

Kemptville District

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Document 2

May 28, 2008

Economic and Environmental Sustainability Branch  
Planning, Transit and Environment  
City of Ottawa  
110 Laurier Avenue West, Ottawa, ON K1P 1J1

Attention: Judy Flavin, Natural Systems Program Manager

Dear Ms. Flavin:

The Ministry of Natural Resources (MNR) has a role to provide information and technical advice to planning authorities for consideration in municipal land use planning. For the last year, we have participated in various meetings and workshops with City staff to discuss natural resource interests relevant to the City of Ottawa's official plan review. More recently, we have met and discussed with you and your staff the work that the MNR Kemptville District undertook recently to review and update information regarding evaluated wetlands within the City of Ottawa.

Please find attached a digital copy of mapping showing the location and extent of evaluated wetlands within the City of Ottawa. We have also attached a table outlining the status of the evaluated wetlands contained within the mapping in terms of whether they are provincially or locally significant. In accordance with the definition contained within the Provincial Policy Statement (2005), significant wetlands are those *"identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time"*. We take this opportunity to confirm that all the wetlands shown on the mapping provided with this letter have been evaluated in accordance with the current evaluation procedure (Ontario Wetland Evaluation System) and their boundaries and status have been approved by this Ministry. It is also noted that all of the evaluated wetlands are located within either Ecoregion 6E or 5E as shown on Figure 1 of the Provincial Policy Statement (2005).

The Ministry of Natural Resources requests that the City of Ottawa use the current evaluated wetland information as the basis for designating and zoning lands within the City of Ottawa consistent with the Provincial Policy Statement (2005) as it pertains to Policy 2.1.3.b) significant wetlands in Ecoregions 5E, 6E and 7E.

The following information is provided as background information and context to facilitate understanding within the City of Ottawa and its constituents of the value of wetlands, the importance of protecting wetlands, the Ontario Wetland Evaluations System, and

additional information related to the recent exercise the Ministry of Natural Resources has undertaken to update its wetland files.

### **What are Wetlands?**

Wetlands are defined as lands that are seasonally or permanently flooded by shallow water as well as lands where the water table is close to the surface; in either case the presence of abundant water has caused the formation of waterlogged (hydric) soils and has favoured the dominance of water-loving (hydrophytic) or water-tolerant plants.

Wetlands are transitional habitats, often forming the connection between aquatic and terrestrial ecosystems. They can occur where the water table is at or close to the surface, in low-lying locations, or along the edges of lakes and rivers. Many wetlands are permanently flooded, while others flood only periodically in the spring or fall – it is often possible to walk through such areas in the summer without ever getting your feet wet!

Four major types of wetlands are recognized in Ontario: marshes, swamps, fens and bogs.

#### **Marshes**

Marshes are wetlands that are periodically or permanently flooded with water. Marsh vegetation typically consists of non-woody plants such as cattails, rushes, reeds, grasses and sedges. In open water marshes, floating and submerged plants such as water lilies and pondweeds can be found.

#### **Swamps**

Swamps are wooded wetlands that are often flooded for a portion of the year, but may appear quite dry during other times of the year. Swamp vegetation is dominated by trees, including both coniferous and/or deciduous species, and tall shrubs, such as willows, dogwood and alder. Common throughout Ontario, swamps are remarkably diverse, exhibiting a wide array of vegetation, age and ecological settings.

#### **Bogs**

Bogs are peat-filled depressions that receive their water and nutrients from rainfall. Peat consists of partially decomposed plants. Bogs are extremely low in mineral nutrients and tend to be strongly acidic. They are typically covered with a carpet of Sphagnum mosses. Other vegetation includes stunted black spruce trees, heath plants such as laurels and blueberries, and carnivorous plants such as sundews and pitcher plants. Bogs can take thousands of years to form and are extremely rare in the southern part of the province, though common throughout Northern Ontario.

#### **Fens**

Fens, like bogs, are peatlands – that is, wetlands that accumulate peat. They are located in areas where groundwater discharges to the surface. Fens are typically more nutrient-rich than bogs, and the water is less acidic. Typical fen vegetation includes

sedges and mosses, along with some grasses, reeds, low shrubs, tamarack and white cedar, sundews, pitcher plants and orchids. While fairly rare in Southern Ontario, fens are quite common in Northern Ontario.

