

Clause embodied in Report No. 3 of the Board of Health, as adopted by the Council of the City of Toronto at its meeting held on May 21, 22 and 23, 2003.

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Proposed Pesticide By-law

(City Council on May 21, 22 and 23, 2003, amended this Clause:

(a) in accordance with the following portions of the compromise proposal for the Pesticide By-law, as amended by City Council:

Moved by: Councillor Duguid

Seconded by: Councillor Mihevc

“BE IT RESOLVED THAT:

(1) an Advisory Committee be formed, called the Pesticide By-law Advisory Committee, which will consist of the following members:

- two representatives from the Toronto Environmental Alliance;*
- one representative of the Water and Waste Water Division of the Works and Emergency Services Department;*
- one representative of the Economic Development, Culture and Tourism Department;*
- one Public Health official;*
- one representative of the medical profession;*
- two representatives of the lawn care industry;*
- two representatives of Landscape Ontario; and*
- one scientific representative.*

The Committee will be Chaired by a designated member of staff to be appointed by the Chief Administrative Officer. The Committee will be requested to consider the issues referred to it in this compromise document and report through the Chief Administrative Officer to the appropriate Standing Committees and City Council with recommendations, including, where appropriate, amendments to the By-law.

(2) the Pesticide By-law Advisory Committee be requested to further define pest infestation and develop ‘action thresholds’ for the most common weed and insect pests for which non-exempt pesticides may be used and this be reported to City Council, through the Chief Administrative Officer to the appropriate Standing Committees, and received by City Council for

approval by April 2004, such report to include, if appropriate, amendments to the Pesticide By-law, and further, that the Pesticide By-law Advisory Committee be requested to review the Federal Government's pest management research and initiatives, such as the Federal/Provincial/Territorial Healthy Lawns Strategy for Urban Pesticide Reduction, to facilitate the development of 'action thresholds', and report on the status of the initiatives of the Federal Government and/or its agencies in reviewing chemical pesticides as products safe for public sale.

- (3) the Medical Officer of Health (MOH), in collaboration with the Pesticide By-law Advisory Committee, integrate the definition of pest infestation, which is based on 'action thresholds', into the resource materials that will form the basis of a public education campaign and the core of the City enforcement policy for the Pesticide By-law.*
- (4) the principles of Integrated Pest Management (IPM) plant health care be supported and integrated into the definition of an 'infestation' and the development of 'action thresholds' under which the use of non-exempt pesticides may be implemented.*
- (5) the Pesticides By-law allow the use of non-exempted pesticides for managing an infestation which will be defined by developing 'action thresholds' to be determined through the recommended process.*
- (6) in the education program, City residents will be encouraged to consult a professional licensed applicator and make use of their services, if application of non-exempted pesticide is anticipated.*
- (7) the proposed Pesticide By-law be amended:
 - (c) to provide that the City Solicitor be requested to prepare a set fine application for the Pesticide By-law for review and approval by the Chief Judge and that the recommended set fine for breach of the By-law be \$250.00.**
- (8) the Commissioner of Economic Development, Culture and Tourism, in consultation with the Medical Officer of Health, monitor the Integrated Pest Management Council's Accreditation Program and report back to City Council annually, beginning in October 2004, on its effectiveness in meeting the City of Toronto objective of reducing pesticide use and, further, that consideration be given to replacing references in the By-law to 'an applicator licensed under the Ontario Pesticides Act', to 'an applicator licensed under the Ontario Pesticides Act and accredited through the Integrated Pest Management Council's Accreditation Program', when the Integrated Pest Management Council's Accreditation Program has sufficiently progressed.*

- (9) *the Medical Officer of Health report to City Council by April 2004 on the details of a cost-effective enforcement plan for the Pesticide By-law, including the provision for 'stepped' enforcement geared towards public education with a provision for warnings for first offenders.*
- (10) *the Medical Officer of Health ensure that education and by-law compliance measures place high priority on sensitive sites, such as child care facilities, schools and hospitals and sites adjacent to those sensitive locations, as well as properties adjacent to natural bodies of water.*
- (11) *the Medical Officer of Health, in consultation with the Commissioner of Works and Emergency Services and the Commissioner of Economic Development, Culture and Tourism, report back to City Council on an evaluation of the Pesticide By-law within three years following the phase-in of the By-law.*
- (12) *the Pesticide By-law be phased in as follows:*
 - (a) *2003-2005 - while public education will begin sooner, the By-law comes into effect on April 1, 2004, with a period for continued public education and a transition period for the lawn care industry to expand and enhance the Integrated Pest Management Program, with the issuance of warnings only for non-compliance to begin in spring 2005; and*
 - (b) *September 2005 - the By-law is fully implemented and enforcement is fully operational, in keeping with the above principles outlined in the Pesticide By-law Compromise;*

and the Medical Officer of Health be requested to report to Council, through the Board of Health, on an aggressive public education strategy and program that assists the public in employing lawn and garden maintenance methods that reduce the use of pesticides and, further, that such report include resource requirements, stakeholder involvement, provincial regulatory change, an implementation schedule and a work program.”;

