



THE TORONTO AND REGION CONSERVATION AUTHORITY

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THE TORONTO AND REGION CONSERVATION AUTHORITY

MEETING OF THE WATERSHED MANAGEMENT ADVISORY BOARD #8/04
February 11, 2005

The Watershed Management Advisory Board Meeting #8/04, was held in the South Theatre, Black Creek Pioneer Village, on Friday, February 11, 2005. The Chair Dave Ryan, called the meeting to order at 10:35 a.m..

PRESENT

Frank Dale	Member
Pamela Gough	Member
Cliff Jenkins	Member
Dick O'Brien	Chair, Authority
Shelley Petrie	Member
Dave Ryan	Chair
Nancy Stewart	Vice Chair
Michael Thompson	Member

REGRETS

Gay Cowbourne	Member
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RES.#D106/04 - MINUTES

Moved by: Dave Ryan
Seconded by: Nancy Stewart

THAT the Minutes of Meeting #7/04, held on December 10, 2004, be approved.

CARRIED

DELEGATIONS

- (a) Margaret Catto, Conservation Councillor, Toronto Ornithological Club, speaking in regards to management of Double-crested Cormorants at Tommy Thompson Park.
- (b) John Carley, Co-Chair, Friends of the Spit, speaking in regards to management of Double-crested Cormorants at Tommy Thompson Park.

RES.#D107/04 - DELEGATIONS

Moved by: Michael Thompson
Seconded by: Frank Dale

THAT above-noted delegations (a) and (b) be heard and received.

CARRIED

PRESENTATIONS

- (a) A presentation by Steve Holysh, Conservation Authorities Moraine Coalition, in regards to the York-Peel-Durham-Toronto Groundwater Study.

RES.#D108/04 - PRESENTATIONS

Moved by: Pamela Gough
Seconded by: Cliff Jenkins

THAT above-noted presentation (a) be heard and received.

CARRIED

SECTION I - ITEMS FOR AUTHORITY ACTION

CORRESPONDENCE

- (a) A letter dated February 4, 2005 from Gregor Beck, Executive Director, Ontario Nature, in regards to management of Double-crested Cormorants at Tommy Thompson Park.
- (b) A letter dated January 31, 2005 from Margaret Catto, Conservation Councillor, Toronto Ornithological Club in regards to Proposed Cull of Wild Birds at Tommy Thompson Park.
- (c) A letter dated February 5, 2005 from AnnaMaria Valastro, Co-Director, Peaceful Parks Coalition, in regards to management of Double-crested Cormorants at Tommy Thompson Park.
- (d) A letter dated February 8, 2005 from John Carley, Co-Chair, Friends of the Spit, in regards to the Double-crested Cormorant Cull.
- (e) An email dated February 8, 2005 from Jess MacKenzie, Member, Toronto Ornithological Club in regards to management of Double-crested Cormorants at Tommy Thompson Park.
- (f) A letter dated February 10, 2005 from Councillor Paula Fletcher, City of Toronto, in regards to Possible Cormorant Cull at Tommy Thompson Park.

RES.#D109/04 - CORRESPONDENCE

Moved by: Dick O'Brien
Seconded by: Shelley Petrie

THE BOARD RECOMMENDS TO THE AUTHORITY THAT above -noted correspondence (a) - (f) be received;

THAT the individuals and groups contacting the Toronto and Region Conservation Authority in regards to management of Double-crested Cormorants at Tommy Thompson Park be advised that the Environmental Assessment has not yet been initiated and they will be formally advised when, and if, it is;

THAT given a number of the correspondents have also contacted the Ministry of Natural Resources, that staff report back to the Watershed Management Advisory Board on the response from the Ministry of Natural Resources as it may affect cormorant management issues at Tommy Thompson Park;

AND FURTHER THAT staff's assurance that a lethal cull of Double-crested Cormorants not be conducted in 2005 be acknowledged.

CARRIED



February 4, 2005

Watershed Advisory Board
c/o Chief Administrative Officer
Toronto and Region Conservation Authority
5 Shoreham Drive
Downsview, Ontario
M3N 1S4
Fax: 416-661-6270

Dear members of Watershed Advisory Board,

This letter is in regard to proposed management options and environmental assessment relating to the "management of double-crested cormorants at Tommy Thompson Park" in Toronto. Ontario Nature recognizes the double-crested cormorant as a native species of the Great Lakes ecosystem. Its presence as a high-order consumer within an aquatic ecosystem has made it an effective barometer of changes in Great Lakes community structure and also of changing levels of persistent toxic chemicals. The near-complete extirpation of the cormorant from the Great Lakes in the mid 1900s has been directly linked to bioconcentration of toxins, notably organochlorine contaminants such as PCBs and DDT (and derivatives).

With falling concentrations of these and other contaminants in the Great Lakes watershed during the late 1900s, cormorant populations have recovered (perhaps accelerated due to the presence of non-native fish species, such as alewife and rainbow smelt) and Ontario Nature believes that this recovery must be viewed as an environmental success story that reflects decreasing concentrations of some toxic chemicals in the environment. The population of double-crested cormorants has increased significantly in recent decades for numerous reasons, and we believe that it will ultimately plateau and perhaps decrease, fluctuating around a natural carrying capacity.

Ontario Nature also recognizes that the ecology of the Great Lakes is highly complex and is incompletely understood. The complexity, both in terms of community structure and water chemistry, has been increased further over the last 100 to 150 years by the introduction of numerous exotic species (both accidental and intentional), significant fluctuations in levels of nutrient and contaminants, and not infrequently through unsustainable levels of both commercial and sport fisheries.

Top order consumers, such as cormorants, have often been vilified and blamed for declines in game species such as sport fishes. Such claims are frequently unsubstantiated by scientific research, and declining sport fish populations are more likely the result of a great many factors, including the impacts of over-harvesting and non-native species (and which may also include the effect of naturally-occurring predator species, such as the double-crested cormorant).

Ontario Nature does not support the suppression of predator species to enhance hunting and fishing opportunities, which we believe is a major factor behind the desire to 'control' cormorant numbers across the Great Lakes basin and continentally. Consequently, Ontario Nature has opposed – and continues to oppose – the Ministry of Natural Resources' lethal control programs in the Georgian Bay/ North Channel Area of Lake Huron and at Presqu'ile Provincial Park (as outlined in earlier EBR submissions).

The protection of biological diversity is central to the mandate of Ontario Nature, as is the protection and recovery of species at risk. Similarly, Ontario Nature supports the protection and, where required, the restoration of natural systems. Natural systems are dynamic and change over time for a variety of reasons, including, for example, the effects of natural succession. One of the best examples of natural succession in recent decades has been at the Tommy Thompson Park (also known as the Leslie Street Spit or the "Spit") – a designated Important Bird Area.

The Spit is one of the finest, and most easily accessed locations to witness natural succession in action – from the colonization by various plant species to the evolving communities of colonial water birds. Ontario Nature believes that the Spit's population of double-crested cormorants is a natural part of this dynamic system. Further, Ontario Nature is not aware of evidence at this time that would indicate that there is a significant threat to other colonial waterbirds or species-at-risk, or that there is a threat to the broader Spit ecosystem. Consequently, Ontario Nature opposes any proposal for a lethal control program of cormorants at the Spit.

Ontario Nature strongly encourages the Toronto Region Conservation Authority and the Ontario Ministry of Natural Resources not to implement a lethal control program for cormorants at Tommy Thompson Park.

Yours sincerely,



Gregor Beck
A/ Executive Director

c.c. The Hon. David Ramsay, Minister of Natural Resources
Mr. Gord Miller, Environmental Commissioner of Ontario

CORRESPONDENCE 6.2



The Toronto Ornithological Club (Founded 1934)

294 Bessborough Drive
Toronto M4G 3L1
January 31, 2005

Tamara Chipperfield, Environmental Technician
TRCA
Fax: 416-667-6277

Dear Tamara,

RE: PROPOSED CULL OF WILD BIRDS AT TOMMY THOMPSON PARK

The Toronto Ornithological Club vigorously opposes the “lethal cull” (i.e. killing) of an unknown number of native birds, called Double-crested Cormorants, at their nests, in Toronto’s premier waterfront park. This cull is proposed for spring 2005 by the Toronto Regional Conservation Authority in partnership with the Ontario Ministry of Natural Resources. A request for an environmental assessment is to be posted shortly.

Cormorants are fascinating, intelligent, large, black waterbirds that nest in colonies. They are an important part of the wildlife biodiversity that TRCA claims to encourage in the Park, and which has earned it the internationally recognized designation, **Important Bird Area (IBA)**. Cormorants have co-existed with other colonial waterbird species since long before the last ice age, fluctuating in numbers as living conditions altered. They nest both on the ground and in trees. After a few years their droppings destroy the trees, and the birds either move on to a new location or resort to ground-nesting.

TRCA’s current rationale for resorting to lethal measures of cormorant control (the options presented are unthinkable: shooting, cannon-netting and leg-hold trapping) is that management staff are unwilling to lose any further tree cover at the Park. We agree that cormorants’ gradual destruction of trees may well impact other tree-nesting birds, including Black-crowned Night-Herons. Herons, however, are apparently viewed by wildlife managers as a more desirable species, although their droppings also kill trees.

Possibly the Black-crowned Night-Herons, which are relative newcomers to the Park from an abandoned colony at Muggs’ Island, may move again if the trees they nest in are destroyed. Certainly what will seriously discourage them and many other birds from nesting at Tommy Thompson will be the daily disruption of their breeding cycle by whatever horrific method of “lethal cull” TRCA puts into effect against the cormorants. This was demonstrated only one year ago at Presqu’ile Provincial Park after the appalling slaughter of 6030 cormorants there; as a direct result the fledging success of Black-crowned Night-Herons was reduced by one-third. The

shooting at Presqu'ile was carried out in contravention of both the stated management aims for cormorant control at the Park and the Ministry of Natural Resources' policies and guidelines for acceptable activity in a viable heronry.

It is our belief that the rationale provided for resorting to lethal culling measures in the management of Double-crested Cormorants is completely faulty. The killings will be ineffective, since non-breeding cormorants already at the Park, or birds from other colonies, will rapidly replace the culled individuals. A cull does not reduce the local area's desirability to cormorants, nor its carrying capacity; it merely removes a single season's cohort of breeding birds.

This internationally famous Park has been evolving for 50 years on the Toronto waterfront. During this time its biodiversity has increased as plants, birds and other animals adapted to conditions on "The Spit". A minimum of cormorant management activity will allow this gradual evolution to continue. The instigation of the planned lethal cull will needlessly stress other Park wildlife, may well jeopardize the Park's status as an IBA, will outrage the Toronto citizenry, and will completely undo the goodwill that TRCA has built up over many years at this and other Toronto parks.

Toronto Ornithological Club urges you put a stop to this unnecessary and intolerable proposal to kill wildlife in a Toronto park.

Yours sincerely,

ORIGINAL SIGNED BY

Margaret Catto
Conservation Councillor
Toronto Ornithological Club
416-485-5188

TO:

Hon. Dalton McGuinty, Premier of Ontario
Hon. David Ramsay, Minister of Natural Resources
Hon. Leona Dombrowsky, Minister of the Environment
Mr. Gordon Miller, Provincial Environment Commissioner
His Worship Mayor David Miller
Councillor Paula Fletcher, Ward 30, Toronto-Danforth
Mr. Brian Denney, CAO, Toronto and Region Conservation Authority
Mr. Donald Burton, President, Toronto Ornithological Club

CORRESPONDENCE 6.3

February 8, 2005

Councillor Paula Fletcher
100 Queen Street West, Suite 44
City Hall
Toronto, Ontario M5H 2M2

Dear Councillor Fletcher,

The Ontario government, in conjunction with state governments from the United States, has initiated a plan to cull tens of thousands of double-crested cormorants from the Great Lakes basin. This initiative is primarily driven by a desire to enhance the sport fishery.

In some cases, such as the Leslie Spit here in Toronto, government agencies argue that double-crested cormorants are “destroying” trees and ground vegetation, and must be culled to “preserve biodiversity”. The same argument is being made across the southern Great Lakes where cormorants typically nest in trees. Such a massive cull of a native species is unprecedented, equal only to the bounty placed on wolves decades ago.

Three years ago, the Peaceful Parks Coalition initiated a campaign to protect the double-crested cormorant from government actions that arbitrarily targeted these birds for fisheries and vegetative depletion because these arguments are not substantiated in scientific literature.

Double-crested cormorants are not a problem. They are not an ecological problem. They are not responsible for fisheries depletion nor do they “destroy” vegetation. Double-crested cormorants are colonial birds typically found nesting in large colonies of hundreds and thousands of birds. They are top of the food chain predators, like wolves, and feed exclusively on live fish. When nesting in trees, their guano will eventually kill the host tree.

This process of prematurely killing live trees is a natural process found throughout the natural world. It is necessary in the development of “snags” (dead or dying trees). Snags are crucial habitat for a different array of wildlife, such as woodpeckers. So while cormorants may alter the vegetation, this process of natural succession is necessary in preserving biodiversity.

In fact, the Toronto and Region Conservation Authority has recently erected artificial snags down at the Spit immediately adjacent to the colony of double-crested cormorants.

Therefore, killing these birds is more a matter of “grooming” the landscape for the purpose of aesthetics or arbitrarily promoting one species over another.

We oppose any further actions to manipulate bird species at the Leslie Spit or anywhere in Ontario. We want to preserve wilderness values and these birds are currently wild – their population fluctuating and stabilizing with natural forces. Once management begins, you will need to manage into perpetuity because management ultimately changes the course of an otherwise natural process.

And culling in particular, often exacerbates the situation by creating a vacuum in habitat and food availability, encouraging expansion in recruitment through reproduction. In other words, if the birds believe there is room to grow, they will expand their population either through immigration from other areas or reproduction.

Thirty years ago, the double-crested cormorant was on the brink of extinction on the Great Lakes because of high pollution levels. Its recovery should be a celebration, and it is to many people, because it means the waters of the Great Lakes are cleaner and support greater diversity. The minority of people who support culling, often do so solely because these birds are colonial and highly visible, and not because they are an ecological problem.

Please support our campaign to protect one of the most dynamic colonial bird colonies on Lake Ontario. We are lucky to have the opportunity to host such a colony at the Leslie Spit, and learn from this natural process.

Sincerely,

AnnaMaria Valastro
Co-Director

Cc: Watershed Management Advisory Board
Mayor David Miller
Premier Dalton McGuinty
Minster of Natural Resources, David Ramsay

CORRESPONDENCE 6.4

Friends of the Spit

**P.O. Box 51518
2060 Queen Street East
Toronto ON M4E 3V7
Tel: (416) 699-3143
e-mail: fos@interlog.com**



8 February 2005

Mr. Brian Denney, CAO
The Toronto and Region Conservation Authority
5 Shoreham Drive
Downsview, Ontario
M3N 1S4

Dear Brian,

We understand that a lethal cull of Double-crested Cormorants is under consideration as one of the management techniques to be applied to the cormorant colony at the Spit.

Friends of the Spit is absolutely against a lethal cull of these colonial nesting waterbirds. It is our understanding that the need for *any* management has not been proven. Especially in light of the disastrous results and deeply flawed inconclusive data obtained from the Presqu'ile slaughter, we feel the TRCA should not proceed until a full review has been done.

To that end, we are adamant that a full EA take place, with full consultation, prior to the execution of any management techniques. We do not wish a situation such as that occurred at Presqu'ile, where the slaughter proceeded by ministerial approval. We recognize your staff's commitment to a full and open process, and wish to ensure that such includes the EA process.

In addition to the fact that the need for management has not been proven, there are three other main issues to deal with: land use issues, scientific issues, and most importantly, moral and ethical issues of killing wildlife.

Regarding land use issues, Friends of the Spit has always espoused a "let it be" philosophy. The Spit should develop as nature wills it, with minimal management. The Spit will never be complete: it is a dynamic ecosystem, the cormorant colony is a part of that ecosystem, as it has been a part of the Great Lakes' ecosystem for millennia.

In response to the excellent habitat created, and the success of colonial nesting species, the Spit was named an Important Bird Area (IBA) by BirdLife International. To kill birds, with this designation in place, makes no sense.

A lethal cull would have to be conducted with guns, or perhaps even more damaging methods such as

cannon netting, strangulation, poisoning, or leg-hold traps. These are inhumane ways to achieve an end. Equally undesirable is the prospect of guns in parks. Finally, in terms of land use, a lethal cull will demand exclusion zones on The Spit and throughout the Outer Harbour, drastically affecting public access to land and water recreation.

Scientifically, the need for management is not proven. No one can say whether this expansion of population is a long term effect or simply a cycle within the ecosystem. Others, more expert, have pointed out that the ecology is not understood fully. Therefore it is a folly to intervene.

A lethal cull embarks the TRCA on a project of dubious scientific footing, and one which will require expenditure year after year. Killing some cormorants will not solve anything, as a replacement cohort will quickly move in. Does the Conservation Authority want to be party to successive years of culls, with the attendant cost, staff diversion, and adverse publicity?

Further, lethal culls and other management techniques drive away the very species that the cull is purporting to serve and protect. There is absolutely no evidence that cormorants are impeding species at risk, according to the information that we have received. Again, all bird populations are dynamic systems, and presumably the populations of cormorants will peak naturally, and then ebb off.

To quote Gregor Beck of Ontario Nature:

“The Spit is one of the finest, and most easily accessed locations to witness natural succession in action – from the colonization by various plant species to the evolving communities of colonial water birds. Ontario Nature believes that the Spit’s population of double-crested cormorants is a natural part of this dynamic system. Further, Ontario Nature is not aware of evidence at this time that would indicate that there is a significant threat to other colonial water birds or species-at-risk, or that there is a threat to the broader Spit ecosystem. Consequently, Ontario Nature opposes any proposal for a lethal control program of cormorants at the Spit.”