### **Why are Wetlands Important?**

In addition to serving as an important component of a healthy, functional ecosystem, wetlands provide a variety of ecological services that benefit humans. These include:

- Improvement of water quality
- Reduction of flood damage
- Reduction of erosion
- Groundwater recharge and discharge
- Provision of habitat for fish and wildlife
- Recreation and tourism (e.g. fishing, hunting, nature enjoyment, etc.)
- Sustainable wetland products (e.g. wild rice, cranberries, baitfish, etc.)

A fact sheet is available that provides more details on the ecological services from the Ministry of Natural Resources. It has also been attached to this letter for further reference.

### **Significant Wetlands and the Ontario Wetland Evaluation System (OWES)**

By definition (PPS) significant wetlands are *“an area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the Province, as amended from time to time.”* The evaluation procedure used is a science-based ranking system known as the Ontario Wetland Evaluation System (OWES). This Ministry of Natural Resources (MNR) framework provides a standardized method of assessing wetland functions and societal values, and enables the province to rank wetlands relative to one another.

A wetland that has been evaluated using the criteria outlined in the OWES is known as an "evaluated wetland" and will have a "wetland evaluation file".

### **Wetlands are Dynamic – Evaluation Files are “Open”**

OWES recognizes wetlands as dynamic systems that can change over time (due to natural succession, changes in hydrology, etc) and thus the wetland evaluation files maintained by MNR District Offices are considered “open files.” These files can be amended from time to time as new information becomes available. For example, changes to the status of species, confirmation of new species occurrences, wetland boundary modifications, and changes to the social values of the wetland are recorded. As new science and technology becomes available, periodic revisions to the OWES itself may trigger the review and update of existing evaluated wetland files.

## **Evaluation Criteria**

The OWES identifies and measures wetland functions, and provides a means of evaluating the relative importance of individual wetlands based on perceived societal values. It generates a numerical ranking of wetland values or functions, which are grouped into four main categories:

1. **Biological Component:** recognizes that wetlands can differ in terms of productivity and habitat diversity
2. **Social Component:** measures some of the direct human uses of wetlands, including economically valuable products (such as wild rice, commercial fish and furbearers), recreational activities and educational uses
3. **Hydrological Component:** characterizes water-related values, such as the reduction of flood peaks and contributions to groundwater recharge and discharge, and water quality improvements
4. **Special Features Component:** addresses the geographic rarity of wetlands, the occurrence of rare species, ecosystem age, and habitat quality for wildlife, including fish.

## **Wetland Complexes**

Wetland complexes occur where two or more wetlands (termed wetland “units”) separated by a non-wetland area are functionally linked. Functional linkages include wildlife usage (e.g. migration corridors, forage areas), and surface water and groundwater connections. Most wetlands in Ontario are actually wetland complexes. The MNR is responsible for determining which wetlands and wetland complexes are provincially significant. Wetlands can also be identified and evaluated by other qualified individuals, provided they have been trained in and use the approved OWES methodology. In these cases, MNR District Offices are responsible for reviewing and approving the evaluations. On occasion, MNR offers training courses in wetland evaluation.

## **Wetland Boundary Delineation**

Wetland boundaries are often found in areas of gradual ecological change, which are known as “transition areas” or “eco-tones.” The wetland boundary is established where 50% of the plant community consists of upland plant species. Please note that this refers to the percentage of area covered by upland plant species, not to the number of different upland plant species. Topography (elevation and slope of the land) and soil data can help to clarify where the wetland boundary should be drawn. Wetland boundary lines appearing on maps are not meant to be highly precise, but should

generally be considered to be accurate to between 20 to 30 metres. This is understandable when one considers the process used for delineating wetland boundaries in OWES. For example, on a 1:10,000 scale map, the width of a hand-drawn wetland boundary line is roughly equivalent to a 15-metre zone on the landscape. On the ground, field visits to the wetland by trained biologists are required to accurately define the wetland boundary for “constraint mapping” and development purposes.

### **Provincially Significant Wetlands**

Provincially significant wetlands are evaluated and scored using a point-based system outlined in the OWES. A significant wetland is defined as any evaluated wetland that scores:

- a total of 600 or more points, or
- 200 or more points in either the Biological Component or the Special Features Component.

### **Information about the 2008 Wetland Boundary Updating Exercise**

In Ontario, wetland evaluation began in the early 1980s. At that time, the MNR made considerable efforts to evaluate wetlands on the landscape. However, since the mid-1990s, the ministry’s efforts have been refocused away from conducting new wetland evaluations on the ground. The MNR continues to be responsible for approving wetland evaluations conducted by other individuals who have taken the Ontario Wetland Evaluation System training course, and updating existing wetland files and boundaries as new information becomes available.

Many of the evaluated wetlands that occur within Eastern Ontario were originally evaluated during the 1980s and 1990s. At the time, the technology available to conduct wetland mapping was limited. Wetland boundaries were typically hand-drawn over air photos, then transcribed by hand onto printed topographic maps. Many of these maps were digitally scanned in the late 1990s for use within a Geographic Information System. In recent years, new air photos have been acquired from time to time, and are also displayed within the ministry’s Geographic Information Systems. With the dramatic increase in mapping technology and computing power, it is now possible to overlay and compare a variety of geographic information with increasing precision. With this new capability, it is much easier to see how well the wetland boundaries (which were originally hand drawn, transcribed and then digitized) align with features shown on aerial photographs.

Between February and April 2008, the MNR conducted a systematic review of the existing digital map data for evaluated wetlands within the city of Ottawa. MNR staff, trained in wetland evaluation and experienced with air photo interpretation, inspected the wetland boundaries in conjunction with air photos to identify areas where wetland

boundaries required adjustment to better represent the actual wetland edge. The adjustments made during this exercise fall into a few categories, as described below.

For all wetland modifications it is important to note that a conservative approach was taken. Areas were not added or deleted and boundaries were not shifted unless it was absolutely clear from the air photos that the change was warranted. For example, areas that appeared as if they *could be* wetland but would require field investigation to be certain were not added during this exercise. Similarly, if there were any doubts about areas already within an evaluated wetland boundary, these areas remained in the wetland. These wetland areas will require field verification before they can be considered for removal from the wetland.

### **Minor Additions and Deletions**

Throughout many of the wetlands within the City of Ottawa, there were areas where small adjustments to the wetland boundary were made, either by extending the wetland boundary slightly or retracting the boundary, to more accurately reflect the features revealed on air photos. For example, in some cases it was apparent that a residence had been erected within the wetland boundary, and in these cases, small cut-outs of the wetland were made in order to exclude areas that are now buildings, mowed lawn or other land covers that do not meet the definition of wetland set out in the OWES. Minor additions and deletions were quite small, typically affecting less than five percent of a wetland's overall area.

### **Major Additions**

In a few cases, examining wetland boundaries on top of air photos revealed large but previously undocumented areas of wetland habitat in close proximity to an evaluated wetland.

Some wetland types are easy to identify and delineate from air photos. Examples of these include marshes, bogs, fens and some shrub swamps. There are other types of wetland, such as certain types of treed swamps, which are more difficult to precisely delineate using air photos, and are better verified on the ground or by other direct visual inspection (e.g. low-level flyover). Major additions made during the 2008 review exercise were limited to wetland areas that were clearly discernable and could be positively identified from air photos. This resulted in a very conservative identification of additional wetland areas. If actual ground verification were to be conducted, it is highly likely that additional wetland areas would be identified and these wetland additions would expand further.

In some cases, these additions to the wetland consisted of areas that were actually physically joined to the existing evaluated wetlands. In other cases, the new wetland areas were within the complexing distance stipulated by the OWES and there was

evidence of a biological or hydrological link (e.g. a surface watercourse) between the additional areas and the evaluated wetland. In these cases, the additional wetland area was complexed with existing evaluated wetlands.

As a result of this review exercise, Richmond Fen, Brassils Creek and Corkery Creek had significant areas of wetland added. These new areas were added very conservatively, as only areas that were easily distinguishable as wetland through air photo interpretation were included. Site visits to these area areas would likely reveal additional wetland areas. Manion Corners Long Swamp, Constance Creek and Cranberry Creek also saw significant enlargement as a result of this exercise, although in these cases the additions came through either complexing or joining with other evaluated wetlands. This is discussed in more detail under “Wetland Complexing and Joining,” below.

When considering the effect of additions to wetlands that are already identified as provincially significant, it is helpful to understand that several components of the Ontario Wetland Evaluation System relate to overall area. Generally speaking, larger wetlands score higher than smaller wetlands, all else being equal. As such, if a wetland already has a score that is high enough to render it provincially significant, adding areas to the wetland (either by adding new area within the wetland unit or through complexing new wetland units) will most assuredly increase the wetland’s score. In these cases the entire wetland, including the new areas, continues to be considered provincially significant. It is not necessary to conduct a site visit if new areas can be positively identified as wetland using other means.

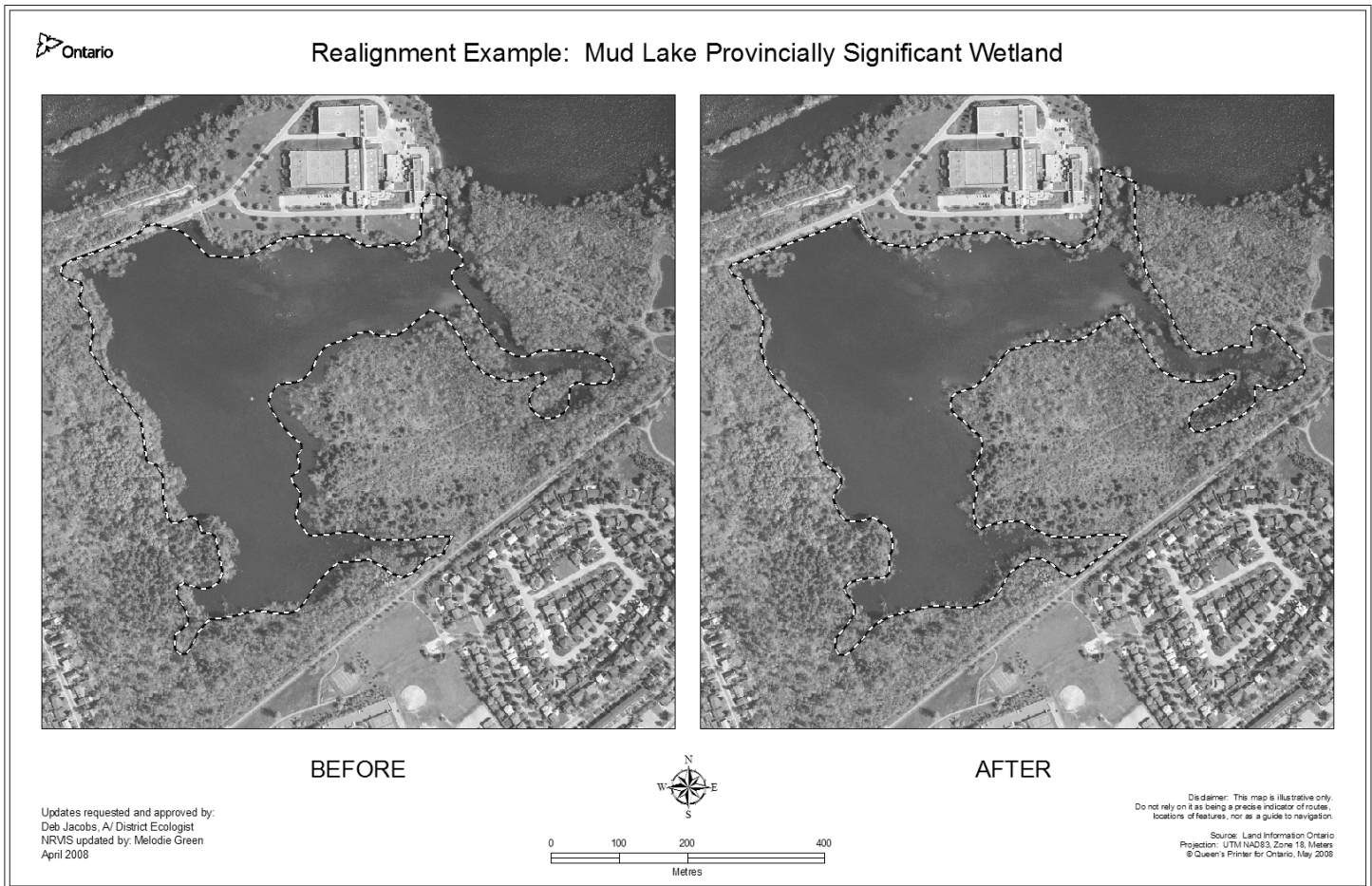
## **Major Deletions**

There were a few locations within the City of Ottawa where it was apparent that the land use has changed since the original wetland boundary was determined. Areas of subdivision or developed areas, golf courses and areas that have been converted to agriculture are examples where major deletions were made to the previous wetland boundaries. In general, major deletions removed a minimum of two hectares from the area within the wetland boundary, or decreased a wetland’s overall area by more than five percent.

Wetlands that saw significant deletions as a result of this exercise include Kizel Drain Wetland Complex, Osgoode Wetland Complex, South Highway 25 Wetland, Stittsville Wetland Complex and Stoney Swamp Wetland Complex. Kizel Drain Wetland Complex, South Highway 25 Wetland and Stittsville Wetland Complex are not considered to be Provincially Significant, and so the removal of area will not affect the status of the wetland. Osgoode Wetland Complex and Stoney Swamp Wetland Complex are considered Provincially Significant. Both of these wetlands have scores of over 200 points in the special features component of the evaluation. This component is not directly size-dependent, therefore these wetlands will retain their provincially significant status, despite the reduction in wetland area.

## Wetland Boundary Realignment

The review exercise also revealed areas where the evaluated wetland mapping could be improved by shifting the boundaries short distances to their originally intended locations. MNR staff consulted original wetland evaluation maps in conjunction with air photos, and realigned the wetland boundaries with appropriate landscape features as required. Mud Lake Provincially Significant Wetland provides a good example of the realignment work that was completed, and is illustrated here.



## Wetland Complexing and Joining

As part of this review exercise, two non-provincially significant wetlands were complexed with other evaluated wetlands that were provincially significant. There was also one non-provincially significant wetland that was joined with another evaluated wetland (i.e. it was determined that the two wetlands are actually connected and, in reality, are only one wetland). These are described below.



**Ashton Station Wetland**

Ashton Station Wetland was a non-provincially significant wetland that was originally evaluated in 1994. It is located on the SW corner of the larger, provincially significant Manion Corner's Long Swamp Wetland. At its closest point, these two wetland areas were separated by less than 400 metres. The area between the two wetlands appears to be predominantly natural cover with additional areas of wetland visible at the proximal edges of both wetlands, bringing the actual separation distance to approximately 200 metres. Additionally, there is a small surface watercourse that actually joins the two wetlands. The wetlands meet the criteria for complexing (as per OWES), because the surface water connection provides a hydrological link between the two wetland units, and the separation distance is less than 750 metres. Manion Corners Long Swamp wetland is already provincially significant. The addition of the new area of the Ashton Station Wetland can only increase the wetland score, and so the new wetland complex is also provincially significant. Ashton Station wetland should henceforth be considered as part of the Manion Corners Long Swamp Wetland Complex, and these areas should be considered to be Provincially Significant Wetland.

**Dwyer Hill Road Swamp**

Dwyer Hill Road Swamp was a non-provincially significant wetland that was originally evaluated in 1991 and is located on the NW side of Manion Corners Long Swamp. At their closest point, these two wetlands were less than 100m apart. The air photos clearly indicated that the intervening area was also wetland with the exception of Dwyer Hill road between them. Digital base map information indicated that a water course actually joined the two wetlands, and an inspection from the road by MNR staff actually confirmed the presence of a culvert under Dwyer Hill Road joining a small surface watercourse, and wetland habitat on both sides of the road. As such, Dwyer Hill Road Swamp is actually physically connected to Manion Corners Long Swamp and the MNR updated its files to reflect the fact that the former Dwyer Hill Road swamp should actually be simply considered as part Manion Corners Long Swamp. Since Manion Corners Long Swamp is already provincially significant, and the new area will only serve to increase the score, Manion Corners Long swamp, including the area of the former Dwyer Hill Road Swamp should be considered to be provincially significant.