- (b) *in accordance with the following recommendations of the Works Committee embodied in the communication dated April 30, 2003, from the City Clerk:*

“The Works Committee advises Council of its support for the proposed Pesticide By-law attached to the report dated March 25, 2003, from the Medical Officer of Health, subject to the following amendments:

- (1) *amending Section 1, 'Definitions', subsection B(1) to read 'A product that uses pheromones to lure insect pests, sticky media to trap insect pests and "quick-kill" traps for vertebrate species considered "pests" such as mice and rats';*
- (2) *amending Section 1, 'Definitions', subsection B(2) as follows:*

- (a) *changing the preamble to the list to read ‘A product that is or contains any of the following active ingredients’;*
 - (b) *changing ‘Ferrous phosphate’ to ‘Ferric phosphate’;*
 - (c) *adding fatty acids and sulphur to the list of products;*
 - (d) *changing ‘horticultural vinegar’ to ‘Acetic acid’; and*
 - (e) *changing the definition of ‘Borax’ to read ‘Borax, also called boric acid or boracic acid’; and*
- (3) *amending Section 2, ‘Restrictions’, subsection B(7) to read ‘To exterminate or repel rodents’.”;*
- (c) *to provide that:*
- (1) *dandelions be included in the definition of “infestation” and the Pesticide By-law Advisory Committee be requested to develop action thresholds;*
 - (2) *the Pesticide By-law not be enforced until such time as City Council has approved a definition of “infestation”;* and
 - (3) *for the purposes of monitoring pesticide usage, the City of Toronto consider analyzing pesticide usage and sales at the wholesale or retail level, and not require reporting by individuals; and*
- (d) *by adding thereto the following:*
- “It is further recommended that:*
- (1) *the Federal Government be requested to address the following issues:*
 - (a) *the availability of pesticides and the ability of the public to purchase them; and*
 - (b) *the use of pesticides by the agricultural industry and the regulations which govern such usage;*
 - (2) *the Commissioner of Urban Development Services and the City Solicitor be requested to submit a joint report to the Board of Health on the feasibility of amending the Licensing By-law to require, as a condition of a business licence, that all vendors of registered control products under the Federal Pest Control Products Act be required to display in a prominent location adjacent to where these substances are being sold, a message approved by the Medical Officer of Health;*

- (3) *the City establish a demonstration project in one park in each Community Council area for a total of 6 parks in which the City Parks and Recreation Department deploys horticultural methods that are totally pesticide and herbicide free;*
- (4) *these demonstration parks be used to experiment with methods of creating healthy turf and deploying parks management techniques which could later be incorporated into Standard Park methodology;*
- (5) *these demonstration parks be selected on the following basis:*
 - (a) *they possess a variety of physical and use characteristics to reflect most park situations within the City;*
 - (b) *they not be existing show parks like Edwards Gardens or Rosetta McLean Gardens; and*
 - (c) *they be selected in co-operation with local Councillors;*
- (6) *the Commissioner of Economic Development, Culture and Tourism, be requested to submit a report to the Economic Development and Parks Committee on the status of this project as it unfolds, with an annual report to the Committee outlining the results of techniques used and applicability to other park situations;*
- (7) *these demonstration parks be appropriately signed and the community be invited to share in the work being done by establishing a Citizen Advisory Committee, including the respective local Councillor(s) for each of the demonstration parks;*
- (8) *the Commissioner of Economic Development, Culture and Tourism, be requested to prepare a proposed budget for the demonstration project for consideration by the Economic Development and Parks Committee and the Budget Advisory Committee; and, in consultation with the Chief Financial Officer and Treasurer and the Chief Administrative Officer, recommend an appropriate source of funds for the project;*
- (9) *the following portions of the compromise proposal for the Pesticide By-law be referred to the Pesticide By-law Advisory Committee for further consideration:*
 - (7) *That the proposed Pesticide By-law be amended:*
 - (a) *by requiring that any person that applies a “non-exempt” pesticide under the By-law report such application to the Medical Officer of Health with in five (5) business days of the application for the purpose of monitoring trends in pesticide use. The Pesticide By-law Advisory Committee should be consulted in determining how that reporting can take place at minimum cost to the City of Toronto and to the lawn care industry. Further, that the reporting system*

be capable of monitoring non-exempt pesticide application geographically.

