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*Environmental Services*  
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March 2, 2000

GLL 97-179

Wychwood Park Trustees  
c/o Mr. Marc Giacomelli  
81 Wychwood Park Road  
Toronto, Ontario  
M6G 2V5

Dear Wychwood Park Trustees:

We are pleased to provide you with this Maintenance Protocol for Wychwood Pond. Certain maintenance activities are important for the long-term health of the pond and the success of the restorative measures that were undertaken at the site. It will be necessary for you to distribute some of the information to the Park residents, while other items (such as litter removal and weir maintenance) will require a staff or volunteer.

A description of the maintenance activities is provided below, and a checklist that may be used to schedule the work is attached to this letter.

#### **Pond Debris and Leaf Litter Maintenance**

We recommend that routine trash removal be performed to prevent obstructions at the weir and to prevent a buildup of leaf litter. The recommended maintenance therefore includes raking of leaves from the pond and the inflow basin in the fall. The weir should be inspected approximately monthly, with emphasis after rain events to ensure that debris has not been transported into the pond outlet. Regular inspections will ensure that subsequent rain events will not result in dramatic pond level increases. Any debris that gathers at the pond outlet should be collected and disposed of appropriately (i.e., it should not be flushed downstream).

#### **Water Level Adjustments**

In order to mimic natural pond level variations, we recommend that the pond water level be adjusted on a seasonal basis. The water level variations will, in particular, have a benefit to the shoreline plantings that have naturally adapted to seasonal changes in soil moisture.

Lake or pond water levels are normally highest in spring, after snowmelt. Water levels then generally decline during the summer, when evaporation is high and groundwater flow rates are low. Typically, water levels will increase again in the late summer or fall in response to heavier rains. Over the winter, water levels are intermediate, with some capacity provided for snowmelt in the spring.

At Wychwood, the pond water level is determined by the height of the weir. Therefore, the weir height should be seasonally adjusted to mimic the natural water level fluctuations. We have provided a recommended approach, but over time this schedule may be adjusted to conform to the particular requirements of the pond or aesthetic considerations.



We recommend that the high springtime levels be gradually lowered starting in about late June each year. A total lowering of about 18 inches (0.45 m) is recommended initially. This lowering should be done gradually, with one 6-inch log removed in each of June, July and August respectively. In late September, two logs could be returned again, with the last log replaced either before the winter freeze or before the spring melt.

### **Shoreline and Aquatic Plantings**

We recommend that the shoreline and aquatic plantings be monitored approximately annually to guard against new invasive species and to monitor plant health. Any gaps could be filled with appropriate planting material. A planting list, provided by the Toronto and Region Conservation Authority and modified by a Senior Ecologist at Gartner Lee, is attached to this letter along with a schematic plan showing the appropriate planting locations.

Some selective tree removal was conducted as part of the pond work in 1998. However, some of the larger trees that were approved for removal by the City of Toronto have not been removed. It is still advisable to remove some of these trees that shade the pond shoreline plantings.

### **Inspection of French Drains**

Several french drains were installed to reduce erosion, disguise the old outlet pipes and to permit some infiltration. They should be periodically inspected to ensure they continue to function properly. The inspections should examine if excessive erosion is occurring, and should be carried out after the spring thaw and after any very heavy rain events.

### **Fish Restocking**

As you are aware, the pond was restocked after the dredging with native minnow species and largemouth bass. At the time of the bass transfer, about 1,100 small emerald shiner (minnows) were also stocked at the pond in order to provide a food source to the bass and so that the other minnows could become established. It is not likely that the emerald shiners will survive in the pond during the hotter summer months. This should not be a cause for concern, and any complaints should be handled with this information in mind. Should dead fish be encountered, please dip net them out. If there seems to be an inordinate number of dead fish, please call Gartner Lee.

We recommend that any restocking of goldfish in the pond should be reconsidered. If still desired, the restocking should be delayed for approximately one year, until the summer of 2001 at the earliest. The purpose of delaying the reintroduction of goldfish is to permit the native minnows and the pond plantings to become firmly established. The feeding habits of the goldfish can greatly increase turbidity and disturb or destroy the aquatic plants upon which some of the other minnows rely for habitat. We therefore highly recommend that the number of goldfish be limited to six (6) or less. If there is any visual evidence that goldfish have already been placed in the pond, the number of fish should be reduced accordingly.