Finally, the moral and ethical questions are most important. Why would a Conservation Authority become an organization not of protection, but of killing? Why would one presume to suppress one species at the expense of the other? Is, as has been widely said, the suppression of a predator species required simply to enhance fishing opportunities? Why, when an organization has as its slogan “The Living City”, would it even consider adding a lethal cull to its activities?

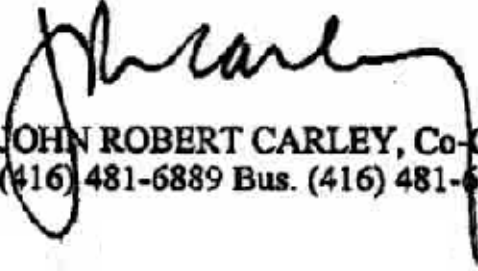
In conclusion, Friends of the Spit pleads with the TRCA to remove the lethal cull from consideration, and to ensure that an EA with full public participation takes place to evaluate all management methods for Double-crested Cormorants at the Spit.

The Conservation Authority has invested a great deal of time, effort, care, and consideration into the developments of the Leslie Street Spit/Tommy Thompson Park. Those efforts have met with success. Friends of the Spit has been pleased to see the public urban wilderness evolve according to the Master Plan under the care of the Conservation Authority. With all the good will accruing to it from its work at the Spit, why would the TRCA risk the wrath of an appalled citizenry if cormorants were killed? Why would the TRCA risk the removal of the IBA status? Why would the TRCA wish to kill cormorants and generate a major public relations disaster?

Yours sincerely,

FRIENDS OF THE SPIT

per:



JOHN ROBERT CARLEY, Co-Chair
(416) 481-6889 Bus. (416) 481-6291 Bus. Fax

JACQUELINE COURVAL, Co-Chair
(416) 699-6442 Bus.

c.c. Other interested parties

CORRESPONDENCE 6.5

Dear Ms. Stranks:

The Toronto Ornithological Club (TOC) will be attending the Watershed Management Advisory Board meeting on Friday, February 11, 05. I am a member of the TOC and have sent the letter below and the attached items to Nancy Stewart and Dave Ryan. I would appreciate it if you could ensure that these materials are made available to all the other Board members.

Thank you very much.

Yours truly,
Jess MacKenzie

Dear Ms. Stewart:

I spoke to your husband earlier today about the proposed killing of cormorants in Tommy Thompson Park and he suggested that I write to you about our concerns. I am a member of the Toronto Ornithological Club.

I telephoned to let you know we are alarmed because we have been made aware there is a proposal under discussion amongst the staff of the TRCA to carry out a lethal cull of the Double-crested Cormorant at their nests in the Park this spring. There is widespread alarm in the Toronto environmental community about this idea. Members of the Toronto Ornithological Club are asking that the slaughter option be rejected in favour of the present non-lethal control measures.

Although the cormorants' numbers plummeted in the 1960s and 1970s due to PCB and DDT contamination in the Great Lakes, over the last number of years they have recovered and now return to the Park each spring to nest. They provide an inspiring example of how a species can recover from an endangered status. Many other fish-eating birds, such as herons, are also experiencing similar surges in their numbers because there are fewer pollutants in the lake and there is an abundance of food.

Those who support the cull say the cormorants are destroying the "tree canopy" at the Spit. This is a gross exaggeration. As you know, trees were never planted by the Parks Department there. They have grown from seeds transported by the wind and by birds. No one denies that cormorants, over time, damage the trees they nest in. All the colonial birds - gulls, terns and herons - kill the vegetation around their nests, but admittedly at a slower rate than the cormorants. This, however, is a normal process at bird nesting colonies whether they be penguins, albatrosses, puffins or cormorants.

As you will note from our letter to you, we feel that at Tommy Thompson Park there should be a minimum of cormorant management and that the natural biodiversity of the Park should be allowed to evolve without interference in what is one of our most important and accessible bird-watching areas in the City.

For your information, I am attaching a copy of a letter, dated January 14th, 05, sent to Mr. Brian Denney of the Toronto and Region Conservation Authority and other parties of interest from Margaret Catto of the Toronto Ornithological Club. I'm also attaching a copy of a letter from Ontario Nature, dated February 4, 05, to the Board.

If you need further information about this matter, I would be pleased to help. My phone number is: 416-653-6420

Yours truly,

Jess MacKenzie

CORRESPONDENCE 6.6



**Paula
FLETCHER**

City Councillor
Ward 30
Toronto-Danforth



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多倫多第三十區

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February 10, 2005

Chair and Members, Watershed Management Advisory Board
Toronto and Region Conservation Authority
5 Shoreham Drive
Toronto, ON M3N 1S4

Subject: Possible Cormorant Cull at Tommy Thompson Park

Dear Chair and Members:

As the Councillor for Ward 30, I am writing to express my concern about the possibility of a cormorant cull in Tommy Thompson Park this spring. I am sure that members of the Board and the TRCA understand the need for caution in making a decision on this issue, given the park's situation within the city.

My office has received many communications from people and organizations concerned about bird and ecosystem impacts; noise levels; and the potential for human harm associated with conducting a lethal cull in such close proximity to residential neighborhoods and business areas. Experts and organizations such as Ontario Nature/Federation of Ontario Naturalists, The Toronto Ornithological Club, the Peaceful Parks Coalition, Earthroots, and the Toronto Environmental Alliance suggest that there simply is not enough evidence to conclude that cormorants pose a substantive risk to other colonial bird populations in either the park or the local ecosystem. They are concerned that once initiated, a lethal cull could replace other less controversial, but equally effective, methods of controlling the cormorant population.

While I understand that some authorities are in favour of a lethal cull, the potential risks and lack of consensus warrant a deeper look at this issue before a decision is made; therefore, I am asking that you agree to undertake a **Category C, Class Environmental Assessment** in order to provide a forum for consultation amongst public stakeholders as well as an in-depth study of the relative efficacy of a variety of alternative control options. As a courtesy, I would also ask that the TRCA inform me of any firearm permits which must be issued in order to perform a cull *prior* to the Authority's decision to do so.

Yours truly,

Councillor Paula Fletcher
Ward 30, Toronto-Danforth

cc: Mayor David Miller

RES.#D110/04 - REGION OF PEEL EDUCATION CURRICULUM RESOURCE FOR WATER

Promotion and integration of the Peel Water Story Project.

Moved by: Frank Dale
Seconded by: Nancy Stewart

THE BOARD RECOMMENDS TO THE AUTHORITY THAT staff continue to work with the Peel Water Story Project partners to facilitate the program within the Regional Municipality of Peel and promote and integrate this work and its resources into other Toronto and Region Conservation Authority (TRCA) education programs, projects and initiatives.

CARRIED

BACKGROUND

In 2002, the Region of Peel Public Works Department expressed the desire to have educational resources available to teachers in Peel Region that provided local, relevant context to water concerns and issues in the region. Representatives from TRCA , Credit Valley Conservation, Peel District School Board and the Dufferin-Peel Catholic District School Board were contacted to form the Peel Water Curriculum Resource organizing committee. The objectives established for this project were to develop an education resource that:

- demonstrated an innovative design encouraging exploration of the local watershed across all subjects and/or learning strategies (i.e. arts, science, social science, drama, music, etc.);
- allows for flexible application to all levels, kindergarten to grade 12;
- provides relevant, local information about water use in Peel Region, past and present;
- provides sufficient resource information and support to enable teachers and students to become the experts on water in their local community;
- supports and inspires the education community to initiate action projects that improve the health of local watersheds; and
- provides a forum for teachers and students to share project ideas and successes.

The development process over the last 2 years has resulted in the completion of the Peel Water Story Project, an education resource that promotes local, watershed based, learning about water and the environment.

RATIONALE

The Peel Water Story Project successfully achieves all of the project objectives. Its resources emphasize awareness and understanding of watershed management within the region and taking action within the community.

Three integrated facets make up the project:

1. The Peel Water Story - A book which assists educators in learning about water systems and water issues in an integrated and locally-relevant fashion, especially as they relate to the sustainability of water resources in Peel Region. Within the book, the watersheds of Peel Region are explored through natural and human systems using the Jonathan Swift allegory of a giant in *Lilliput* (adults/teachers see the watersheds from Gulliver's perspective while students perceive the environment as a Lilliputian). The written story is supported by relevant photographs and unique graphics produced specifically for the resource. Using case studies and an action project guide, the Peel Water Story assists teachers and students in initiating and undertaking environmental action projects.

The story is accompanied by a resource CD that links teachers and students to supporting web-based resources, including a digital fly-over of Peel Region, Teacher/Student geographic information system (GIS) tools and water-based learning activities for all grades.

2. Community Action Projects - Action projects provide many opportunities for experiential learning while making a contribution to the community. Educators involved in the delivery of the Peel Water Story curriculum resource are provided with guides and resources to mentor action projects that contribute to the sustainability of the local watershed. Examples demonstrating how educators can facilitate students' exploration of their local watershed through creative writing, scientific study, art, drama and other learning areas are provided. Existing, ongoing action projects are highlighted as case studies.
3. Peel EcoFair - Action projects that demonstrate a benefit to Peel Region's watersheds are eligible to participate at the annual Peel EcoFair, held during the Peel Children's Water Festival at the TRCA Heart Lake Conservation Area. The Peel EcoFair is the forum by which projects are recognized and celebrated for their contribution to the community. It provides project participants an opportunity to share ideas, promote their achievements and explore other ways of reaching out to their community. In 2004, youth from grade 4 to university participated in the EcoFair.

Beginning in January 2005 and for five months, the Peel Water Story Project will be field tested by a focus group of Peel Region teachers. Thereafter, teacher feedback will be incorporated into the finished Peel Water Story Project resource, which is scheduled to be distributed to all Peel Region schools in October 2005.

DETAILS OF WORK TO BE DONE

The Peel Water Story Project supports many initiatives of the TRCA, including healthy rivers and biodiversity within the communities of Peel Region. It offers an exciting and innovative approach to learning. Through participation in the development of the resource and the ongoing implementation, TRCA staff have formed new and important relationships within the education community.

To continue to build on the successes to date, TRCA staff will work with Peel Region on the following priority actions:

- Provide continued partnership support for the field testing and the finalized Peel Water Story Project curriculum resource.
- Work with the Region of Peel to promote and market The Peel Water Story resource guide to other school boards, conservation authorities and municipalities.
- Work with the region to investigate the incorporation of The Peel Water Story in the Ontario EcoSchools program.
- Establishing website links that connect the TRCA education webpage to The Peel Water Story resources available online.

FINANCIAL DETAILS

The program development and ongoing implementation is supported by the Region of Peel Public Works Department with in-kind support by the other participants.

Report prepared by: **Dave Green, extension 5234**
For Information contact: **Reneé Jarrett, extension 5315**
Date: **January 21, 2005**

RES.#D111/04 - OAK RIDGES MORaine WATERSHED PLANNING STUDIES
To provide an update on status and 2004 accomplishments of Toronto and Region Conservation Authority (TRCA) watershed planning studies within the Oak Ridges Moraine.

Moved by: Frank Dale
Seconded by: Nancy Stewart

THE BOARD RECOMMENDS TO THE AUTHORITY THAT staff continue with on -going Oak Ridges Moraine watershed planning studies in accordance with the five year work plan and individual study work plans ;

AND FURTHER THAT staff report back in one year on status and 2005 accomplishments of Oak Ridges Moraine watershed planning studies .

CARRIED

BACKGROUND

The *Oak Ridges Moraine Conservation Act, 2001* and Oak Ridges Moraine Conservation Plan (ORMCP) requires upper tier and single-tier municipalities to ensure that up-to-date watershed plans are in place for all rivers and streams originating on the Oak Ridges Moraine by April 23, 2007.

With the introduction of the ORMCP, staff from York Region, Lake Simcoe Region Conservation Authority and TRCA, together developed a generic outline of plan components and a five year work plan to fulfill the ORMCP watershed planning requirements. Detailed work plans have subsequently been developed for the individual watershed planning studies at the onset of each study process.

The four TRCA watersheds draining from the Oak Ridges Moraine are the Humber River watershed, Don River watershed, Rouge River watershed, and Duffins Creek watershed. Watershed planning studies have been completed to various degrees in all four watersheds through partnerships between the TRCA, its member municipalities and the community. Therefore, the approach to fulfilling the ORMCP watershed planning requirements has been tailored to fill information gaps and address the needs of each watershed and its community.

RATIONALE

The final delivery of each of these watershed plan updates is staggered between the end of 2005 and the end of 2006. A draft of the Rouge watershed plan is scheduled to be completed by the end of 2005 with final delivery by June 2006. For the Humber and Don Rivers, a draft plan is scheduled for delivery by the end of June 2006 with finalization towards the end of 2006, and for Duffins Creek the watershed plan has been completed and the implementation policies are scheduled for completion in the first half of 2005.

Oak Ridges Moraine watershed planning study accomplishments as of December 31, 2004, by watershed, include:

Rouge Watershed Plan

- Established a 35 member, multi-stakeholder task force to guide the development of the watershed plan.
- Published a draft state of the watershed (SOW) report, including an assessment of watershed functions and current conditions, based on a set of watershed management goals and objectives. Incorporated stakeholder and peer review comments and will maintain the SOW report as a draft document during the study, so that updates can be made as new information emerges.
- Interpretation of newly collected field data and results of other ongoing regional studies in an integrated watershed context, addressing groundwater systems and their interaction with stream baseflow, surface water use, thermal monitoring, water quality, and aquatic and terrestrial natural heritage systems.
- Defined future scenarios of watershed land use and management approaches for modeling analysis to determine watershed response and effective management strategies. Initiated modeling and analysis studies.
- Formed an implementation subcommittee of the task force to guide the development of more strategic implementation directions for the final watershed plan.

Humber Watershed Plan

- Prepared a detailed work plan in consultation with municipal staff and with the broader community via the Humber Watershed Alliance.
- Completed 2004 data collection and assessments including baseflow monitoring, water use assessment, surface water and groundwater quality and quantity, and aquatic and terrestrial natural heritage systems.

- Set up and calibrated a hydrological/water quality/water budget model.

Don Watershed Plan

- Prepared a study work plan in consultation with the Don Watershed Regeneration Council and municipal staff.
- Completed 2004 data collection and assessments including baseflow monitoring, field verification of water use and terrestrial natural heritage system.
- Initiated water budget model development.

Duffins Creek Watershed Plan

- *A Watershed Plan for the Duffins and Carruthers Creek Watershed* was completed in 2003.
- Model implementation policy project has been initiated, but was delayed pending the completion of a broader generic policy project.

DETAILS OF WORK TO BE DONE

Work to be completed in 2005 is summarized as follows:

Rouge Watershed Plan

- Completion of the modelling and analysis of future land use scenarios and management strategies (Phase 2 Report).
- Preparation of a preliminary watershed plan (draft Phase 3 Report), including summary of background conditions, preferred management strategy and implementation plan.
- Development of draft model implementation policy, including water budget and water allocation strategy.
- Consultation and partner involvement in reviewing analytical results and developing the draft plan.

Humber Watershed Plan

- Completion of reports on current conditions pertaining to groundwater quality and quantity, surface water quality and quantity, fluvial geomorphology, and aquatic and terrestrial natural heritage systems.
- Completion of modelling and analysis of future land use scenarios and management strategies (Phase 2 Report).
- Preparation of preliminary watershed plan including summary of current conditions and preliminary management strategy (draft Phase 3 Report).
- Development of implementation plan outline, including model policy.
- Consultation and partner involvement in reviewing analytical results and developing the draft management plan.

Don Watershed Plan

- Development of an updated and integrated understanding of current watershed conditions, based on new technical information, including groundwater modelling, water budget, terrestrial systems, aquatic systems and surface water modelling.
- Preliminary screening to identify regeneration priorities to direct additional field work.
- Definition and analysis of a limited number of future scenarios describing potential management approaches, including retrofits of stormwater management infrastructure to determine effectiveness.
- Consultation and partner involvement.

Duffins Creek Watershed Plan

- Completion of model policy to guide implementation of the watershed plan.

Delays in assembling required data sets and preparing models for the Rouge watershed and Humber watershed surface water flow and water quality modelling/analysis studies have delayed those projects by approximately four months. Due to the nature of the integrated watershed plan, these delays in turn cause delays in other inter-related study components (e.g. groundwater and aquatic systems) which rely on this data also. However, these delays allowed access to several improved databases that will enhance the final products and should not affect the end-date for delivery of the overall watershed plans.

FINANCIAL DETAILS

Funds for the work to be conducted in 2005 on TRCA's watershed planning studies within the Oak Ridges Moraine have been identified in the 2005 preliminary capital budget discussions with the Regional Municipality of Peel, Regional Municipality of York, Regional Municipality of Durham and City of Toronto.

Report prepared by: Dean Young, extension 5662
For Information contact: Sonya Meek, extension 5253
Date: February 02, 2005

RES.#D112/04 - YORK REGION FOREST CONSERVATION BY-LAW
York Region's proposed Forest Conservation By-Law, replacing the existing Tree By-law.

Moved by: Frank Dale
Seconded by: Nancy Stewart

THE BOARD RECOMMENDS TO THE AUTHORITY THAT WHEREAS the Tree By -laws or Forest Conservation By-laws have been identified as one of the tools to assist in the protection and management of the terrestrial natural heritage system consistent with Toronto and Region Conservation Authority's (TRCA) draft Terrestrial Natural Heritage System Strategy ;

WHEREAS York Region has demonstrated an ongoing commitment to protecting forest resources and supporting the natural environment through its land use planning and Greening Strategy initiatives, including such things as the significant woodlands study , stewardship, and public education and awareness ;

WHEREAS harmonization with local municipal Tree By -laws would regulate cutting in woodlands between 0.2ha (0.5 ac) and 1ha (2.5 ac) (similar to the existing regional by-law) and provide a consistent , streamlined approach to regulating forest management and tree cutting;

AND WHEREAS conservation authority forest management activities would be subject to the new permitting process under the Forest Conservation By-law;

THEREFORE LET IT BE RESOLVED THAT York Region be notified of TRCA 's support for the proposed Forest Conservation By-law and York Region's ongoing commitment to the protection and management of the region 's natural heritage system ;

THAT the region and local municipalities be encouraged to seek a harmonized approach to regulating forest management and tree cutting to include woodlands greater than 0.2 ha.;

AND FURTHER THAT staff be directed to meet with the region to clarify and streamline the permitting process as it relates to TRCA 's forest management activities to ensure the effective and efficient delivery of these programs .