- (b) *to provide that it is permitted to use a pesticide on a golf course or a lawn bowling green, as long as the following conditions are met:*
- (i) *the pesticide is applied by a licensed applicator only;*
 - (ii) *the pesticide is stored in a fire proof storage area with containment, ventilation, steel shelving and a fireproof sign, and the golf clubs or lawn bowling club must maintain an up-to-date inventory list which must be available to the City's Medical Officer of Health;*
 - (iii) *the applicator must have and comply with material safety data sheets available for each pesticide they might apply and they must provide the sheet, upon request, to any person abutting the golf club or lawn bowling green property;*
 - (iv) *there be no application of pesticides within two (2) metres of the golf club or lawn bowling green's property lines;*
 - (v) *there be no application of pesticides within five (5) metres of any open watercourses; and*
 - (vi) *on January 31 of each year, the golf clubs or lawn bowling greens must submit to the Medical Officer of Health a written report of all measures which have been taken to reduce the use of pesticides and produce a detailed inventory of all pesticides applied in the previous year on the golf course or lawn bowling club.'; and*
- (10) *the following motions be referred to the Medical Officer of Health:*

Moved by Councillor Di Giorgio:

'That Part (7)(c) of the compromise proposal for the Pesticide By-law be amended to provide that the proposed set fine for breach of the By-law, in the amount of \$250.00, only be applied after the City of Toronto has fully demonstrated the effectiveness of using organic products on City parkland.'

Moved by Councillor Milczyn:

‘That Part (7)(b) of the compromise proposal for the Pesticide By-law be amended to provide that cemeteries be added to the list of land usage where pesticides may be used.’

Moved by Councillor Tziretas:

‘That Part (5) of the compromise proposal for the Pesticide By-law be amended by deleting the words “an infestation”, and inserting in lieu thereof the words “a suspected infestation”, so that Part (5) shall now read as follows:

“(5) the Pesticides By-law allow the use of non-exempted pesticides for managing a suspected infestation which will be defined by developing ‘action thresholds’ to be determined through the recommended process.” ’ ’)

The Board of Health recommends that:

- (1) the financial implications summarized in Table 2, of the report (March 25, 2003) from the Medical Officer of Health, related to the implementation of the Pesticide By-law be forwarded to the Budget Advisory Committee and then to the Policy and Finance Committee during the 2004 budget process for their consideration;**
- (2) the City Solicitor be authorized to prepare and introduce a Bill in Council in the form or substantially in the form of the draft by-law attached to the aforementioned report (March 25, 2003) as Appendix “A”; subject to:**
 - (i) amending subsection B(1) to read:**

“A product that uses pheromones to lure pests and ‘quick-kill’ traps for vertebrate species considered ‘pests’ such as mice and rats.”; and
 - (ii) amending subsection B(2) by adding horticultural vinegar (acetic acid) to the list of pest control products permitted for use in the City of Toronto;**
- (3) the Medical Officer of Health report back annually on progress made in achieving pesticide use reductions through the implementation and enforcement of the Pesticides By-law;**
- (4) the federal Minister of Health be requested to ensure that regulations made under the Pest Control Products Act require annual reporting of pesticides sales data, in kilograms and/or litres, both by active ingredient and by municipality in which the products are sold, in order to facilitate municipal efforts to monitor and evaluate the effectiveness of pesticide use reduction programs;**

- (5) the federal Minister of Health and the provincial Minister of the Environment be requested to expedite programs presently underway to increase public access to reduced-risk pesticides, restrict public access to high-risk pesticides, improve access to information about the safe use of pesticides, and increase co-operative efforts through the Healthy Lawn Strategy in order to reduce reliance on lawn care chemicals;**
- (6) the federal Minister of Health and the provincial Minister of the Environment be requested to include the municipal sector as a partner in the Federal/Provincial/Territorial Committee mandated to provide advice and direction to governments on programs and policies for pesticides with the aim of enhancing sustainable pest control practices;**
- (7) the provincial Minister of the Environment be requested to establish standards for Integrated Pest Management in regulations under the Pesticides Act, and provide that IPM training be required in order to be a licensed exterminator in the Province of Ontario; and**
- (8) the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.**

