects

The results: one silver and four gold Ontario EcoSchools certifications.

Each site is to be congratulated for the way in which their EcoTeams came together in a unified effort to make EcoSchools their own within the basic structure of the EcoSchools program. This was particularly evidenced at Black Creek Pioneer Village, which made a strong start by integrating sustainability issues into its history curriculum. Also of note was the switch to 100% green power at the Kortright Centre for Conservation. The three residential field centres, Claremont, Albion Hills and Lake St. George, are to be commended for their achievements in waste minimization (recycling, composting, student waste-watch programming) and the new initiative to get students involved in EcoSchools over their extended stay through the 'Lights Off' programs.

It is difficult to do justice to the insights and initiatives of a year's worth of work. To assist, the EcoTeams from each facility prepared their own narrative EcoSchools story as set out in Attachment 1. These stories will also be found on our website (November 2006) for other schools to read and be inspired in their own EcoSchools journeys.

DETAILS OF WORK TO BE DONE

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. It is important that this work continue. Black Creek Pioneer Village is also the first museum to achieve certification. 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.

One of these key areas is food in terms of its production, transportation and disposal. The most attainable goal in this area is to reduce the amount of waste produced at our centres through encouraging day visitors to bring litterless lunches (and to bring compostables back to school) and overnight visitors to choose snacks that are completely edible and compostable (such as fruit), or in bulk, so as to avoid the waste from individually packaged items. A longer term goal is to find cost effective ways to purchase more local and/or organic produce and foodstuffs to reduce the ecological footprints of the education facilities. 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.

Hand in hand with the goal to produce less waste is the efficient diversion of waste produced by visitors to either recycling or compost bins. The field centres have well established programs and systems in place for this and Kortright and Black Creek Pioneer Village are making strong inroads.

Report prepared by: Sarah Kear, extension 5234
For Information contact: Sarah Kear, extension 5234
Date: September 13, 2006.
Attachments: 1

Attachment 1

OUR ECOSCHOOLS STORIES

Albion Hills Field Centre

When our Albion Hills Field Centre staff were first approached with the concept of participating in the EcoSchools Program, it is fair to say that there was a range of responses – from those enthusiastic about a new challenge to anxiety among those thinking that we were embarking on a monumental challenge! One year later, the team of participants discovered that our journey to Gold Certification was a realization. We are proud of the improvements we made and look forward to the opportunity to share our EcoSchools story with our visiting students and teachers.

Step one in our EcoSchools journey was to form an EcoTeam. It was important to be totally inclusive of all staff members. Each brought to the process personal and professional knowledge and interest in the areas of their responsibilities. This made identifying and improving our use of energy-related resources more effective and rewarding to the process. The “all-for-one and one-for-all” approach was a significant component of our success in year one!

As our EcoTeam progressed, it became apparent that we already had many green initiatives in our daily routines and practices, however the EcoReviews for Waste and Energy required that we formalize them by naming them and documenting the benefits and savings achieved. Finally, photos, measurements and calculations were forwarded on to the EcoSchools Program coordinator before completing the audit and site visit.

Our most significant decreases in energy and resource consumption were achieved in the areas of water and hydro use. A 75 per cent reduction (+ 300,000 L) in water use will be realized over the course of the year by using new water saver showerheads. Hydroelectric demand for dormitory lighting will be reduced by 50 per cent by using new high efficiency compact florescent bulbs.

Waste Watch is a program that monitors and encourages zero food waste at mealtime. New recycling centres added throughout the field centre, along with a flyer encouraging teachers to bring litterless snacks, have resulted in approximately a 30 per cent reduction in our waste.

Albion Hills Field Centre is excited to introduce two new programs to our visitors. EcoJeopardy uses EcoSchools principles to educate students in a fun evening program. EcoBuddies involves students in a monitoring program that helps to save energy and water. We also hope to liaise with other Toronto and Region Conservation (TRCA) facilities to share EcoSchools ideas that might be implemented at Albion in the future. The Albion team looks forward to the coming year as a Gold-Certified EcoSchool.

Black Creek Pioneer Village

The primary focus of our programs is historical, cultural and social, but we also emphasize the importance of the environment, where appropriate. The latter created a challenge for us to better integrate environmental information while at the same time maintaining the focus of our programs. Also, unlike traditional schools, students are only here for the length of their program – a few hours – as opposed to a whole school year. This presented an additional challenge of how to have impact on students in such a short time.

In the Five-Step process for EcoSchools Certification, the first is forming your EcoTeam. Ours includes representatives from all departments – Food Services, Education, Curatorial, Interpretation and others. We wanted to make sure that all areas could have input to the process. This worked very well and helped to generate many good ideas for our work. We tried to be effective with our time and limit both the number of meetings and the amount of paper produced. On the whole, it worked quite well.

When we conducted our EcoReviews we realized that we were already doing many of the things required to be environmentally friendly. It wasn't a big leap to figure out what else we needed to do and how to go about it. As always, starting out is half the battle. When you have been through the process once, you can see how it can be improved upon for the next year.

We were pleased by how far along we already were in energy conservation. As soon as we started discussing energy, several good suggestions came out about how we could improve in the future. This year we will be conducting an energy survey of all our buildings to see how we can do better.

Litterless lunch information is sent out to all schools that book education programs at the village. We were surprised to see how effectively this helped our overall goals. There was a significant reduction in the amount of garbage that students left, and therefore also in the work we need to do to bag and dispose of it!

As part of Toronto and Region Conservation (TRCA), we have developed a "Systems Thinking Curriculum for Learning in The Living City". This environmentally focused curriculum and the systems thinking training workshops that followed tied in nicely with the thrust of the EcoSchools movement. It will help us in our future programming and in educating the next generation to be good environmental stewards.

The EcoSchools movement has helped us to become more aware of our environment and how each one of us can make a difference. It has a lot to do with just changing our habits. We are looking forward to our second season of work as an EcoSchool so that we can improve upon what we have already done and make a greater contribution to the health and sustainability of our small corner of the globe.

Claremont Field Centre

As a facility that continually works hard to promote sustainable living, Claremont Field Centre was excited about taking on the challenge of becoming a Gold Certified EcoSchool! As our team went through the certification process, we found that the EcoSchools Program acted as a catalyst for many existing innovative ideas to become reality at our centre. The program allowed us to clearly identify targets and map out where we should be headed in terms of energy conservation, designing for shade and waste management. Motivated by our certification goals, the centre's staff expanded on traditional ideas and developed new practices, each resulting in the creation of an overall smaller ecological footprint. To date, we are very proud of our accomplishments and look forward to continuing our contribution to resource conservation and environmental education.

Claremont Field Centre took its first step towards EcoSchools certification by establishing an EcoTeam. Chaired by our program staff, EcoTeam meetings allowed us to share our successes and concerns throughout the initiation, implementation and review phases of certification. This collaborative effort also provided us with a venue for open communication between all areas of operations including building and grounds maintenance, food services and education.

Claremont's initial EcoReview was a valuable tool as it revealed that although we considered ourselves to be 'eco-friendly', there was more still we could do. After a satisfactory assessment of our energy conservation and waste management practices, we decided to develop an action plan that focused slightly more on innovative projects and program enrichment initiatives. Our EcoTeam worked together to provide continuous documentation and recommendations throughout the certification process which helped to keep us motivated and on-track.

Many of our energy conservation actions came as a result of retrofits to our facility. We installed a high-efficiency heating and air-conditioning system, switched to low-flow toilets in most washrooms and purchased three Energy Star rated refrigerators. Also, through the *EcoBuddies Program* guests were involved in self-monitoring to ensure that lights and faucets were turned off in the dorm areas.

New waste management initiatives were incorporated into the daily routines of both our staff and guests. Staff were encouraged to be more aware of waste being produced by office and administration activities. During their time at Claremont, guests were invited to participate in our *Zero Food Waste Challenge* and *EcoBuddies Program*. These two programs rewarded the groups with the least waste.

Some of Claremont's innovative projects have included: the initiation of a site greening program to increase the shade and windbreaks around the building; the planning and planting of a native butterfly garden; the development of the *EcoBuddies "Pledge to the Earth"* activity; and the presentation of an interactive *"Earth Day Birthday"* celebration for students.

During our first year in the EcoSchools Program, we feel that we have created a strong foundation on which to build in the future. Projects that were initiated this year will grow to have a greater impact next year. Achieving the Gold EcoSchools Certification has given us the confidence to move forward with more challenging initiatives too. We are currently exploring the possibility of installing a solar panel and have been in contact with organizations that may assist the centre in becoming completely "garbage-free". Based on our past success, we hope to expand the *EcoBuddies Program* to include increased student participation in the form of special projects (such as planting, building butterfly boxes, etc.).

Kortright Centre for Conservation

When we first looked at EcoSchools, we were not too sure if it would be an effective process for Kortright. After all, we are an outdoor education centre whose programming focuses on encouraging our students to be more environmentally aware and support sustainable practices. What more could we do? Upon further examination however, staff became more aware of the scope of the program, and began to see many areas where we could improve our own practices in our classrooms, offices, visitors centre and on our property. After introducing the program to staff the excitement began to build along with the anticipation of the improvements we could make. To successfully modify practices requires a total staff commitment so we moved on to the Five Step Process.

The first part of the process involves the establishment of an EcoTeam comprised of staff from all levels of the organization. Our team consists of the Kortright Manager, the Education Coordinator, the Operation's Manager, the Food Service and Retail Supervisor, and two Environmental Educators. Our first meeting was a brainstorming session to generate initiatives for Kortright. The team was then divided into two groups to complete the various EcoReviews. One team took on the Waste Minimization Review and the other the Energy Conservation Review.

Being a conservation area on 345 hectares of forest, meadows and wetlands we did not find the Designing for Shade and Energy Conservation review applicable to us. However, other two EcoReviews allowed us to assess what we were doing well and to identify new challenges. The following are some of the highlights of what we achieved in the EcoSchools Certification process.

- Purchased all of our electrical energy from Bullfrog Power which provides 100% green energy.
- Installed motion sensor light switches in all classrooms
- Installed faucets that turn off automatically in all public washrooms
- All lighting in the building is fluorescent or compact fluorescent
- Doubled the number of recycling stations in the public areas of the building
- Moved to rechargeable batteries where possible
- Encouraged café customers to ask for mug rather than to use paper cups.
- Vermiculture set up in the staff lunch area
- Sold shade grown, fair trade organic coffee exclusively in our café

Having experienced our first year with the EcoSchools program we are looking forward to completing some already planned initiatives as well as exploring some new and exciting challenges.

- The implementation of a composting program to deal with the organic waste generated by our visitors
- The installation of solar powered lighting from the parking lot to the visitor's centre.
- The installation of a solar hot water system to supplement the hot water in the visitor's centre.
- The construction of the most sustainable house in Canada will begin in the fall of 2006.

Lake St. George Field Centre

Lake St. George embraced the challenge of reaching Gold Certification. We have been making the efforts for years to show others through curriculum, recreation and daily routines that being green isn't so hard, but he EcoSchools Program gave us a vehicle to evaluate where we were and what more we could accomplish in being good environmental citizens. By embracing the five-step process, we were able to easily see our present situation and create goals for ourselves under the umbrellas of Waste Minimization, Designing for Shade and Energy Conservation. We have accomplished many of our goals such as creating new programs, adopting more conservative practices surrounding energy usage and providing our "human" inhabitants with more eco-friendly dwellings.

Our first step after the initial briefing was to create the Lake St. George team. It made sense for our EcoTeam to include all staff, as we are a small group and we each have unique insights. Our site supervisor was the lead, overseeing all processes. Program staff worked on communications and shared the EcoReviews and Action Plan implementation with our maintenance and operations team. Food preparation staff reviewed increasing kitchen energy efficiencies and waste minimization.

It's easy to say that we're eco-friendly, but where's the proof? The EcoReview allowed us to focus on our strengths such as the *Waste Watchers Program*, as well as highlighting where we needed to allocate more effort. We determined that we were on track with recycling, composting and minimizing garbage, but that we could still improve by exercising our purchasing power, strategic plantings and modification of daily routines, so our action plans focused on those areas.

Our energy use changes were impressive. We replaced windows and dressed them with heavy weight curtains. Programmable thermostats increased the dormitory building's efficiency. In the kitchen, we purchased a new dishwasher, and the pontoon boat received a new four stroke motor. Visitors were reminded to close the curtains, turn off lights and leave bedroom doors open when not in use to allow better heat circulation.

We informed guests that minimizing food waste and consumer waste is a priority by way of some pointers in our planning guide. Instead of bringing individually wrapped items, many groups chose to purchase home baked and bulk packaged snacks in-house. We awarded our groups with certificates and journals outlining their waste watching achievements.

We reduced our grass cutting and have a much more aesthetically pleasing view, due to the efforts of students that created bird habitat and completed some strategic tree planting. By blocking direct sunlight and wind from our dorms, we can also look forward to energy savings.

Our actions to date will create a future with taller trees, extensive meadows and human activity blending seamlessly with nature. But what else can you expect to see happening while nature is sculpting the view? During our building retrofits, we plan to further model responsible consumerism by researching and purchasing eco-friendly products to replace aging, less efficient equipment. We are eager to explore purchasing locally grown foods, further decreasing our consumer waste and introducing biodiesel to fuel our maintenance equipment needs.

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

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

RE: ONTARIO ECOSCHOOLS PROGRAM
Adapting to Toronto and Region Conservation Authority Offices

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KEY ISSUE

Sustainability Management System adoption of Ontario EcoSchools format at Toronto and Region Conservation Authority's administrative offices

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT the EcoSchools model (5 Step Process) for managing environmental sustainability be adapted for use, under the Toronto and Region Conservation Authority (TRCA) Sustainability Management System (SMS), at TRCA's administrative offices;

THAT the adapted program be called EcoOffices, and be initiated as a pilot project at the Boyd Office, Restoration Services Centre, Head Office and Downsview Office beginning in the fall of 2006;

THAT EcoTeams be convened at each site;

THAT the Coordinator, SMS lead the pilot project, with support from TRCA education staff, to facilitate its integration with the SMS and corporate EcoSchools program;

THAT the EcoSchools Steering Committee be advised and consulted throughout the TRCA pilot project for consideration of its possible application at their school board offices;

THAT staff develop an internal certification process to recognize office efforts;

AND FURTHER THAT staff report in 2007 on results of the EcoOffice pilot project.

BACKGROUND

Since 2003, TRCA's SMS has helped the organization progress towards operational sustainability by:

- gathering ideas and knowledge on best practices from staff;
- setting operational targets;
- monitoring progress toward said targets;
- reporting on TRCA’s continued performance in this area.

In 2006, TRCA participated in the Ontario EcoSchools program, culminating in the recent certification of its five educational facilities.

The Coordinator, SMS, having been involved in both the set up of the EcoSchools program as it pertains to TRCA, and having acted as an auditor at our education facilities, has suggested SMS may work better with the incorporation of an EcoSchools approach at various offices.

RATIONALE

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.

In addition, it is felt that the dissemination of information will be enhanced by the EcoTeams. Communicating TRCA's significant advances towards sustainability has proven to be a difficult venture. Circulating a 'hard-copy' newsletter is not sustainable and evidence suggests limited penetration of the SMS message to staff through e-newsletters. An EcoTeam allows for face-to-face interaction and will result in a more traditional dispersion of crucial information, as committee members take items back to staff in their various departments.

DETAILS OF WORK TO BE DONE

By the end of 2006, TRCA will:

- complete the modification of EcoSchools materials for use in TRCA offices;
- establish (with management consultation) EcoTeams at each of the four pilot office locations (Downsview Office, Boyd Office, Restoration Services Centre and Head Office);
- initiate first steps of EcoOffice program (i.e. completion of EcoReviews at each location and setting of targeted actions to pursue).

In 2007:

- offices will work through the five step process;
- an internal auditing team will be named;
- certification of the three EcoOffices by the internal auditing team will be targeted for fall of 2007.

Report prepared by: Brian Dundas, extension 5262
For Information contact: Brian Dundas, extension 5262
Date: September 22, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Adele Freeman, Director, Watershed Management

RE: POWERSTREAM ENERGY EDUCATION PILOT PROJECT

KEY ISSUE

Approval of funding by PowerStream Inc., the local power distribution corporation serving the Town of Markham, City of Vaughan, Town of Aurora and Town of Richmond Hill, to implement the PowerStream Energy Education Pilot Project to selected schools within the 2006/2007 academic year.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT approval be granted to enter into an agreement for funding to the Toronto and Region Conservation Authority (TRCA) by 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;

AND FURTHER THAT the appropriate TRCA officials be authorized and directed to take whatever action may be required to give effect thereto, including the obtaining of any necessary approvals and the execution of any documents.

BACKGROUND

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 programs:

- Mayors' Green Building Challenge
- Greening Health Care
- Sustainable Schools
- Sustainable Housing Demonstration Project
- Building a Conservation Culture at Home - Residential Energy
- The Mayors' Megawatt Challenge

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.

RATIONALE

The Project

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. Participants, led by TRCA, include:

- the York Region and York Catholic district school boards (DSB)
- Ontario EcoSchools
- York Region Health Services
- The Clean Air Partnership
- The Kortright Centre for Conservation

Goals and Objectives

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, with the following objectives:

1. Over the 2006/2007 school year, the PowerStream Energy Education Pilot Project will cultivate exemplary energy education and conservation practices in York Region and York Catholic DSB schools.
2. The project will engage up to 1,000 Grade 5 students, through 40 classroom teachers, from 20 York Region and York Catholic DSB schools as located within PowerStream's jurisdiction.
3. The project will provide intensive support to teachers and students, at school and at home, through professional development and learning activities that build knowledge and capacity, initiate action and achieve energy savings.

Overview

- The York Region and York Catholic DSB's will select 40 grade 5 classes from 20 of their schools within PowerStream's jurisdiction.
- The curriculum will be based on Ontario EcoSchools, including its energy resource guides and the 20/20 The Way to Clean Air resource materials. These resources allow teachers and students to complete energy reviews and action plans both at school and at home.
- An energy toolkit, including an energy efficient light bulb provided by PowerStream, will be distributed to each student to enrich the at-home energy conservation action plan and to meet PowerStream's energy savings objectives.
- A professional development workshop with the 40 grade 5 teachers will be delivered and will also review the project framework and curriculum resources.
- A sponsored trip to TRCA's Kortright Centre, home to Canada's largest collection of educational renewable energy demonstrations, will enable each student to participate in the "Conservation of Energy" program. This trip will enrich the students' learning and will also serve as an incentive and reward for participating teachers and students.

Benefits

- 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.

FINANCIAL DETAILS

Funding of $128,100 has been approved by PowerStream. Provision has been made to increase funding if more schools can be accommodated within the pilot. The boards of education are currently soliciting school enrollments and final numbers will be established by mid-October.

Report prepared by: Renee Jarrett, extension 5315
For Information contact: Renee Jarrett, extension 5315
Date: September 28, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Adele Freeman, Director, Watershed Management

RE: **RESEARCH AND INNOVATION SCIENCE CAMP PROGRAM, 2007-2009 AT LAKE ST. GEORGE FIELD CENTRE**
Toronto District School Board & Toronto and Region Conservation Authority Initiative

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KEY ISSUE

The Toronto District School Board, in partnership with Toronto and Region Conservation Authority, has received funding through the Ontario Ministry of Research and Innovation's Youth Science and Technology Outreach Program to support summer camps in 2007-2009 for academically at risk grade 7-9 students.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT Toronto and Region Conservation Authority (TRCA) work in partnership with the Toronto District School Board (TDSB) to provide summer camps over three years at the Lake St. George Field Centre to service at risk grades 7-9 students, funded by the Ontario Ministry of Research and Innovation through its Youth Science and Technology Outreach Program;

AND FURTHER THAT the appropriate TRCA officials be authorized and directed to take whatever action may be required to give effect thereto, including the obtaining of any necessary approvals and the execution of any documents.

BACKGROUND

Through a joint submission to the Ontario Ministry of Research and Innovation (OMRI) under its Youth Science and Technology Outreach Program (YSTOP), TRCA and TDSB were successful in securing a 3 year $115,000 grant to offer academically at risk grade 7-9 students a summer science and technology experience camp at TRCA's Lake St. George Field Centre.

The camp is called Research and Innovation Science Camp (RISC). The camp brings researchers and innovators to the students at Lake St. George to provide hands-on scientific and technological experiences, supported by lectures, on a variety of current issues in the Greater Toronto Area (GTA). The program will help students develop skills and networks based on personally significant research and innovation topics that will lead to participation in science and technology celebrations during the year. The researchers and innovators will also be available via the internet, and where possible, as face-to-face mentors to help students develop their capabilities as researchers and technological innovators.

The current funding provides for a total of seven camps, each five-days in length, over three consecutive summers, commencing in the summer of 2007. It will be led by TDSB staff with joint programming support by TRCA staff and will engage researchers and innovators from TRCA, universities and colleges and other professionals to provide daily discussions on a wide range of science and technology topics. A number of these topics will be environmentally based and will contribute to TRCA's overall goal of learning in The Living City.

RATIONALE

TRCA currently works with the TDSB on a variety of education programs, including Ontario EcoSchools and outdoor education centre programming and facilities operations. Collaborations such as these provide TRCA education with both program and professional development benefits. The RISC camp program is no exception as it will allow staff the opportunity to build and share its knowledge in the development and delivery of educational programming designed to meet the special needs of senior elementary students.

The program and its location at Lake St. George Field Centre also supports the goals that underpin the TRCA strategy for sustainability education. Based on *A Systems Thinking Curriculum for Learning in The Living City*, learning should be:

- *Locally Based or "Grassroots"*: designed for or by a particular population which values their specific geographical, socio-cultural, economic and physical needs;
- *Relevant to Learners*: personal meaning is powerful, for e.g. learning is much more likely to endure when students clean up a ravine they play in, rather than watch a video of a similar clean-up in a place they will never visit;
- *Experiential*: when engaged in learning programs, people retain about 10% of what they read, 20% of what they hear, 50% of what they hear and see, 70% of what they say (in presentations or answering questions etc.) and 90% of what they do themselves;
- *Life-Long*: the joy of learning doesn't end with graduation, but continues throughout a person's personal and professional life; and
- *Systems Thinking*: is one important tool that can help learners and teachers simplify the relational and interconnected issues of our times, and thereby help them to identify effective, realistic and sustainable solutions.

FINANCIAL DETAILS

Securing a three year commitment for summer programming is a major benefit in the financial business planning for the Lake St. George Field Centre. The funding grant provides TRCA with $6,750 per camp and each 5 day/4 night camp is capped at 20 participants. Total revenue for Lake St. George over the three years is $47,250.

Report prepared by: Darryl Gray, 416-791-0327
For Information contact: Darryl Gray, 416-791-0327
Date: September 11, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Adele Freeman, Director, Watershed Management

RE: HUSKY/EARTH RANGERS ENVIRONMENTAL WEEKS
Celebration of 10 Years at Albion Hills Field Centre

KEY ISSUE

Highlighting the September 22, 2006 event celebrating 10 years of the Husky/Earth Rangers Environmental Weeks Program at the Albion Hills Field Centre, a model of corporate commitment to community and children's learning.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT Husky Injection Molding Systems Ltd. and the Earth Rangers receive a formal motion of thanks for their generous support and commitment to the community and the environment as exemplified by the Husky/Earth Rangers Environmental Weeks Program at the Albion Hills Field Centre.

BACKGROUND

On September 22, 2006 Toronto and Region Conservation Authority (TRCA) celebrated 10 years of funding for the Husky/Earth Rangers Environmental Weeks Program at Albion Hills Field Centre by hosting a sponsor recognition event. With a total 10 year contribution of $620,000.00, the Husky/Earth Rangers Environmental Weeks sponsorship has helped provide high quality outdoor and environmental learning opportunities for over 5,300 students from the Bolton, Caledon and Palgrave communities, as well as students from five participating school boards.

The program developed for this event will be available at the Sustainable Communities Board Meeting #3/06. It provides a wonderful overview of the significant achievements of this education partnership made possible by the commitment and generosity of Husky Injection Moldings System Ltd. and Earth Rangers.

FINANCIAL DETAILS

At the event, it was confirmed that Husky Injection Molding Ltd. and Earth Rangers is providing $98,000 to support the Husky/Earth Rangers Environmental Weeks Program for the 2006/2007 school year, its eleventh.

Even though funding is approved on a year over year basis, both Husky and Earth Rangers expressed their commitment and enthusiasm for the next ten years of the program. John Galt, the new Chief Executive Officer of Husky, stated that we can look forward to funding for many years to come.

Report prepared by: Darryl Gray, 416-791-0327
For Information contact: Darryl Gray, 416-791-0327
Renee Jarrett, extension 5315
Date: August 11, 2006
Attachments: To be made available at the meeting

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Adele Freeman, Director, Watershed Management

RE: SCHUMACHER COLLEGE 'ROOTS OF LEARNING' PROFESSIONAL DEVELOPMENT COURSE

KEY ISSUE

Report on the Roots of Learning: Weaving an Ecological Culture in Education course held at Schumacher College, England in April, 2006.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT the insights gained from the Roots of Learning: Weaving an Ecological Culture in Education course held at Schumacher College, England in April, 2006 be integrated into the on-going exchange and expansion of key concepts and methodologies in sustainability education that builds on Toronto and Region Conservation Authority's (TRCA) A Systems Thinking Curriculum for Learning in The Living City and the Ontario EcoSchools program;

AND FURTHER THAT a methodology be researched and developed to assess and evaluate the transition of TRCA education towards sustainability education in its policy, management and delivery of education services.

BACKGROUND

At Executive Committee Meeting #12/05, held on February 3, 2006, Resolution #B156/05 for out of country travel for the purpose of staff professional development was approved. A further request was given that staff report back to summarize what was learned.

RATIONALE

Sarah Kear, Manager, Education Curriculum is the staff person responsible for leading TRCA's work in sustainability education. The Roots of Learning course at Schumacher College was deemed appropriate because it would further immerse the Manager, Education Curriculum in current thought and initiatives, and thereby augment her future work with TRCA. It would also provide the opportunity to represent the important work of TRCA around change, learning, sustainability and specifically, *A Systems Thinking Curriculum for Learning in The Living City,* to the critical review of international peers in environmental education. The Manager, Education Curriculum shared her learning with colleagues and works collaboratively with them to ensure that TRCA's education programming continues to meet high levels of business excellence for years to come.

This course was strategic for the following reasons:

- It further connected TRCA with the ideas of United Nations Educational, Scientific, and Cultural Organization's (UNESCO) Teaching and Learning for a Sustainable Future.
- It showcased TRCA's *A Systems Thinking Curriculum for Learning in The Living City* internationally.
- It gave TRCA education staff valuable feedback on its philosophy and approach from experts in the field outside of Canada.
- It helped TRCA staff learn from other models of institutional change towards sustainable living.
- It gave TRCA education staff exposure to the current developments in assessing institutional change.
- It gave TRCA education staff an in-depth look at another curriculum being re-written and compared the case study of the World Wildlife Fund (WWF) United Kingdom's Alphington Sustainable School with TRCA education's process.

A follow-up narrative on the school, course, transformative education and its application to TRCA can be found in Attachment 1.

Report prepared by: Sarah Kear, extension 5234
For Information contact: Sarah Kear, extension 5234
Date: September 13, 2006
Attachments: 1

Attachment 1

Narrative Report on the Roots of Learning: Weaving an Ecological Culture in Education course held at Schumacher College, England in April 2006

By: Sarah Kear, Manager, Education Curriculum

The College

Schumacher College is well known for being an educational institution based in systems thinking, which is why it encourages 'making connections' between the disciplines in its curricula. Renowned systems thinkers such as Fritjof Capra, author of *Hidden Connections: A Science for Sustainable Living*, have taught at Schumacher. Schumacher College was founded in 1991 on the conviction that a new vision is needed for society, its values and its relationship to the earth. Over the last decade the college has become a centre of excellence with an international reputation for the inspiration, quality and breadth of its teaching. The college welcomes participants from all over the world.

Schumacher College tries to integrate the learning happening in the classroom with the daily lives of the students in all it does. In this way, the curriculum is embodied in their 'hands and hearts,' not only their heads. For example, class members are split up into teams. Every day your team takes part in doing the laundry, cleaning, or cooking. In this way, students are not just learning about sustainability through reading and lectures, but also practicing the components of a sustainable community by collaboratively helping to maintain the basic functions of the school (which also helps with economic sustainability), and to be in a more holistic relationship with one another.

The place where I was most profoundly moved by this head-heart-hand synthesis was the kitchen and pantry. The food we ate was the part of the curriculum that nourished our bodies as well as our minds. It was the perfect medium for continued ecological learning. For example, we were given a tour of the scullery and the kitchen, but when we arrived in the pantry, Wayne, the kitchen manager told us that he didn't feel the need to go to morning meditation – he could do it right where we were standing in the pantry. He saw the tetrapaks and thought of the impacts they would have in the landfill and how he would like to find an alternative; he saw the fair-trade coffee and smiled, the saw the quinoa and thought about the struggle of the Bolivian farmers who grew it; and finally he saw the local apples and cheddar and thought how great it was that he knew the farmers and their commitment to producing without the pesticides and hormones that harm both humans and the earth. The diet at Schumacher is vegetarian for two important reasons; to avoid the environmental impacts of a meat diet, and to ensure that students are able to work in the kitchen, for if there was meat, insurance and public health would not allow such a set-up to exist.

The Course

Schumacher College invites as guest teachers those working at the leading edge of their fields who can offer inspiration to the students, and whose work is contributing to the creation of sustainable ways of living. Our facilitator was Jane Reed, who is Head of the International Network for School Improvement (INSI) at the Institute of Education at London University. She is involved with a wide range of improvement and evaluation projects with schools and private partners. Stephen Sterling, our primary lecturer, is an independent consultant in environmental and sustainability education, with a national and international reputation as one of the leading voices in education for sustainability. He is author of the Schumacher Briefing on Education, and his most recent book is Sustainable Education - Re-visioning Learning and Change. Phil Clarke, our guest speaker, teaches at Alphington School in Exeter, a pilot school for WWF United Kingdom and Devon County Council on Learning for Sustainability. The school is completely rewriting its curriculum with Sustainability and Global Education as the cornerstone of what and how they teach.

The course took a connected approach in the classroom too. Our facilitator, Jane, deliberately chose methodologies that would break down the dichotomy between Teachers and Learners, (this was particularly important in a room full of educators) instead we were Learners passing on our knowledge to other Learners. We discussed this as a class and made a conscious decision to take our "teaching hat" off in order to avoid falling back into the role of "teacher as the person who holds the knowledge and therefore has nothing to learn."

Big Ideas

Over the four days we began at a broad level, *Persons and Planet,*identifying and exploring the issues. We then narrowed the focus moving from *Education and Learning,*to *Our Workplace,* and finally on to focus on what we might do when we returned to work in *What Next?*

Transformative Education

There were many intriguing ideas and presentation methodologies used during the four days of the course. One idea that seems to have particular relevance to TRCA Education, was that of transformative education. I found our discussion on levels of learning and change (learning being synonymous with change) quite enlightening because it broke the process down into different orders – one not being better than the other, just different in the degree and depth of change desired. Sometimes we can also mistake first order change for third order change – this table helps us to identify the characteristics of each.

Levels of Learning and Change

1st Order: Conformative	Being effective & efficient "working in the woods with the trees"	Doing things better
2nd Order: Reformative	Examining assumptions "working just outside the woods"	Doing better things
3rd Order: Transformative	Paradigm change "working from helicopter above the woods"	Doing different things

Please note that this is not a linear flow; once transformation happens, we cycle back to conformity until the transformative process is initiated again. It is also important to note that " conformative" learning and change does not have a negative connotation in this context.

At TRCA Education, we certainly use the language of Transformative Learning, but I wonder if this is really the level we are operating at. We may be functioning there in some aspects of our work while at a different level in others. We need an assessment process to help us figure out where we are.

Another related and important question to ask, since we are trying to make a shift towards taking a systems approach to things is "If we are aiming to be a learning system, what are some of the indicators of one?" i.e. How do we recognize if we are on the right track or not?

A Learning System Is:
An organized and coherent group of people. . .
Collaborating purposefully together to achieve high quality transformations and transactions. . .
With a deep appreciation of their own integrity. . .
And a keen sense of emergence and acute consciousness of their shared processes, levels and states of learning. . .
As they design and create new and responsible futures together.

This question is paralleled by another, "How do we get systemic rather than piecemeal change?". First, we need to nurture and grow something called abductive reasoning in our practice. This kind of reasoning sees patterns that connect. Additionally, Stephen Sterling came up with a mnemonic to help answer this question by listing the characteristics of systemic change with six adjectives starting with the letter "I".

Invitational	"make this a party people want to come to"
Inclusive	
Indicative	we need indicators of where to go, and where there are none we need to be able to collaboratively ask "Where do you think this process *should* go?"
Inspirational	
Integrative	connecting projects and programs so that they are part of a cohesive body of work
Intelligent	maintain a systemic intelligence – abductive understanding – of what is happening in the change process at policy and management levels so that it may continue to be connective and collective.

Applications to the TRCA

On the TRCA's journey to transform education so that it may be transformative in practice, policy, and management, we are at the stage where we now have to ask a simple question. " What do we do now?" I think that TRCA's *'Systems Thinking Curriculum for Learning in The Living* City' and the Ontario EcoSchools Program are helping us to organize our Education team into a Learning System, and that although they are at different stages of development and implementation, they collectively make an excellent vehicle for transformation; however we must not rest on them alone. We can use the following four questions to get us started in a formal assessment of the past and visioning for the future.

1) What is of value that we need to keep?
2) What might need modification?
3) What might need abandoning?
4) What new ideas, principles, methodologies and or policies are needed?

From what I gathered from the feedback of the instructors and the other participants, there are not too many organizations that have gone where the TRCA would like to go next, i.e. assessing the transitions we have made towards sustainability education. The work we do in this area will be adding to the research in this emerging area of educational theory and practice, and could be valuable to the United Nations Regional Centre of Excellence (RCE) process here in Toronto. This is both a challenging and exciting place to be!

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Deborah Martin-Downs, Director, Ecology

RE: SUSTAINABLE SCHOOLS PROGRAM

KEY ISSUE

Update on the status of the Sustainable Schools program and approval of contract for services to implement phases III and IV.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT Toronto and Region Conservation Authority (TRCA) staff be directed to continue to work with Enerlife Consulting to raise funds and implement phases III and IV of the Sustainable Schools program;

AND FURTHER THAT Enerlife Consulting be retained to complete project management and implementation of phases III and IV of the Sustainable Schools program at a multi-year cost not to exceed $412,500, plus applicable taxes, subject to available funding.

BACKGROUND

Sustainable Schools is a program which identifies and evaluates best practices in green design, commissioning, operations and helps school boards take action to improve the energy and environmental performance of their new and recently-built schools.

At Authority Meeting #9/04, held on October 29, 2004, Resolution #A295/04 in regards to the Sustainable Schools program was approved as follows:

> *THAT Toronto and Region Conservation Authority (TRCA) staff be directed to continue to work with Enerlife Consulting to develop new programs for the Living City, namely, Home Energy Clinic, Green Community Design and Residential Housing, Sustainable Communities Development and Sustainable Schools.*

In phases I and II of the Sustainable Schools program, energy use was compared in 25 recently built schools (built since 2000) in the Greater Toronto Area (GTA) with some from across Canada. The results indicated that there is up to a four fold difference in energy use per m^2 in these facilities (Attachment 1). Given that the sample was of recently built schools with large similarities in design and technology, it is believed that much of the difference in energy use is related to building operations and occupant behaviour.

Based on the strength of the data compiled in phases I and II, funding commitments were obtained from the Ontario Power Authority and Natural Resources Canada to undertake phases III and IV.

DETAILS OF WORK TO BE DONE

To date staff have recruited four school boards to the program, the Dufferin Peel Catholic, Peel Public, Simcoe County Public and York Region Public. Up to six additional school boards will be accepted into phases of the program. It is anticipated that when completed, the program will be expanded to any school board and will address their entire portfolio of schools.

The work planned with each school board includes:

- benchmarking and evaluation of actual energy and environmental performance for up to ten recently-built schools;
- on-line system by which staff and students can develop quantitative evaluations of the working and learning environment in each school;
- operations workshops for maintenance and caretaking staff to explore options and improve performance in the subject schools;
- classroom action workshops for academic staff, information technology managers and caretakers to develop guidelines and tools for staff and students;
- design/commissioning charettes for new schools to identify and adapt specific measures for improving school performance;
- self-directed post-occupancy workshop for each new school with design team and school staff;
- use of the Sustainable Schools website, on-line tools and utilities management system; and
- Sustainable Schools newsletters, awards and media releases.

FINANCIAL DETAILS

Completion of Phase III will cost $361,200 and is anticipated to be completed by April of 2007. Phase IV will cost $133,800 and will be completed by October of 2008. Funding commitments have been received of just over $240,000 and staff are in the process of securing a commitment of $75,000 from Natural Resources Canada. Work will only be undertaken where sufficient funding commitments have been received.

Overview of revenue sources

FUNDING SOURCE	STATUS	AMOUNT ($)
Ontario Power Authority	Committed	100,000
Natural Resources Canada	Committed	6,900
	Proposed	75,000
Participating School Boards	Committed	60,000
Additional School Boards (6)	Proposed	90,000
Utility Companies	Committed	80,000
	Proposed	83,100
TOTALS	Committed	246,900
	Proposed	248,100
	TOTAL	**495,000**

Overview of projected expenditures

Program	Estimated Program Cost	Estimated Enerlife Fees and Disbursements	Estimated TRCA Management and Administration
Sustainable Schools	$495,000	$412,500	82,500
Total	**$495,000**	**$412,500**	82,500

Report prepared by: Bernie McIntyre, extension 5326
For Information contact: Bernie McIntyre, extension 5326
Date: September 28, 2006
Attachments: 1

Attachment 1

Sustainable Schools

A Program of The Living City

Raising performance of new school buildings

Our Sponsors

Canada

Energy Ontario

Power Stream

hydro one

OPA
Ontario Power Authority

Conservation Bureau

Participating School Boards

Dufferin-Peel Catholic District School Board

Peel District School Board

Simcoe County District School Board

York Region District School Board

Over the past few years, considerable attention and resources have been applied across Canada to upgrading the design of new school buildings. There are a growing number of LEED registered schools in Canada, and a large proportion of federal Commercial Building Incentive Program (CBIP) grants have been awarded to energy efficient schools.

Sustainable Schools is a program which 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.

As well, Sustainable Schools helps governments and utility companies meet their energy efficiency and environmental goals. They, in turn, provide funding to support design and operation of energy efficient schools, while the benefits are shared by all.

Sustainable Schools

The program relies on three basic principles to achieve its goals:

Benchmarking: correlation of actual school building performance and capital costs with design and operational practices.

Action: workshops and technical support to improve school design, commissioning and operations.

Funding & Resources: facilitated access to government and utility company grants and incentive programs, and to green building technical expertise.

Knowing Where You Stand

The energy and environmental performance of a school is determined by its design, operations, and the actions of staff and students. By adopting best practices in each of these areas, every school board can achieve its optimal level of energy and environmental efficiency.

Benchmarking within and between school boards helps identify existing best practices. Ongoing performance monitoring highlights successful actions taken.

Energy and Environmental Performance

Phase I-II of Sustainable Schools benchmarked twenty-five recently-built schools from across Canada, and identified a surprisingly wide range of energy performance, with the high decile using twice as much energy as the low decile. Two-thirds of the performance difference is

Conservation for The Living City

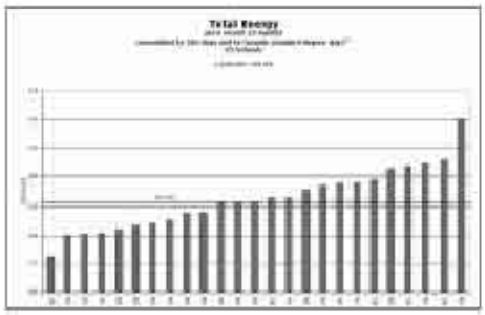
The quality of life on Earth is being determined in rapidly expanding city regions. Our vision is for a new kind of community, The Living City, where human settlement can flourish forever as part of nature's beauty and diversity.

Sustainable Schools helps school boards:

- learn about best design and operational practices from across Canada
- benchmark performance of recently-built schools
- take action to improve energy and environmental performance
- lower operating costs, energy use and greenhouse gas emissions
- comply with provincial energy target and reporting requirements
- access government and utility incentive programs
- demonstrate fiscal and environmental leadership

attributed to commissioning and operations, rather than to design differences.

Sustainable Schools works individually with each school board to benchmark its recently-built schools, and to help evaluate and adapt relevant best practices to its own, unique circumstances. Working with a number of boards across the country allows continuous improvement and expansion of the knowledge base of new schools' design and performance, which is shared with all member school boards and sponsors.



Meeting Energy Efficiency Goals

Energy efficiency is a major focus of Sustainable Schools. Enhanced school design and operations can significantly reduce operating and life-cycle costs while actually improving the learning environment– a worthy area for attention.

The Government of Ontario has committed to lowering energy demand by 5% province-wide, and by 10% within its own buildings, by 2007. Energy savings targets for publicly-funded buildings are likely to be included in upcoming energy conservation regulations.

The Government of Canada is in the process of developing its "made in Canada" solution to address climate change. The government is committed to substantial, measurable reductions in greenhouse gas emissions, and improving energy efficiency is expected to figure prominently in their strategy. The schools sector will be an important priority.

Sustainable Schools provides tools and resources to help school boards develop energy targets and action plans, and track their actual savings. The program facilitates access to related grants and incentives from governments and utility companies. Participation in the program also demonstrates a pro-active response by school boards to provincial and federal energy goals.

Helping Make Improvements

Sustainable Schools provides the following services and resources to each member school board:

- benchmarking and evaluation of actual energy and environmental performance for up to 10 of its recently-built schools
- on-line system by which staff and students can develop quantitative evaluations of the working and learning environment in each school
- operations workshops for maintenance and caretaking staff to explore options and improve performance in the subject schools
- classroom action workshops for academic staff, IT managers and caretakers to develop guidelines and tools for staff and students
- design/commissioning charettes for new schools to identify and adapt specific measures for improving school performance
- self-directed post-occupancy workshop for each new school with design team and school staff
- use of the Sustainable Schools website, on-line tools and utilities management system
- Sustainable Schools newsletters, awards and media releases

Join Sustainable Schools to save money, improve the environment, and help raise the performance of new school buildings.

The Living City programs are collaborative initiatives that bring businesses, government, communities and other stakeholders together to achieve significant, measurable change in the sustainability of city regions.

For more information on Sustainable Schools or The Living City, visit www.thelivingcity.org or contact:

Bernie McIntyre
Toronto and Region Conservation
(416) 661-6600 Ext 5326
bernie@thelivingcity.org

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Carolyn Woodland, Director, Planning and Development

RE: CITY OF TORONTO PLANNING STUDY FOR ORGANIC PROCESSING FACILITIES
Preliminary Evaluation of Sites

KEY ISSUE

Support of the preliminary stage in the City of Toronto's site selection process for organic waste processing facilities.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT the City of Toronto's goal of processing organic waste locally, whenever possible, be supported;

THAT the city's consideration of environmental, social and economic factors in its review of possible processing facilities be recognized;

THAT the city be requested to develop a sustainability plan for the final alternative using a triple bottom line approach;

AND FURTHER THAT the City of Toronto be so advised.

BACKGROUND

Toronto and Region Conservation Authority (TRCA) staff received the *Planning Study for an Expanded Public* (Source Separated Organics) *SSO Processing System Recommendations Regarding Sites and Technologies*. The study identified 10 possible locations for an organic processing facility within TRCA's jurisdiction, seven of which were within the City of Toronto and three of which are in the Regional Municipality of Durham. Because this is not waste disposal, an environmental assessment (EA) is not required. This will be a facility that treats organic materials from the greenbin process. Toronto staff are conducting the site selection process in an open and publicly accountable manner which includes an evaluation of environmental, societal and economic criteria. TRCA has had meetings and discussions with Toronto staff, as well as staff of the Rouge Park Alliance, regarding the site selection process and has provided copies of relevant background mapping. In addition, these discussions have also included a commitment to address sustainability issues in the design of the facility, including the development of a sustainability plan.

RATIONALE

At the request of city staff, TRCA reviewed each of the ten identified sites to identify preliminary concerns. As well, TRCA has also identified sustainability issues that staff recommend be addressed once the final site(s) is selected.

Site Level Evaluation

It is TRCA staff understanding that through a pre-screening process, city staff have reviewed lands in Toronto's ownership and identified that there are ten potential sites for development, in whole or in part, as an organic waste processing facility. Of the seven sites located within city boundaries, none have the capacity to accommodate all stages of organic processing and the final stages of composting and storage will need to be completed off site. The three sites in Durham Region are all large enough to accommodate all stages of organic processing, or to accommodate the composting and storage stages if a site(s) within the city's boundary is selected for the tipping and initial processing stages. As such, staff understands that the three sites in Durham Region must all be considered on the short-list as site selection proceeds to the next stage of evaluation.

In staff's preliminary evaluation, concerns with five of the proposed sites were identified. These include the North Toronto Treatment Plant, Beare Road Landfill and the three Durham sites (Brock North, Brock South and Brock West). The results of this evaluation are outlined below.

The North Toronto Treatment Plant site is located in the flood plain of the Don River valley. The development of a new industrial site in this area is contrary to the Provincial Flood Plain Policy Statement, the TRCA Valley and Stream Corridor Management Program and the TRCA Don watershed strategy - *40 Steps to a New Don*. As such, it is staff's opinion that this site is inappropriate for development and that it should not proceed for further evaluation.

The Beare Road site is located within Rouge Park. The Rouge Park Alliance has expressed concern (Resolution #39/06) with respect to the use of the Beare Road Landfill as it considers organic processing activities, or other such industrial uses, as being incompatible with Rouge Park for a number of reasons, including proximity to trails, unique natural open spaces and its investment in ecological restoration in the vicinity of the landfill area. TRCA staff support this concern.

The three Durham sites (Brock North, Brock South and Brock West) are all located beyond the city’s boundary and do not provide a local solution to solid waste management. However, each site is large enough to host all stages of organic waste processing, including the composting and storage stages which cannot be completed within any of the seven sites within the city's boundaries. TRCA staff are aware that these sites will be recommended for further consideration. TRCA staff has identified to the city that each of the three Durham sites have natural environment issues that will need to be reviewed in greater detail at the next stage of the study. These include issues associated with natural heritage and valleyland protection. In addition, there are legal agreements in place between the City of Toronto and the local municipalities in Durham Region that speak to post landfill closure uses of the sites. TRCA is named in the agreements but is not a party to them. These agreements will need to be reviewed in detail at the next stage of the site selection process.

The five remaining sites are : **Ingram Transfer Station, 3301 Markham Road, Dufferin Waste Management Facility, Disco Road Transfer Station and Morningside Landfill Site** . Each of these sites are located on tableland although some of these sites are located adjacent to a valley corridors and forest areas. However, staff are confident that as the site selection process proceeds these issues can be confirmed through site inspections, and that appropriate setbacks will be determined so that the sites can be further evaluated during the next stage of this study. As such, staff have recommended that the city focus efforts on selecting the preferred site or sites from five of the ten short listed sites: Ingram Transfer Station, 3301 Markham Road, Dufferin Waste Management Facility, Disco Road Transfer Station and Morningside Landfill Site, recognizing that the Durham Region sites will also need to be considered due to size requirements for the composting and storage stages of organic waste processing.

Sustainability Considerations

The local processing of the city's organic waste supports the Toronto and TRCA's sustainability initiatives. There are opportunities for improving the triple bottom line at the watershed level and the site level. The triple bottom line is an approach that moves away from the philosophy that to achieve sustainability, environment, society and economy must be balanced. Rather, using the triple bottom line approach, sustainability is achieved when net gains to each of the environment, society and economy factors of the sustainability model are achieved. These gains can be at both the watershed level (e.g., the diversion of waste from landfill and creation of compost) and the site level (e.g., designing the facility using LEED building design principles, and incorporate state of the art stormwater management and comprehensive tree plantings). In both examples, improvements to the triple bottom line can be achieved in each of environment, society and economy, although the improvements would not likely be equal nor would they be balanced.

Through developing a sustainability plan using a triple bottom line approach, the city will be able to show how net gains will be achieved at the watershed and site levels. As this project moves through the site selection and detailed design stages, there are a number of concerns which would need to be addressed from a sustainability perspective such as: is biogas recovery incorporated into the process? Will mechanisms for processing the organic waste have the least odour and air emissions? Will mechanisms for processing the organic waste have the greatest potential to produce energy to either self-sustain the facility or to add into the grid? Will the facility be designed, developed and operated in such a way that a net environmental gain is achieved? The next stage of the study should be developed to address these concerns through the development of a site specific sustainability plan. The more traditional environmental considerations that are specific to TRCA policy, such as improvements to the natural heritage and integration of state of the art stormwater management must also be considered in the sustainability plan.

The sustainability plan should include as many Leadership in Energy and Environmental Design (LEED) credit features as feasible, thus achieving environmental and socio-economic gains through eco-efficiency. The design should include mechanisms for water conservation, energy conservation, waste management and indoor environmental quality, such as:

A. Sustainable Community Design (e.g. developing a program to capture and use the heat lost in the surrounding industrial community);
B. Sustainable Technologies, (e.g. improvements to the plant operation to ensure the most innovative technologies for water and energy conservation are used);
C. Pollution prevention (e.g. plant maintenance and operating procedures, as is advocated through programs such as ISO 14001);
D. Sustainable design for the preferred site (e.g. recycled materials, disposal, division, reduction, rapidly renewable materials, and locally manufactured materials; as well as dust, odour, particulate matter, lighting, daylight and views, and volatile organic chemicals); and,
E. LEED or alternative eco-efficiency programs for the long term operation of the project so as to achieve an environmental and socio-economic gain.

TRCA staff have offered to make a presentation to representatives of the city in regard to the LEED building standards with regards to this project.

DETAILS OF WORK TO BE DONE

Staff will work with the city to provide technical input to the selection of the preferred site(s) and to develop the sustainability plan for the preferred site.

Report prepared by: Beth Williston, extension 5217
For Information contact: Beth Williston, extension 5217
Date: October 3, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Deborah Martin-Downs, Director, Ecology

RE: TORONTO GREEN BUILDING FESTIVAL

KEY ISSUE

The Toronto Green Building Alliance (GBA) is hosting the second annual Toronto Green Building Festival on October 31 - November 1, 2006. The conference will demonstrate how integration between stakeholders delivers outstanding green buildings and communities.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT the regions and municipalities in Toronto and Region Conservation Authority's jurisdiction be requested to support the initiatives of the Toronto Green Building Festival by encouraging staff attendance and promoting the event to associates.

BACKGROUND

Toronto and Region Conservation Authority (TRCA) is a founding member of the Toronto Green Building Alliance (GBA) in association with Sustainable Buildings Canada, Canada Green Building Council -Toronto and the Canadian Urban Institute. The Toronto Regional Green Building Festival is the primary initiative of the GBA. The aim of the festival is to inform sector leaders about new green building and sustainable community initiatives within our jurisdictions and across Canada.

The second annual Toronto Regional Green Building Festival will take place on October 31st and November 1st, 2006 at the Canadian Broadcasting Centre, 250 Front Street West, Toronto with breakout sessions across the street at the Metro Toronto Convention Centre, 255 Front Street West.

Last year's conference looked at the roadblocks to sustainable development in the region and what changes were necessary to overcome these obstacles. David Clark, Town Architect of Markham, gave an inspiring overview of Markham's sustainability initiatives.

The theme of this year's conference is Transformation via Integration. The purpose is to illustrate how integrated processes in planning, design, development and financing have delivered superior buildings and communities. Case studies from the region and beyond will show how economic, environmental and social benefits accrue from sustainable development.

Of the 2006 conference topics, those of interest to municipalities will be:

- The launch of the Green Municipal Toolkit. Developed by the Canada Green Building Council in partnership with TRCA, it is designed to help municipalities establish and implement sustainable building policies and programs to green their own buildings and those developed by the private sector.

- Current examples of sustainable planning including:
    - Toronto's waterfront;
    - City of Vaughan Block 39 project;
    - Pickering's new community planning;
    - Toronto Community Housing Corporation's Railway Lands project; and
    - Canada Land Corporation's Rockcliffe Landing development in Ottawa.
- TRCA’s The Living City Campus will be showcased in a breakout session.
- The TRCA Archetype Sustainable House Project will be presented and the 7 winning designs will be on display.

Report prepared by: Melissa Ferrato, extension 5569
For Information contact: Andrew Bowerbank, extension 5343
Date: October 5, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Nick Saccone, Director, Restoration Services

RE: BOYD ARCHAEOLOGICAL FIELD SCHOOL
High School Course Award

KEY ISSUE

The Boyd Archaeological Field School is the 2005 recipient of the Peggi Armstrong Public Archaeology Award, administered by the Ottawa Chapter of the Ontario Archaeological Society.

RECOMMENDATION

IT IS RECOMMENDED THAT the report on the Boyd Archaeological Field School be received.

BACKGROUND

In 1996, the Ottawa Chapter of the Ontario Archaeological Society (OAS) celebrated its 25th anniversary by launching a new Public Archaeology award to show its commitment to greater public awareness of archaeology. The award was named the "Peggi Armstrong Public Archaeology Award" (PAPA) in remembrance of Peggi Armstrong (1957-1997), a long-standing member of the OAS and the Ottawa Chapter. Ms. Armstrong was a driving force behind the development of a public archaeology component of the chapters' activities. The Ottawa Chapter is aware that many OAS members, institutions and organizations work diligently towards the preservation and advancement of archaeology through activities, programmes and formal educational studies. The recognition of these contributions through the official award process of the OAS is now possible with the PAPA Award.

The Boyd Archaeological Field School is receiving the 2005 PAPA Award for excellence in presentation of archaeology to the people of Ontario, based upon the following criteria:

- Scope of the audience:

  Through the Boyd Archaeological Field School, more than 1,000 high school students at the Grade 12 level have been given an introductory hands-on experience for academic credit over a period of 30 years, from 1975-2005. Students have attended from across Canada (Ontario, Nova Scotia, Alberta and British Columbia) and around the world (Britain, France, Germany, the Netherlands, Japan, Israel, Nicaragua, Poland, South Africa, Taiwan and the United States).

- Innovation in the design and delivery:

  The first school was run by the Royal Ontario Museum, which has maintained a continuing involvement, although the Toronto and Region Conservation Authority (TRCA) has become the major sponsor, in collaboration with the York Region District School Board (YRDSB) and the Rouge Park Alliance. The teaching innovations include a combination of excavations, classes and hands-on activities through which students learn excavation techniques, methods of analysis, archaeological theory, cultural history and ethics. This approach has subsequently been followed by other archaeological field schools.

- Development of enduring public archaeology resource materials:

  The teaching curriculum that has been developed for the three week course, The Archaeology and Prehistory of Southern Ontario, is available as a model for other archaeological teaching projects, present and future. It includes an introduction to archaeological theory, archaeological excavation fieldwork, analysis of artifacts, study of pre- and post-contact native cultures and historic period settlers, experience in native uses of the environment, flint-knapping and other lost arts. The most enduring impact of the programme is through its alumni, many of whom have gone on to pursue archaeology at the university level and found jobs in the discipline or in related disciplines. For instance, four students from the 1981 class alone have gone on to get PhDs. Cathy Crinnion, TRCA's Archaeologist, was a student in the 1991 class.

- Scope of events, partnerships or sponsorships brought together to promote public archaeology:

  The sites for the course, including the 16th century Seed-Barker Iroquoian village near the Humber River, and campsites and historic period sites near the Rouge River, are on lands owned by TRCA. The Boyd Office (formerly Boyd Field Centre), and Lake St. George and Claremont field centres have been home to the residential programme, also operated by TRCA. To sustain the school for the period of 30 years has required commitment from TRCA and the co-sponsors, the ROM, the YRDSB and the Rouge Park Alliance. Institutional success can only be accomplished through individuals, in this case dedicated professional field archaeologists with the ability to teach. Brian Snow, David Johnson, Mima Kapches, Bob Burgar and Cathy Crinnion have all participated in this capacity. In 2004, Bob Burgar was recognized as a finalist for the Governor General's Award for Excellence in Teaching Canadian History.

It is becoming more evident that Ontario universities are focussing archaeological training of their students in exotic locales. This is very problematic, since increasing urbanization in southern Ontario has rapidly increased the need for trained archaeologists who are able to conduct fieldwork ahead of development and interpret archaeological information specific to Ontario's past peoples. The Boyd Archaeological Field School remains one of a decreasingly small number of programmes which provides appropriate training for the archaeologists of the future. Plans for the school are to continue to offer the course on an annual basis subject to funding and to strive to attract students of First Nations ancestry.

The presentation for the PAPA Award for the Boyd Archaeological Field School is scheduled to take place on Friday, October 27 at 2 p.m. at the Boyd Office. All members of the Authority are invited to attend, and the media will be invited to attend as well.

Report prepared by: Cathy Crinnion, extension 5270
For Information contact: Cathy Crinnion, extension 5270
Date: October 3, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Adele Freeman, Director, Watershed Management

RE: TORONTO AND REGION CONSERVATION AUTHORITY SUSTAINABILITY EDUCATION
2006 Highlights and 2007 Activities

KEY ISSUE

A report highlighting the accomplishments and future activities of Toronto and Region Conservation Authority education initiatives in sustainability.

RECOMMENDATION

IT IS RECOMMENDED THAT the staff report highlighting the accomplishments and future activities of Toronto and Region Conservation Authority (TRCA) education initiatives in sustainability be received.

BACKGROUND

TRCA education is a network of centres and programs whose commitment to excellence in education has spanned 50 years. Included under this umbrella 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. Rooted within are five goals, as follows:

TRCA Education for Sustainability Goals

Based on *A Systems Thinking Curriculum for Learning in The Living City*, learning should be:

- *Locally Based or 'Grassroots'*: designed for or by a particular population which values their specific geographical, socio-cultural, economic and physical needs;
- *Relevant to Learners:* personal meaning is powerful. For example, learning is much more likely to endure when students clean up a ravine they play in, rather than watch a video of a similar clean-up in a place they will never visit;
- *Experiential:* when engaged in learning programs, people retain about 10 per cent of what they read, 20 per cent of what they hear, 50 per cent of what they hear and see, 70 per cent of what they say (in presentations or answering questions etc.) and 90 per cent of what they do themselves;
- *Life-Long:* the joy of learning doesn't end with graduation, but continues throughout a person's personal and professional life; and

- *Systems Thinking:* is one important tool that can help learners and teachers simplify the relational and interconnected issues of our times, and thereby help them to identify effective, realistic and sustainable solutions.

TRCA education staff strive to embrace these goals, which in turn create a ripple effect in our practice as educators and learners. This report has been prepared to highlight the educational leadership projects and initiatives completed and/or underway in 2006 and those being explored for 2007 that are charting the way to a more sustainable future.

RATIONALE

The following highlights the collective and program-specific efforts and accomplishments of the TRCA education teams.

2006 TRCA Education Highlights

1. Following the approval of *A Systems Thinking Curriculum for Living in The Living City,* TRCA education staff from all program and department areas participated in a professional development course. The course was designed and implemented to achieve the following learning outcomes:

   - To understand the purpose of reorienting TRCA education products to a more disciplined approach to teaching systems thinking and how it is related to sustainability.
   - To understand the use, process and application of the general systems benchmarks and The Living City benchmarks in learning activities and programs.
   - To build the skills to use and integrate systems thinking tools into activities and programs.
   - To develop new and redevelop older activities and programs into a collaborative portfolio of Systems Thinking lessons.
   - To build professional relationships and shared ideas among education colleagues from different facilities.

   The course was exceptionally well attended and received. It generated understanding and collaboration within and across the various programs and departments. Application of the knowledge and skills developed to date is being reflected in the cross-section of activities in which staff is engaged.

2. After a year of planning and preparation, TRCA education will have a new web presence on the TRCA web site. Efforts began in late 2005 to create a more streamlined and user friendly site that is better able to cater to the needs of visitors. The redesigned site has a number of new features: an e-planning form that will make booking visits simpler; a searchable database of all available education programs; and, an education resources section for teachers and students. The new site will also house more print material in digital format to cut down on the amount of paper flyers, brochures and planning documents that are mailed out each year. The new site will be live in November 2006.

3. The Gold and Silver EcoSchools Certifications of the five TRCA education facilities is another important team initiative that recognizes the significant accomplishments achieved to date in operations and teaching and sets both the framework and goals for continued improvements.

2006 Education Highlights at the Field Centres

1. 2006 was a year of continued revitalization of facilities through public use capital funding and operating funds to ensure client satisfaction and expectations were met. Work in 2006 includes renovation of teachers' residence washrooms at Lake St. George and Albion Hills field centres and replacement of old windows with high efficiency windows at Claremont Field Centre.
2. A one day Global Positioning System (GPS) course was developed for school groups and as a professional development opportunity for teachers and other practitioners. This continues to position the field centres at the leading edge of environmental and ecological literacy programs by adding current technology and practices to existing programs. Three Lake St. George staff attended a two day training session at the Canadian Ecology Centre in Mattawa to become certified Green Check GPS instructors.

2006 Education Highlights at Black Creek Pioneer Village

1. 2006 saw the launching of a new education program entitled 'Life in a New Land.' This deals with 19th century immigrants to Canada, why they came, what challenges they faced and how they cooperated to survive. Comparisons and contrasts are also made with what new immigrants face today.
2. Black Creek Pioneer Village began to incorporate the new TRCA systems thinking curriculum into its education programs. This will promote yet another enlightening learning experience for students and reinforce their knowledge about environmental responsibility and sustainable development.
3. BCPV fully embraced the Ontario EcoSchools program. A concerted effort was made in the areas of waste reduction, recycling, energy conservation and greening habitat. A good start was made with staff and schools in communicating that we can all make a difference in caring for the environment through the litterless lunch flyer and staff reinforcement.

2006 Education Highlights at Kortright Centre for Conservation

1. In 2006 the Kortright Centre for Conservation became 'Bullfrog Powered' (100% powered by green energy). This initiative was one of many that allowed the centre to achieve EcoSchools Gold Certification.
2. Ducks Unlimited, one of TRCA's partners, sponsored 110 classes to participate in a Wetland Study program at the Kortright Centre for Conservation in the spring. For many of these children the program was the first time they had ever visited a natural wetland. Many were amazed at what they saw and learned. Ducks Unlimited support also allowed TRCA to enhance the infrastructure at the Kortright marsh.
3. In 2006, the Kortright Centre for Conservation launched the first integrated high school program through a partnership with Earth Rangers. The program introduces the students to the concepts of sustainability and ecological footprint by visiting both the Earth Rangers building and the Kortright energy trail.
4. The Kortright Centre for Conservation was an integral partner in creating a sustainable centres demonstration network across Canada. via ecosites.ca, a web based network that links public and sustainable sites.

2006 Education Highlights in Outreach Education

1. Watershed On Wheels developed and delivered a very successful program at the stewardship forum called 'the well-being walk.' This program showed participants how we can learn to lower our stress levels and improve our overall health by experiencing and learning from nature .
2. Watershed On Wheels continued to deliver guided field trip programs to schools promoting sustainability and responsibility in locations such as the Oak Ridges Moraine and the City of Toronto, highlighting TRCA sites, initiatives and events as well as ecological and environmental importance and history of the areas.
3. The Aquatic Plants Program completed a record year with over 48 planting events within a six week period. The aquatic plants team engaged 3,083 students and community group members to restore and learn about 13 local wetlands across TRCA's jurisdiction.
4. The Yellow Fish Road Program introduced a new interactive non-point source pollution model showing the effects of agriculture, industry and urban impacts on watersheds. This effective visual demonstration is used to show participants of the program some of the more common causes of non-point source pollution.

2006 Education Highlights under Investigating The Living City Spac es Program

1. A successful spring program entitled 'Winged Migration' was delivered at Tommy Thompson Park under the sponsorship of the Imperial Oil Foundation. This program provides additional educational opportunities to economically less fortunate schools within the Toronto and Toronto Catholic district school boards, and involves them with the scientific and restoration work of TRCA's Restoration Services division. Plans to continue with the program in 2007 and 2008 are underway.

2006 Education Highlights at TRCA Parks

1. The development of a new education program at Bruce's Mill Conservation Area (CA), 'Knowing Nature, Staying Safer,' is underway. Focused around personal and ecological safety while participating in activities in the natural environment, this program complements the existing safety education being provided by the Community Safety Village of York Region located at Bruce's Mill CA. This program provides additional educational opportunities to schools and day camps visiting the Safety Village and Bruce's Mill CA.
2. TRCA parks once again hosted, and participated in, the Peel and York children's water festivals at Heart Lake and Bruce's Mill CAs respectively. Collectively, 6,000 students experienced education in these outdoor classrooms, building their knowledge and skills about our regional water resources.
3. The Claireville Conservation Area hosted the Council of Outdoor Educators of Ontario (COEO) annual conference this fall, in partnership with the Humber Arboretum and Guelph University at Humber College. Its theme was urban diversity allowing TRCA staff and others to showcase existing programs and opportunities for environmental education in urban communities.

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 Leadership in Energy and Environmental Design (LEED) standards and provision of technology-enabled learning through broadband networking to connect the field centre with advanced broadband-enabled schools within the Greater Toronto Area (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.

Report prepared by: Renee Jarrett, extension 5315
For Information contact: Renee Jarrett, extension 5315
Date: September 13, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Adele Freeman, Director, Watershed Management

RE: KNOWING NATURE, STAYING SAFER PROGRAM
Toronto and Region Conservation Authority Education and Conservation Parks Initiative

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KEY ISSUE

Introduction of the Knowing Nature, Staying Safer education program at Bruce's Mill Conservation Area, a new initiative to introduce relevant, creative learning programs into the Toronto and Region Conservation Authority (TRCA) parks system.

RECOMMENDATION

IT IS RECOMMENDED THAT the staff report on the Knowing Nature, Staying Safer education program at Bruce's Mill Conservation Area be received.

BACKGROUND

Knowing Nature, Staying Safer is a self-guided, interactive education activity developed for Bruce's Mill Conservation Area (CA), focused on themes of safety in the natural environment. It is a new initiative of TRCA education and conservation parks groups to introduce relevant, creative learning programs into the parks system.

Educational opportunities at Bruce's Mill CA are currently provided during a number of festivals throughout the spring and summer, and year-round at the Community Safety Village of York Region, located on-site. The Knowing Nature, Staying Safer program has been designed to complement and expand on existing education programs and provide additional learning opportunities for visiting classes and groups.

While there has a been a significant amount of focus on educating young students and adults on being street and community safe, little has been done to ensure that people participating in outdoor activities close to home or in the wilderness are equipped with the appropriate skills to enjoy their excursion while taking the precautions necessary to be safe and secure. This program provides some of the tools needed for students and adults to recognize the potential hazards of weather, wildlife, water (in particular flooding) and woodlands.

Program Description

Knowing Nature, Staying Safer is a fun and interactive program designed to educate students, children and adults on being safe while exploring and enjoying the out-of-doors. It uses interpretive signage and a guidebook with information and activities as resources. Program activities are centered around four key discovery areas: Being Water Wise, Being Weather Wise, Being Woodland Wise and Being Wildlife Wise. The information and activities developed on these four themes provide safety tips (including information on being prepared while enjoying the out-of-doors), encourage physical fitness and sensory exploration, and challenge the imagination.

The school/camp program consists of a comprehensive activity guide provided to group leaders at the time of trip booking and is designed to complement the four discovery areas in the park, complete with interpretive sign panels, program backpacks with safety equipment and teaching aids. The public program consists of an easy to use trail guide with safety tips, educational information and a detailed map and materials relating to the interpretive panels at the learning areas.

Current Status

This past summer, a selected cross-section of the Knowing Nature, Staying Safer program was piloted with summer camps at Bruce's Mill CA and was well received. The full program is nearing completion and will be offered through Bruce's Mills CA within the 2006/2007 school year.

RATIONALE

TRCA is committed to the safety of its' visitors and understands that on any excursion into the natural environment there are associated and inherent risk factors. This program takes steps towards ensuring that participants are able to recognize and respond to these risks. By adding both a school/camp program and a public program focused on safety in nature to current education opportunities at Bruce's Mill CA, TRCA will ensure that objectives around visitor safety are met and the reach of TRCA education programs in the conservation parks system will be expanded.

A key component of the Knowing Nature, Staying Safer program supports TRCA's mandate of natural protection, ensuring public safety in nature (particularly around valleys and streams by providing specific messaging) in an engaging and enjoyable fashion.

With an annual attendance of more than 35,000 visitors, many of whom are school, Scout, Guide and day camp groups, and with the on-site Safety Village, Bruce's Mill CA is ideally positioned to offer this additional education programming. Both the school and public components of this project will serve to expand the general reach of TRCA's education programs, supporting our vision of learning for a sustainable future.

This program has easily transferable components that can be adapted to suit education initiatives and opportunities at other TRCA conservation areas. Staff are exploring this potential.

FINANCIAL DETAILS

Development of the Knowing Nature, Staying Safer program is supported in part through the York Children's Water Festival and a donation from TD Friends of the Environment Foundation program. User fees collected as part of this program will be used to support ongoing operations at Bruce's Mill CA.

Staff continue to seek supporting project funding to further develop and expand educational park initiatives.

Report prepared by: Darryl Gray, 416-791-0327
For Information contact: Darryl Gray, 416-791-0327
Date: September 28, 2006

TO: Chair and Members of the Sustainable Communities Board
Meeting #3/06, October 13, 2006

FROM: Deborah Martin-Downs, Director, Ecology

RE: BUILDING CODE ENERGY STANDARDS
Recommended Changes

KEY ISSUE

Recommendations by the Chief Energy Conservation Officer on the Ontario Building Code that are aimed at lessening the electrical load of the province.

RECOMMENDATION

IT IS RECOMMENDED THAT the review of the report on The Power of Building Better: Increasing the Energy Efficiency Requirements of the Ontario Building Code to Create a Culture of Conservation, be received.

BACKGROUND

The Ministry of Municipal Affairs and Housing (MMAH) has proposed changes to the Ontario Building Code (OBC) in an effort to improve the energy efficiency of houses built in Ontario. Advancements in materials, products and construction practices allow builders to improve the quality of their products and the OBC is in place to ensure these advancements are adopted where possible throughout the province. The Chief Energy Conservation Officer for the Ontario Power Authority (OPA) has reservations that the proposed changes offered by MMAH will not properly address the energy demands of a growing Ontario population.

In the document entitled *The Power of Building Better: Increasing the Energy Efficiency Requirements of the Ontario Building Code to Create a Culture of Conservation,* the Chief Energy Conservation Officer for the OPA responds to MMAH's proposed changes to the OBC and sets out a series of recommendations that are aimed at lessening the electrical load of Ontario. These recommendations have the added effect of saving homeowners money, reducing infrastructure development costs and lessening the environmental impact from new housing. The OPA report effectively outlines concerns to the proposed changes and has been used as the summary framework for this staff report to the Sustainable Communities Board.

In addition, Summerhill Group was engaged by Toronto and Region Conservation Authority (TRCA) staff to assist in the review of the proposed changes to the OBC. Summerhill Group has a strong background in the low-rise housing sector (running EnerQuality Corporation from 1998 to 2005) and a new affiliation to TRCA established through the Archetype Sustainable House project. Summerhill Group is well placed to comment on the MMAH proposed changes to the Ontario Building Code as EnerQuality was the corporation responsible for administering all the federal housing programs in Ontario (R-2000, EnerGuide for New Houses, Building Canada and ENERGY STAR for New Homes).

RATIONALE

MMAH issued a consultation paper to explore increasing the energy efficiency of the OBC. The OBC is divided into 4 key areas:

- Area 1) Building better Homes
- Area 2) Commercial and Industrial Analysis
- Area 3) Labeling
- Area 4) Green Technology

In response to this call for submissions, OPA made 5 key recommendations (in italics below). Each area of the OBC received one key comment from OPA with the final 5th comment as a general initiative to be adopted. Following each recommendation in the report are a number of comments combining the knowledge of both Summerhill Group and TRCA.

OBC Area 1) Building better Homes

1. *All new homes (Part 9) built under the Ontario Building Code shall meet or exceed 80 on the EnerGuide for Houses scale for energy efficiency.*

    a. *All new homes shall be built with high efficiency heating and cooling systems, and programmable thermostats.*
    b. *All new windows shall have an energy rating of at least -10 Efficiency Rating (ER).*
    c. *All cooling systems shall at least meet the Energy Efficiency Rating (EER) 11.5 standard.*

MMAH is recommending that houses be built to EnerGuide ratings ranging from 71 to 76. EnerGuide numbers involve a software analysis of homes at the drawing stage and a final air tightness test at the as-built stage to achieve a rating, but a number can be generated from drawings alone for sales purposes. This is the method that the report has taken, which involves two assumptions:

- An average air tightness level is assumed.
- A hypothetical typical house is used to avoid having to model every home individually.

The result is not a rating system or the requirement to have each house perform at the same level, but a set of required standards that get to an EnerGuide 80 level on the hypothetical typical house when modeled at the assumed air tightness rating. This is common practice and underlies the thinking behind several other programs such as ENERGY STAR for New Houses. If this method was not taken, then larger homes with walk-out basements and many windows would be quite difficult to meet the EnerGuide 80 level and conversely, middle unit row houses would be able to meet it quite easily.

OBC Area 2) Commercial and Industrial Analysis

2. *All other non-residential new buildings (Part 2) not covered by Part 9 shall be built to a standard of 25% better than the Model National Energy Code for Buildings.*

    a. *Ontario should work with the Federal Government to update the Model National Energy Code for Buildings in an expeditious manner.*

This recommendation concerns Part 2 (building over 4 stories or 60,000 sq ft.) of the OBC. It is to be noted that the goal of 25% above the Model National Energy Code is substantial and significant. The additional upfront cost (versus longer term savings) is currently a difficult message to pass on to consumers, but there is a movement to develop an ENERGY STAR for Hi-Rise label that will work with the Commercial Building Incentive Program (CBIP), Leadership in Energy and Environmental Design (LEED), and Green Globes labels to make the case more compelling.

OBC Area 3) Labeling

3. *A labelling system for all buildings that is based on existing Natural Resources Canada systems should be adopted in the Energy Conservation Responsibility Act, 2006, and phased-in over time.*

This recommendation asserts that requiring home labeling in the code is not going to be as effective and have as much consumer resonance as requiring, in the Energy Conservation Act, the use of an existing program like EnerGuide for Houses. It is a difficult recommendation to assess, given that the EnerGuide program is under review by the federal government and will at least change, if not disappear. The logic is clear: utilize existing, recognized consumer brands to maximize benefits and minimize cost. The cost of creating and promoting a consumer brand is enormous, and EnerGuide is well recognized. ENERGY STAR is the only home label with more consumer recognition but it does a very different job than EnerGuide.

EnerGuide is a rating program that allows consumers to compare competing products on the basis of their energy efficiency. As a builder or homeowner you cannot fail to get an EnerGuide rating. ENERGY STAR is the opposite; it is a leadership recognition program that only labels the best-in-class homes. A builder can fail to meet this standard and not get his/her home labeled. This is the sign of quality assurance and the strength of the brand. There is strong opposition to entrenching energy levels in the code, and the Chief Energy Conservation Officer is recommending a route external to that process, so as to not lose the opportunity to measure homes altogether.

OBC Area 4) Green Technology

4. *The green technologies listed in the consultation document should be included in the Ontario Building Code.*

    a. *A process should be established to ensure that the Code facilitates the adoption of viable green technologies.*

The intent of having the code keep up with emerging green technologies would remove some of the barriers these technologies face in approval processes, resale of buildings and with insurance providers.

OPA General Initiative

5. Energy efficiency should be actively encouraged through amendments to the Code and education of the market.

This recommendation deals specifically with opportunities to improve energy efficiency in Part 11 of the Ontario Building Code, where renovation work is addressed. Here the key is the sheer volume of housing that is affected; even small energy savings can become significant at this scale. The recommendation correctly notes the difficulty of enforcing higher standards for renovations and shifts the focus from enforcement to education.

Additional Recommendations for Codifying Improvements from the Chief Energy Conservation Officer for the Ontario Power Authority.

Municipal leaders may wish to try to support on a local level the following topics:

- pool timers;
- standards regarding light intensity;
- motion sensors for garage and porch lighting, as well as emergency lighting;
- bathroom fans that are energy efficient and have timers;
- block heater timers;
- visible metering electricity consumption;
- high efficiency ventilation recovery systems
- electronically-commutated motors; and
- installation of natural gas lines, along with 220-volt outlets, for residential ranges and clothes dryers, for houses serviced by natural gas.

OPA would like to see the OBC require greater energy efficiency in Ontario for all building types above what MMAH is recommending. The 5 key recommendations would address this issue and OPA is currently working with MMAH to finalize requirements. Factors to be considered in this process include:

1) The price increase for building more energy efficient homes/buildings.
2) Education of the building community.
3) Determining a reasonable time frame for "phasing in" specific requirements.

Housing is always a local issue. Housing codes may be the purview of the province, but community standards cannot be legislated. The significant leadership of local governments including, but not limited to, East Gwillimbury, Pickering, Oakville, King and Vaughan have been applauded. Local governments can be decisive in their presence or absence in shaping housing developments. That said, it is in fact consumers who can most affect change in the building industry; so can municipalities by working with consumers to entrench the value of building better, more efficient homes.

Of the five recommendations outlined above, it is the first and second that will have the most significant and organized opposition from homebuilders associations. As housing prices and starts begin to moderate, builders will be looking for a competitive edge and will try leadership programs like ENERGY STAR, while at the same time resisting its codification. Whether it is through code change or voluntary labeling, local leaders should be pushing the energy efficiency message and demanding better built homes in their area.

Report prepared by: Andrew Bowerbank, extension 5343
For Information contact: Andrew Bowerbank, extension 5343
Date: October 5, 2006