CARRIED

BACKGROUND

York Region, is proposing to enact a new Tree By-law under the Municipal Act, 2001. The region's current Tree By-law was enacted in 1991 under the Trees Act. Tree cutting by-laws under the Municipal Act have generally been referred to as forest conservation by-laws. This reflects the natural heritage or ecosystem based intent of the administration of the by-laws. The proposed new by-law demonstrates York Region's continuing commitment to protecting forest resources and supporting the natural heritage system.

In the past 200 years in southern Ontario, the landscape has been altered from a predominantly forested landscape to one dominated by a wide variety of agricultural, industrial and urban land uses. Over 70% of the original woodlands have been lost in southern Ontario. By the early 20th century in York Region, many areas had lost over 90% of their original forest cover. It is recognized that woodlands provide a variety of important environmental and economic benefits. These benefits include erosion prevention, water retention, provision of wildlife habitat, recreation and the sustainable harvest of woodland products.

While the provisions for Tree By-laws set out in the Municipal Act, 2001 can help regulate the destruction or injuring of trees, this may not result in a healthier forest if used alone. Initiatives such as stewardship, public education and awareness, are critical to the overall protection of forest resources.

York Region has an important strategic role to implement sustainable planning and regulation of woodlands, through the official municipal planning process, and through the enactment and implementation of a forest conservation by-Law

A copy of the new Forest Conservation By-law is available upon request or is available at www.region.york.on.ca. Changes from the existing Tree By-law are highlighted in Table 1. The following are the key elements or changes in the proposed by-law:

- Restriction of the region's jurisdiction to woodlands greater than one hectare (currently 0.2 hectares) in accordance with the Municipal Act.

- Expansion of regional tree protection abilities and powers through agreements with local municipalities. The region can protect woodlands less than one hectare in size through an agreement with the local municipalities. Through this arrangement, the region's by-law would apply to woodlands greater than 0.2 hectares (0.5 acres) in size (as it does today under the existing by-law).
- Exemptions – statutory exemptions, most of which applied to the existing by-law, are carried forward in the new legislation. These include: activities undertaken by a municipality or a local board, activities conducted under the Surveyors Act, or according to a Planning Act approval. Additional exemptions have been included for (a) personal use of up to five cords of wood per 12-month period, and (b) building permits involving the clearing of less than one hectare of forest. Forest management and tree cutting activities undertaken by conservation authorities are not exempt under the new by-law.
- More effective administrative instruments, including a permit system for tree cutting activities. The current by-law does not provide for permits, but allows Council to consider tree clearing activities and grant minor exceptions. The proposed permit system comprises the following 3 categories of permit:

Good Forestry Practices Permit (1A) – permit fee \$25.00. For sustainable selective harvest activities. Where the services of a Registered Professional Forester (R.P.F.) have been secured to prescribe and direct the harvesting activities. A harvest prescription is written, the woodlot is marked and the trees are cut according to the prescription. Region staff review the application and issue a permit with conditions.

Harvest Permit (1B) – permit fee \$250.00. For sustainable selective harvest activities. Where a woodlot is marked in accordance with good forestry practices and/or where the basal area and minimum circumference limits are met as set out in the by-law. Region staff review the application in accordance with the by-law and the decision tree screening process, and issue a permit with conditions.

Special Permit (2A and 2B) – permit fee \$500.00. This permit would be available to consider tree destruction activities not consistent with good forestry practices e.g. clear cutting. Region staff will review the proposal in accordance with policies adopted by Regional Council, particularly with reference to the special criteria and principles developed for agricultural applications, with a decision by staff for 'minor' tree clearing of less than 0.2 hectares of forest (2A), and a Council decision on all other proposed 'major' tree clearing applications (2B), similar to the Minor Exception review process under the existing by-law.

- A right of appeal to the Ontario Municipal Board in accordance with the Municipal Act. Under the current By-law Council decisions on Minor Exceptions are final.
- Enhanced enforcement tools and penalties; including the ability to use a 'set fine' process for ticketable offences, and "stop work" order provisions.

Tree By-law Harmonization

The region is proposing that in partnership with the local municipalities, and at their request, the region would assume local powers to regulate tree cutting in woodlands between 0.2 hectares (0.5 acres) and one hectare (2.5 acres). Once the new Forest Conservation By-law is in place, local municipalities will be advised of individual permit applications as part of the review process.

The intent is for local municipalities to evaluate their needs and define tree protection which best suits their purposes. The Town of Aurora has a new Tree By-law in place, and the Town of Markham, Town Newmarket and the Township of King are currently reviewing or advancing the development of Tree By-laws under the new Municipal Act.

Under the Oak Ridges Moraine Conservation Act, 2001 (ORMCA), local municipalities with lands on the Oak Ridges Moraine may be required to pass Tree By-laws. It is anticipated that the region's woodlot protection harmonization efforts with local municipalities will reflect the intent of the ORMCA.

Public review and consultation has been ongoing for the past year. The final draft of the Forest Conservation By-Law is proposed to be submitted for Council endorsement in February, 2005, for enactment in April, 2005, following a communications campaign.

Table 1
Existing Tree By-law Compared to a Forest Conservation By-law

Provisions	Existing Tree By-law (Trees Act)	Proposed Forest Conservation By-law (Municipal Act)
Woodland Protection	> 0.2 ha (0.5 acres)	> 1 ha (2.5 acres) by York Region > 0.2 ha (0.5 acres) < 1 ha* by York Region in agreement with local municipalities
Notification/ applications	· Minor Exceptions (Regional Council)	· Permits (staff/ Regional Council)
Appeal Process	· None	· Ontario Municipal Board
Enforcement Tools	· Charges	· Charges · Ticketable fines · Stop work orders
Penalties	· \$5,000 per occurrence · 3 months imprisonment · Replant court order	· \$10,000 or \$1,000 per tree · Subsequent conviction \$25,000 or \$2,500 · Replant court order

** In York Region 681 ha (1.7% of all woodlands) of woodlots are between 0.2 and 1 ha.*

NOTE: > means greater than, and < means less than

IMPLICATION FOR TRCA'S PROGRAMS AND OPERATIONS

As the population of the region expands, the need for forest protection and restoration is increasing. The need for an expanded and improved terrestrial natural heritage system has been highlighted in TRCA's draft Terrestrial Natural Heritage System Strategy as critical to achieving "The Living City" objective for Regional Biodiversity. The development and administration of a Forest Conservation By-law linked to the regional Official Plan and the promotion of good forestry practices demonstrates York Region's commitment to protecting forest resources and the natural environment and is consistent with TRCA's draft Terrestrial Natural Heritage System Strategy.

The refinement of the region's Tree By-law to a Forest Conservation By-law within a sound and complimentary policy and administrative framework, will provide more effective tools, raise the profile of forest management and advance forest cover protection in York Region.

Under the Municipal Act, TRCA would be subject to the permitting provisions of the new Forest Conservation By-law for our forest management and tree-cutting activities. TRCA is currently acquiring the necessary credentials to comply with the "Good Forestry Practices" Permit and many of our lands are already covered by a Managed Forest Tax Incentive Plan (MFTIP). However, there is concern that the process for permit applications could cause delays tendering and implementing our management activities in a cost effective manner. In addition, if local Tree By-laws are not harmonized with the region's Forest Conservation By-law there may be additional delays. TRCA staff have had preliminary discussions with region staff to outline the concerns. Regional staff have indicated a desire to clarify and streamline the permitting process for conservation authority tree cutting and forest management activities and further discussions are planned. Lake Simcoe Region Conservation Authority has expressed interest in joining these discussions to ensure a consistent approach in the region.

Report prepared by: Dena Lewis, extension 5225
For Information contact: Dena Lewis, extension 5225
Date: January 28, 2005

RES.#D113/04 - YORK-PEEL-DURHAM-TORONTO GROUNDWATER STUDY
Update on status of tri-regional, York Peel Durham Toronto (YPDT) and Conservation Authorities Moraine Coalition groundwater initiatives and approval of initial YPDT 2005 budget components.