The Board of Health advises of having taken the following action:

- (A) endorsed the report (March 25, 2003) from the Medical Officer of Health regarding a proposed Pesticide By-Law and the attached by-law and directed that they be forwarded to City Council for approval for its meeting on May 21, 2003 in accordance with motion J14 which was adopted by Council on February 11, 2003;
- (B) directed that the following reports along with Appendix A, B, and C contained in the Medical Officer of Health's report dated November 7, 2002 describing the "Common Ground" strategy be forwarded to the Works Committee and the Economic Development and Parks Committee for their information, and with a request that they consider holding a joint meeting and to submit their comments with respect to this matter directly to Council for its meeting on May 21, 2003:
 - (i) (March 25, 2003) from the Medical Officer of Health, presenting a pesticides by-law similar to the Hudson, Quebec by-law, and reporting on the experience of other jurisdictions as directed by the Board of Health;
 - (ii) confidential report (March 7, 2003) from the City Solicitor, providing comment on the proposed Pesticides By-law, such report to be considered in-camera having regard that the subject matter relates to solicitor/client privilege;
 - (iii) (March 18, 2003) from the Medical Officer of Health, providing information on the presence of pesticide residues in the Toronto environment; and
 - (iv) (March 7, 2003) from the Commissioner of Works and Emergency Services, addressed to the Board of Health, the Economic Development and Parks

Committee, and Works Committee, forwarding a joint report (March 7, 2003) from the TIE Pesticides Sub-Committee Co-Chairs, addressed to Toronto Interdepartmental Environment (TIE) Committee, providing an update on the activities of the TIE Pesticides Subcommittee in reducing outdoor pesticide use in Toronto;

- (C) directed that the aforementioned report (March 25, 2003) be forwarded to the Federation of Canadian Municipalities, the Association of Municipalities of Ontario, the Ontario Ministry of the Environment, Health Canada, the Ontario Public Health Association, and the Association of Local Public Health Agencies; and
- (D) directed that the Medical Officer of Health communicate with officials from the Federal and Provincial governments on the importance of preventing the retail sale of pesticides.

The Board of Health submits the following report (March 25, 2003) from the Medical Officer of Health:

Purpose:

To present to the Board of Health a pesticides by-law similar to the Hudson, Quebec by-law, and to report on the experience of other jurisdictions as directed by the Board of Health.

Financial Implications and Impact Statement:

Resources to develop and coordinate pesticide use reduction programs were approved by City Council through the 2003 operating budget process (\$163,500 gross/\$81,800 net, including 1.0 FTE). Preliminary estimates indicate that the additional annualized cost of implementing the proposed by-law would be \$150,000 (gross)/\$75,000 (net) for by-law notification activities, \$200,000 (gross)/\$100,000 (net) for compliance assistance, and \$100,000 (gross)/\$50,000 (net) for complaint response and by-law enforcement, for a total of \$450,000 (gross) /\$225,000 (net) in 2004 and annualized at \$450,000 for 2005.

The request also includes 7 new seasonal (six-month) positions (4 seasonal Public Health Inspectors; 1 seasonal clerk; 2 seasonal Helpline workers) to implement the by-law. This request will be included in the 2004 Toronto Public Health operating budget submission. The Province has yet to confirm 50% funding for this activity.

The Chief Financial Officer and Treasurer has reviewed this report and concurs with the financial impact statement.

Recommendations:

It is recommended that:

- (1) the Board of Health endorse this report and the attached by-law and forward these to City Council for approval;

- (2) the financial implications summarized in Table 2 related to the implementation of the Pesticide By-law be forwarded to the Budget Advisory Committee and then to the Policy and Finance Committee during the 2004 budget process for their consideration;
- (3) the City Solicitor be authorized to prepare and introduce a Bill in Council in the form or substantially in the form of the draft by-law attached to this report as Appendix "A";
- (4) the Board of Health direct the Medical Officer of Health to report back annually on progress made in achieving pesticide use reductions through the implementation and enforcement of the pesticides by-law;
- (5) City Council request the federal Minister of Health to ensure that regulations made under the *Pest Control Products Act* require annual reporting of pesticides sales data, both by active ingredient and by municipality in which the products are sold, in order to facilitate municipal efforts to monitor and evaluate the effectiveness of pesticide use reduction programs;
- (6) City Council request the federal Minister of Health and the provincial Minister of the Environment to expedite programs presently underway to increase public access to reduced-risk pesticides, restrict public access to high-risk pesticides, improve access to information about the safe use of pesticides, and increase co-operative efforts through the Healthy Lawn Strategy in order to reduce reliance on lawn care chemicals;
- (7) City Council request the federal Minister of Health and the provincial Minister of the Environment to include the municipal sector as a partner in the Federal/Provincial/Territorial Committee mandated to provide advice and direction to governments on programs and policies for pesticides with the aim of enhancing sustainable pest control practices;
- (8) City Council request the provincial Minister of the Environment to establish standards for Integrated Pest Management in regulations under the Pesticides Act, and provide that IPM training be required in order to be a licensed exterminator in the Province of Ontario;
- (9) the Board of Health forward this report along with the Medical Officer of Health's report dated November 7, 2002 describing the "Common Ground" strategy to the Works Committee and the Economic Development and Parks Committee for their information;
- (10) the Board of Health forward this report to the Federation of Canadian Municipalities, the Association of Municipalities of Ontario, the Ontario Ministry of the Environment, Health Canada, the Ontario Public Health Association, and the Association of Local Public Health Agencies; and
- (11) the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.

Background:

At its meeting on July 6 2001, the Board of Health asked the Medical Officer of Health to engage in public consultations toward the creation of a strategy to achieve the phase-out of non-essential outdoor use of pesticides. City Council endorsed the Board of Health's request in November 2001.

At the April 2002 Board of Health meeting, the Medical Officer of Health released a technical report and a discussion document to aid public consultation meetings held in May 2002. At the November 2002 meeting of the Board of Health, the Medical Officer of Health made recommendations arising from the consultations with the public and stakeholders pertaining to a strategy to achieve the phase-out of the non-essential outdoor use of pesticides.

At this meeting, the Board of Health directed the Medical Officer of Health to defer implementation of strategy for its April 2003 meeting and directed the Medical Officer of Health to prepare the exact wording of a by-law similar to the Hudson, Quebec by-law upheld by the Supreme Court of Canada to restrict the non-essential outdoor use of pesticides. The Board also requested that the Medical Officer of Health report to the Board on the experience of other jurisdictions with by-laws restricting the outdoor use of pesticides. The Board further directed the Medical Officer of Health to define "non-essential" pesticide use as agreed upon by an expert group of stakeholders convened in the spring of 2002.

This report has been prepared in consultation with City Legal Services, Works and Emergency Services, Parks and Recreation, Economic Development, and Urban Development Services. Prior to preparation of the by-law, the Medical Officer of Health also consulted with stakeholders representing the horticultural, retail, and manufacturing sectors and with stakeholders representing health and environmental non-government organizations.

Comments:

In April 2000 Toronto City Council unanimously adopted the "Environmental Plan" and its recommendations to make Toronto a clean, green and healthy city. Recommendation Seven stated the City's objective to eliminate, where possible, the use of pesticides and to develop a strategy to eliminate pesticide use on private lands. At the time City Council adopted the recommendation, several City departments had already made significant progress in reducing pesticide use. Since then, the Toronto Interdepartmental Environment Committee Pesticide Subcommittee (TIE-PSC) has developed public information campaigns raising public awareness of the health and environmental effects of pesticide use and continues to educate the public about pesticide-free lawn care.

Reducing pesticide use is a long-standing commitment of the City of Toronto. This report reviews how to achieve pesticide use reductions on private property with a Hudson-style by-law supported by notification, compliance assistance and enforcement programs.

(1) Public Support for Pesticide Use Reduction in the City of Toronto

A Toronto Public Health survey of 1,000 residents of Toronto (2002) found strong public support for restrictions on pesticide use in the City. The survey was conducted during the months of September-October, 2002. The executive summary of the survey report is attached as Appendix B. Full copies of the survey report are available from Toronto Public Health.

Compared to the average for the whole city, the survey shows somewhat higher lawn and garden pesticide use in the former municipalities of Etobicoke, Scarborough, York and North York and lower use in the former municipalities of Toronto and East York (see table below).

Table 1. Pesticide Use and Support for By-law by Former Municipality

Former Municipality	East York	Toronto	York	Scarborough	North York	Etobicoke	Average
Used pesticides ¹	27%	28%	41%	42%	42%	50%	38%
Support For By-law (excluding undecided or no answer)	72%	78%	70%	70%	64%	75%	72%

¹ Figures for householders with a lawn who used pesticides at least once during 2001/2002.

The 2002 survey also showed strong support for pesticide use reductions (86%). The survey found that opposition to the concept of pesticide reductions was very low (8%) and that approximately three out of every four respondents were at least somewhat likely to try products and lawn care methods that are alternatives to chemical pesticides. Among respondents with lawns and gardens, 72% of those with an opinion supported a by-law that would restrict pesticide use on private property, i.e. on their own or their neighbour's property.

Public support for a pesticide by-law was generally lower in former municipalities where there was higher than average pesticide use. Etobicoke is the exception, with the highest proportion (50%) of respondents reporting pesticide use on their properties, but also showing higher than average support for a by-law.

(2) Health and Environmental Impacts of Pesticide Use

The report, "Lawn and Garden Pesticides: A Review of Human Exposure & Health Effects Research" (Toronto Public Health, 2002) provided a detailed overview of the health effects literature pertaining to urban use pesticides. The research focused on the health effects associated with the seven lawn and garden pesticides most commonly used in Canada. These are the insecticides diazinon, carbaryl and malathion and the herbicides 2,4-D, mecoprop, dicamba and 4-chloro-2-methylphenoxyacetic acid (MCPA). The report concluded that while the data do not support definitive statements about the risks associated with pesticides, the data do support the position that precaution is warranted. This means that it is advisable that pesticide use be avoided, especially where vulnerable populations may be exposed.

The best evidence for the possible health risk associated with commonly used lawn care pesticides comes from occupational studies (e.g. of agricultural workers and horticulturists) and others who use these same pesticides on the job. These occupational groups are subjected to higher exposures to pesticides than the general population, and researchers are therefore able to make more reliable associations between pesticide exposure and adverse health effects. In recent years, scientists have observed associations between pesticide exposures and adverse effects on reproductive and neurological health, and some forms of cancer. While not all studies show consistent results, a growing body of research suggests that even low levels of pesticides can have a negative effect on human health.

U.S. biomonitoring studies show a widespread presence of traces of some insecticides breakdown products in people's urine, indicating that large portions of the population are routinely exposed to these pesticides. It is reasonable to expect that Toronto's population is similarly exposed.

In the past year, several more studies have been published (see Appendix C). Toronto Public Health continues to monitor the ongoing research examining the questions of exposure and health effects from pesticides. The new studies continue to support a precautionary approach to policy development and prudent avoidance of pesticide exposure. This is especially important where vulnerable populations are involved, including infants, children, pregnant women, people with compromised immune systems and the elderly.

A study recently released by Environment Canada, the Ontario Ministry of the Environment and the City of Toronto Works and Emergency Services (Struger, et al. 2002) provides evidence that pesticides applied for lawn and garden care in the city can move from their site of application into the broader environment, including local streams. Nine pesticides and one pesticide metabolite were detected in the Toronto samples. The most frequently detected pesticides were MCPP (detected in 30% of samples), followed by diazinon (in 29% of samples) and 2,4-D (in 6.6% of samples). It is noteworthy that these three pesticides are commonly used in lawncare. The other pesticides detected (and their frequency of detection expressed as % of total samples in which residues were detected) were atrazine (3.7%), metolachlor (2.0%), des-ethyl atrazine (0.5%), carbofuran (1.5%), and cypermethrin (0.7%).

The extent to which these pesticides adversely impact the aquatic ecosystem in the Toronto area is unknown. However, it is of concern that 20% of the river samples collected in the study contained diazinon at levels exceeding the Ontario Water Quality Objective for the Protection of Aquatic Life (Struger et al., 2002).

The pesticides used in lawn and garden care may also have adverse effects on the terrestrial environment. The full extent of any adverse effects is unknown because of a lack of data on actual pesticide levels in the Toronto environment. In addition to aquatic life, bees, birds and beneficial soil organisms can be harmed by the pesticides used on lawns and gardens. In "Lawn and Garden Pesticides: A Review of Human Exposure and Health Effects Research," (2002) Toronto Public Health summarized some of the existing studies in other jurisdictions that show adverse environmental impacts, particularly to birds and beneficial insect pollinators such as bees.

(3) Federal, Provincial and Municipal Roles Regarding Urban Use Pesticides

In Canada, pesticides are subject to regulation at the federal, provincial and municipal level. The federal government regulates pesticides through the *Pest Control Products Act*. Regulations under this Act require that any pest control product used or manufactured in Canada must be tested and registered with the federal government. In Ontario, the provincial *Pesticides Act* regulates the shipment, sale, application, storage and disposal of pesticides. The Act also regulates pesticide applicators by requiring permits, training, certification and licensing of applicators and sellers of pesticides.

Some Canadian municipalities regulate the use of pesticides through by-laws. These by-laws supplement the federal and provincial regimes by establishing what uses of pesticides are permitted within the municipality and which legally registered pesticides may be used.

(4) A Pesticide By-Law for Toronto

A proposed pesticide by-law for Toronto is attached to this report (see Appendix A). The Board of Health directed the Medical Officer of Health to prepare a by-law “similar to the Hudson, Quebec by-law upheld by the Supreme Court of Canada.” The proposed by-law follows the format of the Hudson by-law by setting out a general restriction on pesticides and then setting out exceptions to the restriction. In other words, the by-law identifies permitted uses of pesticides and permitted pesticide products. The by-law operates in conjunction with all provincial and federal laws applicable to pesticides and their use.

(a) Permitted Pesticides

The proposed by-law permits the use of selected, ultra-low toxicity pest control products. These products provide adequate pest control tools for most of the pest problems that may arise on residential lawns and gardens when used in conjunction with proper lawn care practices. The list of exempted pesticides recognizes that some registered pest control products pose very low or no health or environmental risks. The substances and mechanical methods (sticky media, pheromone traps) on the list were selected either because they are identified as preferred low toxicity pest control products in Integrated Pest Management manuals and organic standards, or they are 'exempt' under the provincial *Pesticides Act*.

The following pesticides are permitted under the proposed Toronto pesticide by-law:

- (i) Insecticidal soaps
- (ii) Dormant or horticultural oils
- (iii) Silicon dioxide (diatomaceous earth)
- (iv) Bt (*Bacillus thuringiensis*), nematodes and other biological control organisms
- (v) Borax, also called boracic acid
- (vi) Ferrous Phosphate
- (vii) Pyrethrum or pyrethrins
- (viii) A product that uses pheromones to lure pests or sticky media to trap pests

(b) Permitted Pesticide Uses

The by-law also enumerates certain permitted uses of pesticides. Many of the permitted uses are directly related to the protection of human health, such as using pesticides to purify water, to disinfect swimming pools, wading pools and spas, to control rodents, to control or destroy a health hazard, and for use as personal insect repellent. Two uses – completely enclosed insecticide baits and treatments injected into trees, stumps and poles – are permitted because of limited exposure risk and the limited risk that the active ingredient will directly enter the environment. To protect the integrity of built structures, the by-law also permits the use of pesticides to control termites and as wood preservatives. Pesticide use is permitted within an enclosed building because indoor pesticide use is beyond the purview of this by-law. However, it is anticipated that as a natural outcome of the by-law, the public will become more aware of the potential effects of pesticide exposures and reduce their indoor use as well.

The following pesticide uses are permitted under the proposed Toronto pesticide by-law:

- (i) To disinfect swimming pools, whirlpools, spas or wading pools;
- (ii) To purify water intended for the use of humans or animals;
- (iii) Within an enclosed building;
- (iv) To control termites;
- (v) To control or destroy a health hazard;
- (vi) To control or destroy pests which have caused infestation to property;
- (vii) To exterminate rodents;
- (viii) As a wood preservative;
- (ix) An enclosed insecticide bait;
- (x) An injected treatment for trees, stumps or wooden poles;
- (xi) To comply with the Weed Control Act; or
- (xii) As an insect repellent for personal use.

The by-law provides that pesticides may be used to control or destroy pests which have caused infestation to property. This recognizes that even well-cared-for properties may become prone to devastating infestations. For example, a chinch bug infestation in a late summer drought can completely destroy a lawn, especially if the household has been practising water conservation. Most other jurisdictions with pesticides by-laws, including Hudson, have drafted or amended their by-laws to provide for pesticide use in the event of an infestation. The proposed by-law for Toronto defines infestation as “the presence of pests in numbers or under conditions which involve an immediate or potential risk of substantial loss or damage.”

The intent of this “exception clause”, is to provide recourse in the event that plant life is threatened. However, in order to ensure that the overall objective of reducing pesticide use is met, the by-law implementation plan will focus on raising public awareness about practices to help prevent serious infestations. These practices include keeping plants (including grass) as healthy as possible by using sound horticultural techniques and by using alternative landscapes that are naturally resistant to pests, such as local plants and ground covers. Public information about the by-law will help people assess when they have an infestation and will also identify the least-toxic methods available to treat infestations.