**Baxter Conservation Area and Cranberry Creek Wetland**

In 1998, a qualified wetland evaluator undertook a wetland evaluation of areas contained in and around the Baxter Conservation Area, owned the Rideau Valley Conservation Authority (RVCA). The wetland evaluation was provided to the MNR, although no decision regarding the evaluation was made at the time it was submitted. When staff at the RVCA were informed that MNR was undertaking a review of wetlands within the City of Ottawa, they requested that MNR consider the Baxter Conservation Area Wetland evaluation anew. Staff from the MNR office reviewed the wetland evaluation and concluded that that it was completed in accordance with the Ontario Wetland Evaluation System. Staff then visited the Conservation Area to confirm the wetland communities and boundaries identified in the evaluation were still accurate. The evaluation indicated a score of 668 points, enough for the Baxter Conservation Area Wetland to be considered Provincially Significant. However, MNR's site visit

confirmed that the Baxter Conservation Area Wetland is actually joined in two locations with the previously-evaluated Cranberry Creek Provincially Significant Wetland. So while the Baxter Conservation Area Wetland could have been considered its own provincially significant wetland, it was decided by MNR that it was more appropriate to expand the boundaries of Cranberry Creek Provincially Significant Wetland to encompass this newly identified wetland area. Cranberry Creek Wetland, including this newly added area, remains provincially significant,

## **Unique Cases**

There are a few unique situations where the wetland information provided to the City of Ottawa as a result of this exercise is different from information that was previously available to the City of Ottawa and other partners through Land Information Ontario (LIO), but that don not reflect any of the categories listed above. These will be discussed here briefly.

### **Carp Hills Wetland Complex**

This is a large wetland comprised of several hundred separate wetland units which is located in Ecoregion 6E, although it was considered to be within Site Region 5E, prior to the Ecoregional boundary amendments made across the province in 2002. This wetland complex was originally evaluated in 1986 & 1987 and the wetland file was updated with new information in 1999.

Due to the very large numbers of wetland units in this wetland, only part of this wetland had been digitized as of January 2008 and the full extent of this wetland was only reflected in the official wetland evaluation file at the Kemptville MNR office. Since the City of Ottawa now requires this information, the MNR undertook to digitize the remaining areas of this wetland as part of the wetland review exercise. Although it may appear that what has been provided contains a large amount of “new area” in this wetland, this is not the case. The current map simply reflects the full extent of the provincially significant wetland as it has appeared in the wetland evaluation file since 1999.

### **Leitrim Wetland**

It was discovered this past autumn that the wetland boundary for Leitrim Wetland contained within the MNR’s digital files (also available to outside partners through Land Information Ontario) did not reflect the actual wetland boundary as had been approved by the MNR in the 1990s. The area of discrepancy was the northeast corner of the wetland. Once this error was discovered, it was corrected in MNR’s digital files and these corrections are now reflected in the spatial data available through Land Information Ontario. Again, this is not a recent “change” to the wetland boundary per se, but simply a correction so that the current digital boundary actually reflects the boundary the MNR approved over a decade ago.

### **Goulbourn Wetland Complex**

In early 2005, the City of Ottawa received correspondence from the MNR indicating that we were in support of a report by Ron Huizer of Jacques Whitford regarding 20 new wetland areas that were recommended for inclusion within the provincially significant Goulbourn Wetland complex.

The MNR updated its wetland evaluation file to reflect these 20 new wetland units at that time, although our digital files did not get updated immediately. As a part of MNR's wetland review exercise this spring, these new wetland areas were mapped digitally and are thus reflected in the digital mapping currently being provided to you. These additional wetland areas are not "new" as a result of the 2008 exercise; the digital mapping was simply updated to reflect the 2005 decision.

### **The Larger Context**

It is important to note that there are many wetlands in the City of Ottawa that have yet to be evaluated. Estimates from our latest landcover mapping (SOLRIS version 1.2) indicate that there are approximately 51 000 hectares of wetland within the city of Ottawa. Of these, only 41 percent (21 000 hectares) have been evaluated to date, and approximately 30 000 hectares of wetland have yet to be evaluated. These figures are consistent with percentages of wetlands evaluated in planning jurisdictions across southern Ontario. There is much work left to do in the pursuit of achieving sustainable development and we would like to discuss ways and means of accomplishing additional wetland evaluations as areas come up in the development review process.

Sustainable development is a core mandate of the MNR, a challenging concept to implement and one that can only be achieved by all government agencies and the public working in partnership. The added stress of climate change on our natural environment adds impetus to the need to develop and protect healthy, resilient, ecosystems that will be able to support human quality of life in the future. The protection of our wetlands is vitally important to a sustainable future for the people of Ottawa and Ontario as a whole.

Sincerely,



Alex Gardner  
District Manager  
Kemptville District Ministry of Natural Resources

cc: Anda Rungis, Kemptville District  
Laurie Miller, Ministry of Municipal Affairs and Housing