### Homeowner Actions for Water Quality

During the pond assessment in 1997, GLL measured high levels of nutrients and suspended solids in the waters flowing into the pond. These high concentrations are likely due to the inputs of organic matter and sediment from the north ravine. Homeowners should be reminded periodically that composting in the north ravine is not permitted. Composting is an excellent method of returning important nutrients to the soil, but when it is performed in the north ravine, these nutrients and organics tend to run into the pond. In addition, residents must be discouraged from blowing leaves and other organics into the ravine or on to the road.

Attached to this letter is a brochure that was kindly contributed by the Municipality of Ottawa-Carleton that could be copied and distributed to the Park residents. It includes suggestions for some actions that have already been initiated, but should be followed up, such as the downspout disconnection program and minimizing the use of lawn fertilizers and pesticides.

### Follow-Up Monitoring

Gartner Lee has contacted Professor Ann Zimmerman at the University of Toronto to inquire if she and her students might be able to provide some post-dredging pond monitoring. She has responded favourably, but no firm plans have yet been made. Prof. Zimmerman indicated that the students of another limnology professor at U of T, Helene Cyr, might be best suited to provide assistance. We therefore recommend that you maintain contact with these two professors. Prof. Zimmerman can be reached at 978-3483. Gartner Lee would, of course, be very interested in reviewing the results of any studies conducted at the pond.

We again thank you for the opportunity to assist you with this very interesting and worthwhile restoration project. Should you have any questions about this maintenance protocol, please contact Alice Dove at extension 241 or Deborah Martin-Downs at extension 225.

Yours very truly,  
GARTNER LEE LIMITED

Yours very truly,  
GARTNER LEE LIMITED

Deborah K. Martin-Downs, M.Sc.  
Senior Fisheries Biologist  
Principal

Alice E. Dove, M.Sc.  
Water and Earth Scientist

AED:mm  
Encl.



## Checklist of Pond Maintenance Activities

Where	What	When
<b>Pond Debris and Leaf Litter Maintenance</b>	<ul style="list-style-type: none"><li>• Remove Litter and Debris at Weir</li></ul>	<ul style="list-style-type: none"><li>• Approximately monthly</li><li>• After rain events</li></ul>
	<ul style="list-style-type: none"><li>• Rake Leaves from Pond</li></ul>	<ul style="list-style-type: none"><li>• As required each autumn</li></ul>
<b>Water Level Adjustments</b>	<ul style="list-style-type: none"><li>• Remove One Log at Weir</li></ul>	<ul style="list-style-type: none"><li>• End of June</li><li>• End of July</li><li>• End of August</li></ul>
	<ul style="list-style-type: none"><li>• Add Two Logs at Weir</li></ul>	<ul style="list-style-type: none"><li>• End of September</li></ul>
	<ul style="list-style-type: none"><li>• Add One Log at Weir</li></ul>	<ul style="list-style-type: none"><li>• Before Winter Freeze or Before Spring Melt</li></ul>
<b>Shoreline and Aquatic Plantings</b>	<ul style="list-style-type: none"><li>• Check for Gaps, Plant Health, Dominance</li></ul>	<ul style="list-style-type: none"><li>• Seasonally</li></ul>
<b>Inspection of French Drains</b>	<ul style="list-style-type: none"><li>• Check for Erosion</li></ul>	<ul style="list-style-type: none"><li>• After Spring Thaw</li><li>• After Heavy Rain Events</li></ul>
<b>Homeowner Education</b>	<ul style="list-style-type: none"><li>• Water Quality, Composting and Downspout Disconnection Education</li></ul>	<ul style="list-style-type: none"><li>• Annually or as appropriate</li></ul>



## List of Suitable Pond Area Plantings

Latin Name	Common Name	Suitable Planting Zone
<i>Caltha palustris</i>	Marsh marigold	1 – 2
<i>Mimulus ringens</i>	Monkey flower	1
<i>Symplocarpus foetidus</i>	Skunk cabbage	Seepage areas
<i>Acorus americanus</i>	Sweet flag	2 (1)
<i>Lobelia siphilitica</i>	Great lobelia	
<i>Lobelia cardinalis</i>	Cardinal flower	1
<i>Potamogeton richardsonii</i>	Richardson's pondweed	3
<i>Scirpus pendulus</i>	Bulrush	1 – 2
<i>Scirpus atrovirens</i>	Black bulrush	1
<i>Nymphaea odorata</i>	Fragrant water lily	3
<i>Sagittaria latifolia</i>	Arrowhead	1 – 2
<i>Juncus effusus</i>	Rush	1
<i>Iris versicolor</i>	Blue flag	1 – 2
<i>Eupatorium maculatum</i>	Spotted Joe-Pye-Weed	1 (2)
<i>Eupatorium perfoliatum</i>	Boneset	1

### Zone Locations:

