



THE TORONTO AND REGION CONSERVATION AUTHORITY

Sustainable Communities Board Meeting #6/04

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

**December 3, 2004
11:00 A.M.
HUMBER ROOM, HEAD OFFICE**

AGENDA

- | | <u>Pages</u> |
|---|--------------|
| 1. MINUTES OF MEETING #5/04
(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 Richard Kendall, Senior Project Coordinator for Markham Centre, Tim Lambe, Manager, Policy and Research for the Eastern Markham Strategic Review and Barb Davies, Natural and Cultural Heritage Program Manager, Rouge Park, in regards to item 7.1 - Town of Markham's Sustainable Planning Initiatives For Growth Management. | |

5.2 A presentation by Chris Gates, Manager, Sustainable Energy, Enbridge Gas Distribution Inc., in regards to Energy Demand Side Management (DSM), Demand Response (DR) and the role of gas distributors in the Gas Sector.

6. CORRESPONDENCE

7. SECTION I - ITEMS FOR AUTHORITY ACTION

7.1 TOWN OF MARKHAM'S SUSTAINABLE PLANNING INITIATIVES FOR GROWTH MANAGEMENT 3-8

7.2 GREATER TORONTO AIRPORTS AUTHORITY (GTAA) DRAFT AIRPORT MASTER PLAN 9-10

7.3 HOME ENERGY CLINIC
Update on The Living City Program 11-12

7.4 STORMWATER INFILTRATION BEST MANAGEMENT PRACTICE DEMONSTRATION PROJECTS 13-15

8. NEW BUSINESS

NEXT MEETING OF THE SUSTAINABLE COMMUNITIES BOARD #7/04,
TO BE HELD ON FEBRUARY 4, 2005, IN THE
SOUTH THEATRE, BLACK CREEK PIONEER VILLAGE

Brian E. Denney
Chief Administrative Officer

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TO: Chair and Members of the Sustainable Communities Board
Meeting #6/04, December 3, 2004

FROM: Adele Freeman, Acting Director, Watershed Management Division

RE: TOWN OF MARKHAM'S SUSTAINABLE PLANNING INITIATIVES FOR GROWTH MANAGEMENT

KEY ISSUE

Status report on three (3) key planning initiatives in the Town of Markham that are setting new trends in sustainability planning and development within the Toronto region.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT WHEREAS the Town of Markham has initiated an intensive effort to build a master plan vision for the downtown core, and establish a strident sustainability planning process, inclusive of performance indicators to set new standards for development negotiations and implementation;

WHEREAS the Town of Markham has conducted the Eastern Markham Strategic Review that provides a policy framework to guide possible future land use, environment and transportation requirements in eastern Markham with a view to protecting essential countryside assets;

WHEREAS the Province of Ontario has conveyed significant land holdings within the Little Rouge Corridor to the Toronto and Region Conservation Authority (TRCA) and the Town of Markham for the purpose of implementing the Rouge Park North corridor and where a Rouge Park North Management Planning exercise has just been initiated by the Rouge Alliance;

THEREFORE LET IT BE RESOLVED THAT staff be directed to continue to work with Town of Markham staff to explore options with the development community of achieving new performance standards to satisfy sustainable development goals in Markham Centre;

THAT TRCA provide support for the principles and strategies that form the basis of the Eastern Markham Strategic Review;

AND FURTHER THAT TRCA continue to provide support and staff participation in the management of the Little Rouge Corridor Planning Study, in cooperation with other Rouge Park partners.

BACKGROUND

Over the last few years, The Town of Markham has actively pursued a vision for its community and the growth that it will need to accommodate in future, with a view to several key initiatives:

- new Markham Centre, with an intensive and vibrant mix of urban land uses;
- Eastern Markham - primarily rural lands which could change rapidly under several key planning initiatives; and,

- the Little Rouge Corridor Lands which will provide a significant public ecological asset and foundation within a growing town and changing watershed environment.

All of these initiatives, with appropriate implementation, will contribute to a sustainable development direction which the town has been actively pursuing. TRCA applauds the Town of Markham's efforts in moving the sustainability agenda into measurable terms for the purposes of managing for growth and setting new standards for quality of life and health for the community in the immediate and long term. Richard Kendall, Senior Project Coordinator for Markham Centre, Tim Lambe, Manager, Policy and Research for the Eastern Markham Strategic Review, Barb Davies, Natural and Cultural Heritage Program Manager, Rouge Park, on behalf of the Rouge Park Alliance and the Little Rouge Corridor Steering Committee, will provide an overview at Sustainable Communities Board Meeting #6/04 on these 3 key initiatives.

A brief summary for each key project within the town is provided simply as an introduction to the topics for presentation, as follows:

Markham Centre

The Town of Markham established a master plan for a new downtown centre which established its vision of accommodating growth without expanding into the countryside. A creative urban design exercise set the conceptual framework for a vibrant, intensive, mixed-use centre facing on a diverse greenspace system – a focus for the town's many communities.

Markham Centre is the defined downtown core generally bounded by Warden Avenue to the west, Highway 407 to the south, the Canadian National Railway (CNR) tracks to the east and Highway 7 to the north. The main branch of the Rouge River and a minor tributary traverse these lands. The lands are the subject of a lengthy planning process in which TRCA continues to play a key advisory and commenting role. In addition to the review of planning applications, the Master Environmental Servicing Plan and other legislated responsibilities to guide the future development of the new downtown, TRCA staff participated in the Markham Advisory Group.

The Markham Advisory Group consists of representation throughout the Town of Markham and includes various town-wide interest groups, residents, businesses, the developer groups and various boards and agencies. The group developed performance measures intended to guide and monitor development and ensure that every application delivers on Smart Growth and sustainable development. These performance measures have been adopted by council and a process has been established to ensure that the measures developed are checked against every planning application.

A series of performance checklists were prepared through consultation within five (5) theme areas for the Town of Markham including:

- Greenlands (the natural environment of the Rouge River);
- Transportation;
- Built Form;
- Green Infrastructure (sustainable engineering practices); and,
- Public Open Space.

Under each of these headings a series of performance indicators were developed out of the checklists to provide a basis for ensuring that all applications are evaluated in terms of the achievement of goals and measurable targets. Each application is rated from bronze to gold for each indicator to determine the measure of success achieved in meeting the sustainable targets developed under the main themes. The development proponent will present their plans to the advisory group who will carefully assess each application against the checklist and indicators, and recommend changes prior to applications being forwarded to the Development Services Committee of the Town of Markham.

For the Rouge Valley System defined as Greenlands, the key theme focuses on the protection and enhancement of the valleylands with every submission by checking the application against the checklist and indicators. For the Built Form theme there will be a focus on the lots and block pattern, views and vistas, building placement and the promotion of pedestrian oriented streets. With Green Infrastructure, strategies will focus on air quality, water conservation, waste reduction and efficient energy. In this category for example, the town will take advantage of the new district energy plant to help achieve its sustainable targets, and will ensure that applicants reduce impervious areas, maximize reuse and recycling, and landscape for energy conservation. The Open Space theme will focus on the design of the open space system including public parks and facilities and major gathering places. Finally, the Transportation theme focuses on rapid transit and other non-automotive modes of travel to ensure a pedestrian friendly environment. Development proposals must incorporate and promote non-automobile forms of travel through such measures as intersection spacing, traffic calming, etc..

At the end of the day it is expected that with the application of these checklists and indicators to measure the performance of each development, Markham Centre will achieve a higher standard of sustainable design and practice as it develops for the benefit of all town residents and the Toronto region.

In addition, TRCA is working with the Town of Markham to establish the Mayor's Green Building Challenge, under The Living City initiative. This challenge will bring together municipalities that are in the process of, or about to start, planning new facilities (or major renovations to existing facilities), to work together on using green building design principles for the betterment of their community. This initiative will enable municipal governments across the Greater Toronto Area to pool their green building design and construction knowledge and experience.

Eastern Markham Strategic Review

The Eastern Markham Strategic Review (EMSR) was initiated by Town of Markham Council in November, 2002. Council established the EMSR Committee to undertake a strategic review of federal, provincial and other initiatives and activities as they affect eastern Markham now or in the future. The purpose of the strategic review was to develop a policy framework to guide the town on possible future land use and environmental and transportation requirements. The work also took into account the Town of Markham's preferred land use for the provincially-owned lands in eastern Markham as agriculture. The committee's work was also supported by consultant studies with environmental, legal and agricultural expertise.

On July 8, 2003, Council endorsed the EMSR final report including the 5 guiding principles and 40 actions as a basis for future discussion with other governments and agencies whose cooperation and support are requested.

Vision

The study area covers about 24% of the Town of Markham, stretching from Steeles Avenue in the south to the Town of Whitchurch-Stouffville border in the north, as well as lands east of Box Grove, Cornell and the Little Rouge Creek, to the eastern border with the City of Pickering. The report presents a strategic approach to a wide range of issues affecting the study area. The recommendations are grounded in a vision based on the concept of “countryside”. The principles and actions are organized into categories relating to the environment, land use, heritage, transportation and related matters. Three key directions in the strategy include:

- Linking the Oak Ridges Moraine to Lake Ontario
The achievement of a north-south greenspace link through eastern Markham connecting the Rouge River watershed from Steeles Avenue to the Oak Ridges Moraine. This will include the enhancing of the Rouge Park within the Town of Markham.
- Strengthening Agriculture and Rural Communities
The strategy supports the retention and strengthening of agricultural activity, and recommends that the provincially-owned lands east of the Little Rouge Creek be retained for farming and other compatible uses. Heritage resources should be retained and restored incorporating structures and heritage landscapes within the countryside vision.
- Enhancing Transportation Routes with an Accent on Public Transit
A balance is sought in the strategy actions between the need to accommodate travel through eastern Markham while at the same time supporting the “countryside” vision. The report calls for full day service on the Markham-Stouffville Go Line and an assurance that the Havelock rail line will be restored for transit use.

A series of recommended actions are directed at the Town of Markham Council, as well as, the federal and provincial governments, the Region of York and Durham, and to TRCA and GO Transit.

The specific recommendations/action items for TRCA primarily evolve around the provincial transfer of lands to the Town of Markham and TRCA, and the establishment of the Little Rouge Corridor Management Planning Study. Other recommendations relate to groundwater and surface water resources, as well as, preserving heritage properties and structures of value. The strategy states that the town will work with the Region of York, TRCA and other partners to protect groundwater and surface water resources. This action will include:

- completing the York-Peel-Durham-Toronto Groundwater Strategy;
- participating in the development of the Rouge Watershed Strategy;
- completing the Small Streams Study;
- naming the tributaries of the Little Rouge Creek; and
- identifying future agricultural needs for water.

Since June 2003, several new initiatives have evolved:

- The transfer of lands to the Town of Markham and TRCA from Ontario Realty Corporation is now completed;
- The Rouge Park Alliance has now completed the terms of reference for conducting the Little Rouge Corridor Management Plan Study in consultation with all Rouge Park partner representatives, and the initiation of a consultant team work program is planned for January/February of 2006;
- The Greenbelt Act will be finalized in December of 2005, and the Greenbelt Draft Plan will be finalized shortly thereafter.
- The Draft Federal Greenspace Lands Management Plan is being finalized; and
- The Greater Toronto Airport Authority (GTAA) draft master plan study for the Pickering Airport lands has just been released for public and agency consultation.

TRCA staff support the principles that have provided the foundation to the EMSR final recommendations and applaud the strong environmental and countryside directions that the plan takes supporting sustainability and clear growth management goals. However, the details of the implementation of these recommendations need further consultation as all levels of government and agencies continue to assess the relationship of all new and evolving initiatives in eastern Markham and the implications to the health of the Rouge watershed.

Little Rouge Corridor Management Plan

The Rouge Park Alliance, in consultation with its northern partners (the Town's of Markham, Richmond Hill and Whitchurch-Stouffville, TRCA and the Region of York) prepared the Rouge North Management Plan (RNMP). The plan guides the establishment and management of lands along the tributaries of the Rouge River watershed through the towns of Markham, Richmond Hill and Whitchurch-Stouffville to the Oak Ridges Moraine. In 1999, the Province of Ontario announced the donation of lands within the Rouge Park boundary as identified in the Rouge Park Management Plan (1994), in addition to a 600 metre-wide corridor along the Little Rouge Creek within the provincial land holdings.

Since that time, the Rouge North Management Plan was approved by the Rouge Park Alliance in 2001. The Town of Markham adopted the Rouge North Management Area Official Amendment No. 116 in September 2003. In April of 2004, on behalf of the Province of Ontario, Ontario Realty Corporation negotiated the conveyance of the promised lands. With the provincial lands transfer now finalized, the planning has now been set to move forward in preparing the management plan for the first phase of the Little Rouge Corridor, from the headwaters to its confluence within the Rouge River.

The transfer of 767 hectares of land to TRCA south of Steeles Avenue, increased TRCA's land holdings in the Rouge south to 1,558 hectares. North of Steeles Avenue, 544 hectares were conveyed by the province within the Little Rouge subwatershed; 117 hectares to the Town of Markham and 427 hectares to TRCA – all for Rouge Park purposes. Although a management agreement exists between the City of Toronto and TRCA for existing landholdings south of Steeles Avenue, no agreement is in place for newly acquired lands north of Steeles Avenue along the Little Rouge Creek.

Therefore, the Rouge Park Alliance, through the Little Rouge Corridor Steering Committee, has prepared a terms of reference in consultation with all Rouge Park partners, and is now seeking the expertise of a consulting team to undertake the management planning assignment. It is anticipated that a consultant team should be selected and a contract signed for project implementation by early February, 2004. The terms of reference and study scoping workgroup included representation from TRCA, Town of Markham, Region of York, Transport Canada, City of Toronto, Rouge Park and the Rouge Park Alliance.

The study process will include initial phases of work that include confirmation of the vision, goals and objectives for the Little Rouge Corridor, and preparation of a series of alternative management concepts for the study lands, through research and public/stakeholder consultation. The final plan for the corridor lands will outline the conceptual approach to management of the natural and cultural features, and the ecological function of the corridor and any capital recreational development deemed appropriate within the preferred scheme. Recommendations will clarify protection, restoration and enhancement of the corridor as well as compatible use of the lands. Recommendations will include an implementation approach and management structure which is supported by the stakeholders and partners to care for the lands for the long term. The staging of all implementation components is essential and cost analysis is required to support the preferred management/maintenance plan. Private landholdings, which through the study form important sectors of the ecological corridor, will be addressed respecting landowners goals and tenure and strategies for integrating land uses in the extended planning areas along the northern sector of the Little Rouge.

FINANCIAL DETAILS

TRCA has included in the 2005 Preliminary Operating and Capital Budget estimates of \$15,000 towards the Little Rouge Corridor planning study.

Report prepared by: Carolyn Woodland, extension 5217
For Information contact: Carolyn Woodland, extension 5217
Date: November 24, 2004

TO: Chair and Members of the Sustainable Communities Board
Meeting #6/04, December 3, 2004

FROM: Adele Freeman, Acting Director, Watershed Management Division

**RE: GREATER TORONTO AIRPORTS AUTHORITY (GTAA) DRAFT AIRPORT
MASTER PLAN**

KEY ISSUE

The Greater Toronto Airports Authority released a Draft Master Plan for the Pickering Airport that sets the stage for the completion of a project description, which in turn will lead into a federal environmental assessment (EA) process. Toronto and Region Conservation Authority (TRCA) staff will, in consultation with member municipalities, review this draft master plan and participate in the environmental assessment. Since the EA study is scheduled to take two or more years, and will be very involved, it is timely to discuss with the federal government and the GTAA appropriate funding support.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT staff review the airport draft master plan and prepare comments for consideration by the Authority;

THAT the Greater Toronto Airports Authority (GTAA) be invited to attend a future meeting of the Sustainable Communities Board to present the draft Pickering airport master plan and receive comments on the draft plan;

THAT a copy of this report be forwarded to the federal Minister of Transport, the Transport Canada Green Space Project Team and the GTAA;

AND FURTHER THAT options for funding TRCA's participation in the environmental assessment be discussed with the GTAA and Transport Canada.

BACKGROUND

In April 2001, the Minister of Transport requested that the GTAA undertake interim planning work that could lead to a federal decision as to whether or not it should proceed with a regional reliever airport on the federal Pickering lands. The GTAA have tabled a draft master plan that:

- recognizes physical and operational constraints at Buttonville and Oshawa municipal airports and the need to plan for their replacement;
- addresses the need for long term airport capacity, recognizing that the Toronto Pearson International Airport cannot fulfill on its own all the aviation requirements of the GTAA;
- identifies that the Pearson airport could reach its operational capacity within the next 20 years;
- demonstrates the future need for a regional reliever airport to the east of Pearson airport that compliments Hamilton International Airport to the west;
- demonstrates that a new airport would provide strong economic development support for the eastern GTA.

The draft master plan released on November 17, 2004 will form the basis for the project description for an airport that will be the subject of an EA . Through this EA process more studies, analyses and consultation will be undertaken. Following the EA planning process and the viability of the future Pickering airport is established, the GTAA will submit a proposal to the federal government for its consideration. The time lines for the EA and draft master plan could take two or more years.

Over the past three years, TRCA staff participated in the advisory committees established by the GTAA. Staff also worked directly with the GTAA and Transport Canada, advising them on opportunities to address sustainability and watershed functions in the development of the draft master plan. Technical briefings on the Duffins Creek and Rouge River watersheds studies were provided to the GTAA and their environmental consultants. The various computer models and databases developed during TRCA led watershed studies processes were made available to the GTAA, thus ensuring that the most up-to-date knowledge base was used in their airport planning.

The GTAA has scheduled two weeks of public consultation on this draft plan. TRCA staff will prepare a detailed report on the draft airport master plan following this public consultation and staff review of the plan.

TRCA has an opportunity to comment on the draft master plan to advocate that sustainability and watershed principles such as net gain be advanced in future planning and decision making for the airport. To achieve The Living City's objectives for Sustainable Communities Healthy Rivers and Shorelines, extensive TRCA staff involvement and independent technical assessments will be required. As a result, there is an immediate need to consider the financial resources necessary for TRCA to fully participate in future Pickering airport studies.

Report prepared by: Gary Bowen, extension 5385
For Information contact: Gary Bowen, extension 5385
Date: November 22, 2004

TO: Chair and Members of the Sustainable Communities Board
Meeting #6/04, December 3, 2004

FROM: Brian Denney, Chief Administrative Officer

RE: HOME ENERGY CLINIC
Update on The Living City Program

KEY ISSUE

Fundraising to continue the Home Energy Clinic program.

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT The Conservation Foundation of Greater Toronto (CFGT) be requested to work with staff to raise an additional \$661,000 from government, individuals and the private sector to complete the development of the Home Energy Clinic, a program of The Living City, and implement the program for 12 months in 2005/2006.

BACKGROUND

At Authority Meeting #9/04, held on October 29, 2004, Resolution #A295/04 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;

THAT Enerlife Consulting be retained to complete project management and implementation of these projects at a multi-year cost not to exceed \$642,166 plus GST, subject to available funding;

AND FURTHER THAT staff report back with an update of the status of the business partnership with Enerlife in one year.

One of the projects referred to in the above noted resolution is the Home Energy Clinic. The Home Energy Clinic is a program of The Living City designed to engage homeowners in environmental best practices such as energy and water efficiency. The Home Energy Clinic concept is to provide a complete solution for homeowners who wish to make energy efficiency improvements to their homes, but do not know where to start. The Home Energy Clinic would provide home owners with what they need to find out about the energy efficiency of their house, book an energy audit, purchase and finance the products and services they need to implement improvements, learn how to perform the work and apply for incentive payments.

At the core of the program is an interactive website that provides homeowners with recommendations based on the information they provide and comparisons with information provided by other homeowners. The benchmarking of condition and feedback on performance are thought to be powerful tools to help homeowners make decisions that will positively benefit the environment. The program is described in more detail in the attached communication piece.

DETAILS OF WORK TO BE DONE

The program is being developed in partnership with the Conservation Foundation with initial funding support from Home Depot. Over the past 10 months, discussions and consultations have been held with a variety of groups and individuals to confirm the need and importance of the program. In this time the overall systems have been designed and a website mock up created along with some of the information system programming. Next steps in the development and implementation of this program include:

- secure funding for information system development and implementation of pilot programs;
- launch a 4 month Toronto area pilot;
- evaluate results and design Ontario roll-out;
- launch Ontario pilot program;
- evaluate results and design Canadian roll-out;
- launch Canadian program.

FINANCIAL DETAILS

The total cost to develop and implement the Home Energy Clinic for 12 months is approximately \$851,000. To date, Home Depot has provided \$70,000 of a \$230,000 commitment. We anticipate needing to raise funding of approximately \$661,000 to complete the work that needs to be done.

Report prepared by: Bernie McIntyre, extension 5326
For Information contact: Bernie McIntyre, extension 5326
Date: November 22, 2004

TO: Chair and Members of the Sustainable Communities Board
Meeting #6/04, December 3, 2004

FROM: Adele Freeman, Acting Director, Watershed Management Division

**RE: STORMWATER INFILTRATION BEST MANAGEMENT PRACTICE
DEMONSTRATION PROJECTS**

KEY ISSUE

Permeable pavement / bioretention swale demonstration project at Seneca College, King Campus

RECOMMENDATION

THE BOARD RECOMMENDS TO THE AUTHORITY THAT staff be directed to report back on study results after completion of the first year of monitoring.

BACKGROUND

Increases in impervious cover associated with urbanization alter the pre-development hydrological cycle by reducing groundwater recharge, decreasing evapotranspiration, and increasing surface runoff. The larger volumes of surface runoff can, in turn, increase stream channel erosion, raise the potential for flooding, and contribute to the degradation of aquatic habitat. New urban land use activities further exacerbate the problem by contributing additional contaminants to the environment. These contaminants build up on impervious surfaces and are washed off during rain events into streams and rivers, causing a general deterioration in receiving water quality.

Several initiatives currently underway in the Greater Toronto Area (GTA) are aimed at preventing or reducing the adverse effects of stormwater runoff on the environment, including the Toronto Area of Concern Remedial Action Plan, the Oak Ridges Moraine Conservation Plan, the Toronto Wet Weather Flow Management Master Plan and the Toronto and Region Conservation Authority's (TRCA) vision for The Living City. These initiatives support the development of stormwater infiltration technologies as one means of protecting receiving waters. To help provide a basis for wider adoption of these technologies, the TRCA, in partnership with Seneca College, initiated a 3-year project in early 2004 to monitor and assess the effectiveness and limitations of two infiltration technologies: permeable pavement and a bio-retention swale.

Permeable pavement refers to a group of technologies designed to restore natural infiltration functions to impervious areas, such as parking lots and driveways, by allowing water to seep through the road surface. This group includes porous asphalt, porous concrete, plastic grid systems and block pavers. The TRCA project will evaluate a specific block paver design (manufactured by Unilock) as a representative example of a type of permeable pavement that has shown promise under cold weather conditions.

Bioretention swales have also been applied to parking lots or road boulevards to improve infiltration and help remove contaminants from road runoff. Bioretention swales typically consist of small excavated depressions at the curbside that allow runoff from paved surfaces to pond and infiltrate. The vegetation, mulch and soils in the swale are specially selected to enhance infiltration and retain and filter contaminants in the upper soil layers before water passes through the system into the groundwater or underground drainage system.

The permeable pavement and bioretention swale technologies were installed in September 2004 at Seneca College's King Campus in King City. The installation incorporates monitoring considerations and allows for direct comparison of the two technologies with an adjacent paved asphalt control area. Parking lot runoff will be collected both at the road surface level and as leachate from the native soil subgrade beneath the permeable pavement and bioswale. All monitoring equipment is located underground in a large sampling vault and will be powered by a combination of wind turbine and solar power, donated to the project by Seneca College. Specific study evaluation components include water quantity and quality, sediment chemistry, potential groundwater contamination, surface-atmosphere heat exchange, operation and maintenance issues, potential barriers to implementation, and cost considerations.

Permeable pavement and bioswale technologies have not been widely adopted in the GTA because of uncertainties about performance, maintenance requirements, longevity and other factors. Study findings will help to better define technology benefits and limitations, and assist the TRCA in updating our water management policies. Results are also expected to:

- provide detailed performance data on two infiltration best management practices for use at retrofit sites where stormwater management problems have been identified;
- enhance public awareness of pollution control options through workshop/conference publications and posting of reports and fact sheets on the Sustainable Technologies website;
- provide a basis for expanding and updating provincial design guidelines for these technologies; and,
- help fulfill goals of the Toronto Remedial Action Plan, the Oak Ridges Moraine Conservation Plan, the Toronto Wet Weather Flow Management Master Plan and objectives of The Living City vision.

In a second phase of the study, performance data will be used to model the potential benefits of technology implementation at the subwatershed and watershed scales, and to translate model results into a specific set of recommendations that will help direct municipal land use planning.

DETAILS OF WORK TO BE DONE

The table below shows the planned schedule of phase I project activities.

Activity	Time
Design plan of parking lot and study area	August 2004
Construction of permeable pavement parking lot and bioswale	August/September 2004
Develop monitoring program	November/December 2004
Report of activities to date, monitoring design, monitoring protocol and activities for 2005	March 2005
Monitoring	January to November 2005/2006/2007
Year end report	March 2005/2006/2007
Final report	March 2008

FINANCIAL DETAILS

The following table lists the confirmed project partners and funding status:

Partner	Funding Status	Funding Type	Contribution	
			Construction	Monitoring
RAP MOU (Environment Canada, MOE)	Confirmed Proposed 2005	cash cash	30,000	30,000
The Pat and John McCutcheon Charitable Foundation	Confirmed	cash	20,000	
Oak Ridges Moraine Foundation	"	cash		25,000
Wal-Mart	"	cash		10,000
The Ministry of the Environment	"	laboratory services		25,000
Hanson Canada	"	sampling chamber	15,000	
Unilock	"	permeable pavers	10,000	
EMCO ltd.	"	infiltration/drainage trench	5,000	
Layfield Geotextiles	"	liner	8,000	
Seneca College	"	site, wind turbine and solar power		15,000
Total			88,000	105,000

Construction costs for this study were approximately \$50,000 which included labour, construction material purchases, machinery rental and landscaping. Over \$35,000 in donated materials was supplied by Unilock, Hanson Canada, Layfield Geotextiles and EMCO Ltd. It is expected that monitoring, data analysis and interim/final report preparation will cost \$77,000 each year, of which \$25,000 will be in-kind contributions from the Ministry of the Environment for lab services. TRCA continues to seek new partners willing to contribute cash or in-kind materials or services to the project.

Report prepared by: Tim Van Seters, extension 5337

For Information contact: Tim Van Seters, extension 5337

Date: November 19, 2004