Moved by: Pamela Gough
Seconded by: Cliff Jenkins

THE BOARD RECOMMENDS TO THE AUTHORITY THAT WHEREAS the York-Peel-Durham-Toronto Groundwater Management Strategy Study continues to provide an example of a successful partnership initiative between the federal government , the province, municipalities and conservation authorities ;

WHEREAS through the initiative , the partner agencies have managed to capitalize on the economies of scale to each agency's benefit by undertaking collective initiatives only once rather than taking different approaches at each agency ;

WHEREAS the Oak Ridges Moraine provides a common physiographic link to all of the partner agencies;

AND WHEREAS this partnership is supported by key staff at the Geological Survey of Canada (GSC) and Earthfx Incorporated ,

THEREFORE LET IT BE RESOLVED THAT staff be directed to implement the following components of the 2005 work plan of the YPDT Groundwater Management Strategy Study :

- establish an agreement with the GSC to provide ongoing geoscience services in 2005;
- establish a multi-year agreement with Earthfx Incorporated to continue to provide ongoing modeling, database and website management services to the partner agencies ; and
- make formal presentation (s) of the study progress to the Planning and Public Works Committees at the Regions of York , Peel, Durham and the City of Toronto , as well as the boards of the partner conservation authorities .

CARRIED

BACKGROUND

The York-Peel-Durham-Toronto Groundwater Management Strategy Study was initiated in 2000 as a partnership between the Regions of York, Peel and Durham, the City of Toronto (YPDT), and the associated six conservation authorities (Credit Valley, Toronto and Region, Lake Simcoe Region, Kawartha, Ganaraska Region and Central Lake Ontario) with a view to arriving at consistency in groundwater management both from a technical and analytical perspective, as well as from a policy and management perspective. With similar goals and objectives, staff, acting on behalf of the Conservation Authorities Moraine Coalition, (CAMC) are also directing groundwater work across the entire Oak Ridges Moraine.

The joint YPDT/CAMC groundwater team referred to in this staff report currently consists of three full time contract staff members, the hydrogeological and planning staff members from the various partner agencies, as well as a core team of consultants from Earthfx Inc. and Gerber Geosciences Inc. Project initiatives that are tied more closely to the interests of the four municipal partners are part of the YPDT study and are approved through the Toronto and Region Conservation Authority, while projects tied more closely to the overall moraine study are approved through Central Lake Ontario Conservation Authority.

The YPDT/CAMC groundwater initiative continues to contribute insightful, practical deliverables to the partner agencies. The key focus areas of the groundwater program continue to be data management, geological understanding, numerical groundwater modeling and policy development. A large part of the program's success has been the delivery of data and tools at a practical level to partner agency staff and their consultants who are charged with understanding the groundwater system for a variety of day-to-day issues.

The purpose of this report is to provide a brief update on the accomplishments of the groundwater program in 2004 and to obtain support for the planned 2005 initiatives that the YPDT Technical Steering Committee recommended at its December 2004 meeting. The YPDT Technical Steering Committee comprises hydrogeological and planning staff from the City of Toronto, Peel, Durham and York regions as well as the six associated conservation authorities.

2004 ACCOMPLISHMENTS

2004 was a busy year for the YPDT and Conservation Authorities Moraine Coalition groundwater study programs. An annotated list of some of the 2004 accomplishments is presented below:

- **Modeling** – the groundwater modeling studies progressed significantly in 2004 with the team continuing to make significant contributions to York Region, specifically for critical projects such as the York Region deep trunk sewer project, but also for their ongoing Permit to Take Water (PTTW) requirements. A significant thrust is being made to expand the model both to the east and the west to encompass all of Peel Region and Durham Region at the same level of understanding as has been achieved in York Region and the City of Toronto. This will bring all of the municipalities to a similar level of understanding. The final report on the first phase of modeling is being finalized in early 2005. The report will document the modeling approach and methodologies.
- **Database** – Several key changes were made to the database. Of particular note, an additional set of boreholes was received from the Ontario Geological Survey. This dataset, known as the Urban Geological Automated Information System (UGAIS), added some 30,000 borehole locations to the database. The Geological Survey of Canada also provided access to their database of geological outcrops across the area, which have also been added to the database. Key information (new boreholes and well location information) taken from the South Simcoe Groundwater Study has also been incorporated. Many key boreholes drilled as part of ongoing or historical projects were also added by the YPDT/CAMC team in 2004.
- **Data Release to Partner Agencies** – in the fall of 2004 the YPDT/CAMC team released the first “official” version of the database, coupled with geological interpretive layers and modeling files. This release, known as “Version 1” establishes the template for future data releases and allows all partners to communicate with each other knowing that they are all using the same set of tools to understand and manage the water resources within their jurisdictions. The distributed dataset was structured so that locations of interest could be readily mapped in the project software (e.g. all flowing wells, all active municipal wells, all Environment Canada climate stations, all drought susceptible wells, etc.). Cross-sections show the interpreted geological layers and provide the opportunity for staff to evaluate and provide feedback on the geological layers that have been constructed so that they can be updated.

- **Website** – in 2003 the YPDT/CAMC password protected website was set up for use by the partner agencies. In 2004 progress has been made in assembling a public front end to the website. An official domain name has been secured and the public part of the website will be launched officially in 2005. This will provide to the public a site where they might gain an understanding of the geology and hydrogeology of the Oak Ridges Moraine and the surrounding area.
- **Source Water Protection** – staff from the YPDT/CAMC project were invited to participate in the Ministry of the Environment's (MOE) Technical Experts Committee as part of the source water protection initiative. This provided staff with an opportunity to help direct this important initiative that will shape many aspects of municipal and conservation authority decision making in the coming years.
- **Policy Direction** – Through much of 2004 the YPDT/CAMC team was leading a study to better link watershed plans to municipal official plans. The project was undertaken through a consulting team with input provided by key conservation authority and municipal staff from the partner agencies. The report is to be finalized in early 2005 and will be made available throughout the Greater Toronto Area (GTA) so that planning and watershed staff can begin to use the recommended approaches laid out in the report.
- **MOE Water Budget Guidance Document** – In 2004 the YPDT/CAMC staff were asked by the MOE to assist with the development of a water budget guidance document to assist with the implementation of the Oak Ridges Moraine Conservation Plan. This report was produced and delivered to the MOE in 2004 and will be circulated on the EBR (Environmental Registry) in 2005.
- **Professional presentations/seminars** – YPDT/CAMC team provided professional talks to a variety of groups and conferences during 2004:
 - **January** – Invited to speak to the Ottawa section of the Canadian Geotechnical Society;
 - **January** – Presentations to the Quaternary Science Section of the Geological Survey of Canada and to the Chief Hydrogeologist of the Geological Survey of Canada (a very favourable write up on our project was presented in their spring newsletter);
 - **January to March 2004** - Invited to make presentations at the province's Well Aware sessions in the Ganaraska, Lake Simcoe and Lower Trent conservation authority areas;
 - **March 2004** – Invited to present at the Annual Canadian Groundwater Association Conference;
 - **Oct. 2004** – Two presentations at the Joint Conference of the International Association of Hydrogeologists/Canadian Geotechnical Society (the keynote groundwater speaker, Dr. de Marsily from France, commented favourably on our project in his keynote speech);
 - **Nov. 2004** – invited to speak at the A.D. Latornell Conference (Source Water Protection Presentation);
 - **Dec. 2004** – Invited to speak at a special session on source water protection by the Ontario Water Works Association.

- **Barrie Seismic Study** – in cooperation with the Ontario Geological Survey (OGS), the GSC, Lake Simcoe Conservation Authority and the City of Barrie, the YPDT/CAMC team undertook a seismic survey in the vicinity of Barrie and Angus in the Nottawasaga watershed. With the tremendous growth pressures in the City of Barrie and the need for additional water supplies, the purpose of the seismic study was to assist with tracing favourable aquifer conditions westward from the Barrie area. The study was also designed to help in further understanding the Laurentian Valley, which was studied in the Schomberg area in 2003. The data is currently being analysed, however preliminary observations indicate that coarse grained aquifer materials have definitively been found in parts of the seismic lines.
- **Port Perry Seismic Study** – in cooperation with the OGS, the GSC and the Region of Durham, in late 2004, the CAMC/YPDT team undertook a seismic survey in the vicinity of Port Perry to assist the Regional Municipality of Durham with finding additional water supplies. The seismic study was successful in delineating subsurface conditions to the west of Port Perry, however, aquifer conditions are not as favourable as found in other seismic studies. Plans are underway to drill targets along the seismic line.
- **Earl Bales Borehole** – in cooperation with, and with funding from, the City of Toronto, the YPDT/CAMC team oversaw the drilling of a strategic cored borehole in Earl Bales Park at Sheppard and Bathurst Streets. The core has been sent to the GSC for further analysis and the monitoring wells may become part of the Provincial Groundwater Monitoring Network.
- **GRPS Reports** – YPDT/CAMC staff continued to work with the OGS to produce a series of documents on the groundwater resources across the Oak Ridges Moraine.

2005 PROGRAM

YPDT/CAMC team continues to assess the progress of both the modeling study and the database project, both being undertaken by Earthfx Inc.. Over the past two years, the modeling project has received accolades from a number of key internationally known groundwater researchers. Given the successes that the partner agencies are having with these projects, staff recommend that a multi-year (5 year) agreement be established with Earthfx Incorporated to continue the modeling and database. This will provide Earthfx Incorporated, whom have a limited, although very high quality, capacity to focus attention on the YPDT/CAMC project. Groundwater modeling is a rare special consulting service in southern Ontario and with the amount of work that will be flowing from source water protection in 2005, it is key that the YPDT/CAMC project secures the services of Earthfx Inc. staff to continue to build on the achievements of the past few years.

Since inception, the YPDT/CAMC team has fostered and established a close working partnership with the GSC. Dr. Dave Sharpe and his colleagues from the GSC continue to meet with the YPDT/CAMC team to provide their expertise pertaining to the geological and hydrogeological setting in the Oak Ridges Moraine area. There continues to be internal pressure within the GSC for having their staff focus on other areas across Canada, however in 2005 they remain willing to make some of Dr. Sharpe's time available to the YPDT/CAMC team, provided there is some level of financial support. The YPDT steering committee is recommending that some level of financial support for the GSC continue in 2005.

Key aspects of the YPDT/CAMC 2005 work program include:

- public launch the website where the public will be able to obtain background material on the project;
- establishment of data sharing and ownership agreements amongst the partner agencies to more readily permit the exchange of information;
- the roll out of a series of training seminars on various aspects of the database and the software used in the YPDT/CAMC study;
- finalization of the model expansion eastward to include watersheds up to the Ganaraska River, thereby incorporating all of Durham Region into the model;
- finalization of the model expansion westward to incorporate the Credit River watershed, thereby incorporating all of Peel Region into the model;
- the “cookie cutting” of specific watersheds out of the regional model so that agency staff will have the ability to run various land use and climate change scenarios through the model to evaluate impacts on stream flow and the overall groundwater flow system; and
- preliminary work to explore the potential linking of groundwater and surface water modeling within a pilot area on the Oak Ridges Moraine.

OUTCOMES

The YPDT initiative has resulted in a groundwater management tool that is already in use by TRCA and our partner agencies. Technical staff have used, or will be using, the model output for the following:

- identification of significant recharge areas for input into the provincial Greenbelt Plan;
- confirmation of existing groundwater recharge rates for input into the development review process;
- identification of significant groundwater discharge zones for input into surface water baseflow monitoring programs and fisheries management plans;
- delineation of wellhead protection zones (i.e. Whitchurch/Stouffville) and calculations of water budgets (including locations of previously unknown aquifer systems) for input into future drinking water source protection plans; and
- targeting of hydrogeologically sensitive areas for input into TRCA's land acquisition strategy.

FINANCIAL DETAILS

The initiatives described above can be implemented within the current 2005 budget for the YPDT study. No agreements will be signed until the financial contributions from the City of Toronto and York, Peel and Durham regions are in place and the appropriate approvals have been obtained from the Executive Committee.

Report prepared by: Donald Ford, extension 5369,
Steve Holysh, 905-336-1158, extension 246
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Steve Holysh, 905-336-1158, extension 246
Date: February 07, 2005

SECTION IV - ITEMS FOR AUTHORITY INFORMATION

RES.#D114/04-

TORONTO AND REGION CONSERVATION AUTHORITY FLOOD FORECASTING AND WARNING PROGRAM

2004 Status Report and 2005 Work Plan. Annual update on status of Toronto and Region Conservation Authority (TRCA) Flood Forecasting and Warning Program.

Moved by: Pamela Gough
Seconded by: Michael Thompson

IT IS RECOMMENDED THAT the 2004 status report and the 2005 work plan for the TRCA Flood Forecasting and Warning Program , as they relate to the GTA (Greater Toronto Area) Flood Group Standards, be received.

CARRIED

BACKGROUND

At Authority Meeting #10/03, held on January 9, 2004, Resolution #A282/03 was approved as follows:

THAT the 2004 Work Plan based on GTA Flood Standards be approved;

THAT staff be directed to base Flood Warning and Forecasting budgets and future work plans on fulfilling compliance with the GTA Flood Standards;

THAT staff report annually on compliance progress to the Watershed Management Advisory Board;

AND FURTHER THAT staff report back on the liability of flood programs and the reliability of the flood standards, and on the public consultation process.

TRCA staff have continued to work throughout 2004 to achieve the objectives outlined in the 2004 work plan as approved by the Authority. The work plan was developed with the intention of moving the TRCA Flood Forecasting and Flood Warning Program towards meeting or exceeding our obligations under the adopted GTA Flood Standards. The GTA Flood Standards were adopted at Authority Meeting #5/03, held on June 27, 2003, by Resolution #A130/03. The standards identify four program delivery areas: Program Delivery/Administration, Forecasting, Communications and Flood Operations. A status report outlining the works completed in 2004 and the 2005 work plan is attached to this report.

Staff of the TRCA, including the Director, Watershed Management and the Director, Finance and Business Development met over the past year to discuss the issue of TRCA's liability in adopting the GTA Flood Standards as a means of direction for the development and implementation of TRCA's Flood Forecasting and Warning Program. Following a discussion around past and current standards related to this program, it was determined that the risk to the TRCA will be reduced by delivering this program with a defined set of standards to which we either currently meet, or are working towards meeting, than to be in a position where we have no specified set of delivery standards. Therefore, by adopting the GTA Flood Standards, TRCA would be reducing our current risk with respect to this program.

In terms of the reliability of these standards, the GTA Flood Standards were forwarded to the province through the Provincial Flood Forecasting and Warning Committee (PFFWC). The PFFWC is the body that reviews flood warning and forecasting issues and provides direction on behalf of Conservation Ontario and the Ministry of Natural Resources. This committee has reviewed the GTA standards and found them to be both comprehensive and functional. More recently, the GTA Flood Group standards have been used as a template for the development of a provincial set of program standards through the PFFWC. The provincial committee has just released its Draft Generic Standards for Flood Forecasting and Warning to Conservation Ontario for review and comment.

The delivery of the Flood Forecasting and Warning Program is carried out in accordance with achieving the goals of the Natural Hazards Policies of the Provincial Policy Statement, section 3.1 of the Planning Act. The development of the standards has been seen as an implementation or a set of technical guidelines and as such has not required a formal public process. Such a process was undertaken for the provincial Planning Act.

FINANCIAL DETAILS

Funds have been identified in the 2005 preliminary budget to undertake the activities identified in the 2005 work plan.

Report prepared by: Don Haley, extension 5226

For Information contact: Don Haley, extension 5226, or Patricia Lewis, extension 5218

Date: November 22, 2004

Attachments: 1

Attachment 1

TRCA Flood Forecasting and Warning Program		
Section 1. Program Delivery/Administration - to develop and maintain an administrative framework to facilitate and support flood forecasting , flood warning and flood operations .		
GTA Flood Standard Component	Work Completed in 2004	Work to be carried out in 2005
Develop Baseline Knowledge of Watershed	<ul style="list-style-type: none"> • field visits carried out to flood forecast locations to familiarize staff • flood control channel inspections carried out, sites prioritized for maintenance works • watershed response descriptions developed and included in Flood Warning Manual 	<ul style="list-style-type: none"> • field inventory, assessment and prioritization for all flood control facilities to be carried out • flood control channel capacity assessment to be carried out at priority sites • flood protection and remedial works study to be completed (to include field inventory, development of database and location map, flood risk assessment and cost-benefit analysis) • develop and implement program to review rainfall/runoff events to determine better understanding of watershed response
Establish Monitoring Network	<ul style="list-style-type: none"> • three new stream gauges installed • five new precipitation gauges installed • review of existing snow course network carried out and manual developed • continued operation and maintenance of 18 existing stream gauges • continued operation and maintenance of 17 existing precipitation gauges • continued monitoring at 10 snow course locations • completed annual report for City of Mississauga Monitoring Program 	<ul style="list-style-type: none"> • installation of five new precipitation monitoring stations • upgrades to 10 existing precipitation stations to allow for remote access • installation of approximately ten new stream gauge stations • continue operation and maintenance of 21 existing stream gauges • continue operation and maintenance of 22 existing precipitation gauges • continue monitoring at 10 snow course locations • need to review need for ice monitoring program and prepare documentation • annual report to be completed for Mississauga Monitoring Program
Undertake Yearly Training of Staff	<ul style="list-style-type: none"> • weather training provided by The Weather Network and through the annual workshop of the Provincial Flood Forecasting and Warning Committee • snow course monitoring training provided • G. ROSS Lord operations training provided • staff attended Emergency Management Courses offered through Toronto Office of Emergency Management 	<ul style="list-style-type: none"> • media training (Spring 05) • Emergency Response Training (Spring 05) • annual refresher training for flood duty officers • Metronet training • ice monitoring (if required)
Document Historical Flow Events		<ul style="list-style-type: none"> • consultant to be hired to prepare analysis of historical events in TRCA jurisdiction

GTA Flood Standard Component	Work Completed in 2004	Work to be carried out in 2005
Maintain Liaison with Municipalities and	<ul style="list-style-type: none"> • ongoing as needed 	<ul style="list-style-type: none"> • ongoing as needed

Local Emergency Response Groups		
Maintain Adequate Flood Plain Mapping and Hydraulic Model in Accordance with FDRP Technical Standards	<ul style="list-style-type: none"> hydrology for Don Watershed completed hydraulic updates and mapping completed for Don south of Steeles Humber hydraulics and mapping completed Mimico hydrology update initiated Etobicoke hydrology update ongoing Etobicoke hydraulic update initiated Rouge hydrology update completed Rouge hydraulics and mapping update 90% completed Petticoat Creek hydrology and hydraulic updates initiated hydrology update completed for the Highland hydraulic and mapping updates completed for Duffins 	<ul style="list-style-type: none"> finalize hydraulic and mapping updates for West Don north of Steeles and the East Don finalize Mimico hydrology initiate Mimico hydraulics finalize Rouge hydraulics and mapping finalize Petticoat Creek hydrology, hydraulic and mapping updates finalize Etobicoke hydrology, hydraulics and mapping initiate hydraulic and mapping updates for Highland initiate hydrology, hydraulic and mapping updates for Carruthers, Pine, Amberlea, Dunbarton, Krosno
Develop and Maintain the Flood Forecasting (FFOR) Model	<ul style="list-style-type: none"> input parameters calculated for Duffins, Rouge and Humber and Don 	<ul style="list-style-type: none"> input parameters to be calculated for remaining watersheds
Develop and Maintain a Flood Site Database	<ul style="list-style-type: none"> Data input completed for Duffins, Humber, Krosno, and Rouge as per updated flood plain mapping spatial link with GIS underway 	<ul style="list-style-type: none"> spatial link with GIS - ongoing customization data input ongoing as hydraulic updates completed
Conduct Yearly Update of Flood Contingency Manual	<ul style="list-style-type: none"> update completed and distributed to partners 	<ul style="list-style-type: none"> annual update to be completed
Develop and Maintain Operations Manual	<ul style="list-style-type: none"> ongoing updates to Flood Warning Manual 	<ul style="list-style-type: none"> finalize G. Ross Lord and Claireville Operation, Maintenance and Surveillance Manuals as per recommendations from Dam Safety Reviews completed in 2004 review of operating procedure for G. Ross Lord Dam to be completed by a consultant
Prepare for Emergency Operations	<ul style="list-style-type: none"> completion of Dam Safety Reviews for Claireville, G. Ross Lord, Milne and Stouffville Dams electrical upgrades completed at Claireville Dam 	<ul style="list-style-type: none"> risk assessment and emergency plan update to be completed for G. Ross Lord and Claireville Dams electrical upgrades to be completed at G. Ross Lord Dam Probable Maximum Flood modelling refinement for G. Ross Lord Dam testing and maintenance of spillway valve to be carried out at Stouffville Dam borehole drilling and piezometer installation at Claireville Dam as per recommendations from Dam Safety Review implementation of safety booms and public safety signage at Claireville and G. Ross Lord Dams

Section 2. Forecasting - to understand and quantify the response and potential impacts within watersheds to specific events		
GTA Flood Standard Component	Work Completed in 2004	Work to be carried out in 2005
Follow Daily Planning Cycle	<ul style="list-style-type: none"> ongoing on a daily basis with improvements/modifications as needed 	<ul style="list-style-type: none"> ongoing on a daily basis with improvements/modifications as needed
Section 3. Communications - to inform clients of the potential or actual impact of flood events in a concise and timely manner		
GTA Flood Standard Component	Work Completed in 2004	Work to be carried out in 2005
Establish Internal and External Communications Protocol	<ul style="list-style-type: none"> updates completed to communications system (fax, email, internet, voice messages) for dissemination of flood messages 	<ul style="list-style-type: none"> continue following established protocol
Section 4. Flood Operations - to provide on-going information and advice to municipal clients and CA staff		
GTA Flood Standard Component	Work Completed in 2004	Work to be carried out in 2005
Maintain an Emergency Operations Centre	<ul style="list-style-type: none"> corporate initiative underway 	<ul style="list-style-type: none"> ongoing
Monitor Flood Events	<ul style="list-style-type: none"> ongoing 	<ul style="list-style-type: none"> ongoing as needed
Follow Reasonable Safety Procedures	<ul style="list-style-type: none"> ongoing as needed 	<ul style="list-style-type: none"> ongoing as needed
Document Flood Events	<ul style="list-style-type: none"> Hurricane Isabel - communication to Water Board 	<ul style="list-style-type: none"> ongoing as needed
Document Communications with Internal and External Clients	<ul style="list-style-type: none"> communications documented on daily planning cycle spreadsheet and in log book - all documents on file 	<ul style="list-style-type: none"> ongoing as needed
Support Internal and External Clients	<ul style="list-style-type: none"> ongoing as needed 	<ul style="list-style-type: none"> ongoing as needed
Debrief Authority Staff	<ul style="list-style-type: none"> ongoing as needed 	<ul style="list-style-type: none"> ongoing as needed
Debrief River Watch Personnel	<ul style="list-style-type: none"> no formal program in place at this time 	<ul style="list-style-type: none"> review and update required to River Watch Program followed by training of appropriate personnel

RES.#D115/04 -

DON WATERSHED REGENERATION COUNCIL MINUTES

Minutes of Meeting #6/04, November 18, 2004 and Minutes of Meeting #7/04, December 16, 2004. The Minutes of Meeting #6/04, held on November 18, 2004 and Meeting #7/04, held on December 16, 2004.

Moved by: Pamela Gough
Seconded by: Michael Thompson

IT IS RECOMMENDED THAT the Minutes of the Don Watershed Regeneration Council Meeting #6/04, held on November 18, 2004 and Meeting #7/04, held on December 16, 2004, be received.

CARRIED

BACKGROUND

Copies of the minutes of the Don Watershed Regeneration Council are forwarded to the Authority through the Watershed Management Advisory Board. These minutes constitute the formal record of the work of the Don Watershed Regeneration Council, and serve to keep the Authority members informed of the steps being undertaken to implement the Don Watershed Task Force's report "*Forty Steps to a New Dorl*" and to regenerate the watershed.

Report prepared by: Alex Blasko, extension 5280
For Information contact: Alex Blasko, extension 5280
Date: February 03, 2005

RES.#D116/04 -

DUFFINS CARRUTHERS WATERSHED RESOURCE GROUP MINUTES

Minutes of Meeting #1/04, held on September 15, 2004. The Minutes of Meeting #1/04, held on September 15, 2004, are provided for information.

Moved by: Pamela Gough
Seconded by: Michael Thompson

IT IS RECOMMENDED THAT the Minutes of Duffins Carruthers Watershed Resource Group Meeting #1/04, held on September 15, 2004, be received.

CARRIED

BACKGROUND

Copies of the minutes of the Duffins Carruthers Watershed Resource Group are forwarded to the Authority through the Watershed Management Advisory Board. These minutes constitute the formal record of the work of the Duffins Carruthers Watershed Resource Group, and serve to keep the Authority members informed of the steps being undertaken to implement A Watershed Plan for Duffins Creek and Carruthers Creek.

Report prepared by: Brent Bullough, extension 5392
For Information contact: Gary Bowen, extension 5385
Date: January 20, 2005

RES.#D117/04-

ROUGE PARK ALLIANCE

Minutes of Meeting #5/04, October 8, 2004. The Minutes of Meeting #5/04, held on October 8, 2004, are provided for information.

Moved by: Pamela Gough
Seconded by: Michael Thompson

IT IS RECOMMENDED THAT the Minutes of Rouge Park Alliance Meeting #5/04, held on October 8, 2004, be received.

CARRIED

BACKGROUND

Copies of the minutes of the Rouge Park Alliance are provided to the Toronto and Region Conservation Authority through the Chair of the Authority, who is a member of the Rouge Park Alliance, and forwarded to the Watershed Management Advisory Board for their information.

**Report prepared by: Andrea Fennell, extension 5254
For Information contact: Adele Freeman, extension 5238
Date: January 25, 2005**

RES.#D118/04 -

ROUGE WATERSHED TASK FORCE MINUTES

Minutes of Meeting #5/04, October 28, 2004 and Minutes of Meeting #6/04, December 9, 2004.. Minutes of Meeting #5/04, held on October 28, 2004 and Minutes of Meeting #6/04, held on December 9, 2004 are provided for information.

Moved by: Pamela Gough
Seconded by: Michael Thompson

IT IS RECOMMENDED THAT the minutes of Rouge Watershed Task Force meetings #5/04 and #6/04 held on October 28, 2004 and December 9, 2004, respectively, be received.

CARRIED

BACKGROUND

Copies of the minutes of the Rouge Watershed Task Force are forwarded to the Authority through the Watershed Management Advisory Board. These minutes constitute the formal record of the work of the Rouge Watershed Task Force and serve to keep the Authority members informed of the steps being undertaken to develop the Rouge Watershed Plan.

**Report prepared by: Sylvia Waters, extension 5330
For Information contact: Sylvia Waters, extension 5330
Date: January, 2005**

TERMINATION

ON MOTION, the meeting terminated at 11:42 a.m., on Friday, February 11, 2005.

Dave Ryan
Chair

/ks