The proposed by-law, unlike the Hudson by-law, does not provide for permitting or for advance posting of lawns where pesticides will be used, nor will it require reporting of pesticide use to the municipality. Each of these components of the Hudson by-law was given due consideration in the development of Toronto's by-law. However, the resources required to implement any of these components are prohibitive for the City of Toronto. Hudson, Quebec is a town of 4,500 while Toronto is a city of 2.5 million. This difference in scale imposes limits on what the proposed by-law can reasonably require.

The Hudson by-law provides an exemption for agricultural uses of pesticides within the municipality. Such an exemption was not considered to be necessary in the Toronto by-law. There is very little agricultural production within the City, and the few outdoor operations that do exist, such as Community Gardens, are predominantly pesticide-free. Furthermore, food is the dominant route of non-occupational pesticide exposure (Curl, et. al., 2003).

Staff also considered incorporating into the by-law a requirement that any person applying pesticides in the City of Toronto be accredited in Integrated Pest Management (IPM). IPM is a practical approach that ensures pesticides are used only when necessary and only as a last resort. The Integrated Pest Management Council has developed an accreditation program that requires its members to be trained in IPM and audited annually for compliance with IPM principles. However, IPM Accreditation is still in a preliminary stage of development and will apply only to those lawn care companies that voluntarily adopt it. The Medical Officer of Health will continue to monitor the progress of the program, take steps to evaluate its effectiveness in achieving reductions in pesticide use, and report back to the Board of Health when this information is available.

The Board of Health directed the MOH to "define non-essential pesticide use as agreed upon by an expert stakeholders group convened in the spring of 2002." However, it should be noted that the group of stakeholders convened in May 2002 did not reach a consensus on the definition of "non-essential." In any event, the proposed by-law does not define "non-essential" because the object of the Toronto by-law is to reduce all pesticide exposures and the associated health risks. Avoiding or reducing pesticide use for all purposes – 'essential' and otherwise – will best meet this public health objective.

(5) By-law Implementation Plan

It is recommended that implementation of the by-law be phased in over three years as follows:

Year 1 (2003) – Enactment of the by-law with an effective date one year hence. During this one-year window period, TPH will focus on program development, by-law notification and compliance assistance to increase the public's awareness of the by-law, as outlined later in this report.

Year 2 (2004) – This will be the first year the by-law is legally in effect. Activities will continue to focus on notification and compliance assistance programming. Toronto Public Health Inspectors will respond to residents' complaints about possible by-law violations primarily with warnings accompanied by educational material. A framework will be established to evaluate the effectiveness of by-law implementation and related activities in achieving pesticide use reductions in the City of Toronto.

Year 3 (2005) – There will be continued education and progressive enforcement in response to complaints through the issuance of a ticket and/or a summons to court if necessary for those using pesticides in contravention of the by-law.

Table 2. 2004 Budget Estimate to Implement Pesticide By-law

Activity	Gross Amount (2004 Annualized Costs)	Net Amount (2004 Annualized Costs)*
Notification: Advertising (transit, newspaper, outdoor)	\$150,000	\$75,000
Compliance Assistance:		
Helpline Workers (2) – 1 FTE	\$46,500	\$23,250
Workshops (6) \$5,000 each	30,000	15,000
Incentive Program	37,500	18,750
Public Health Inspectors (2) – 1 FTE	71,340	35,670
Print Materials	<u>14,660</u>	<u>7,330</u>
Total	\$200,000	\$100,000
Complaint Response:		
Public Health Inspectors (2) – 1 FTE	71,340	35,670
Clerical Support (1) – 0.5 FTE	21,000	10,500
Materials & Equipment	<u>7,660</u>	<u>3,830</u>
Total	\$100,000	\$50,000
TOTAL:	\$450,000	\$225,000

*Figures assume 50% funding by the provincial government which is still to be confirmed.

The framework for implementation of the by-law builds on four key components: by-law notification, compliance assistance, complaint response and evaluation. The following sections include brief descriptions of each component.

(a) Notification

The proposed by-law would come into effect in April 2004. The public will require notification of the new rules in the period leading up to the by-law coming into effect and on an ongoing basis after that.

Notification activities will include a variety of methods to achieve widespread public awareness of the new rules. These will include announcements to print and television media, advertising on the TTC and in public transit shelters, posting information on the City web site, and distributing information to community centres, public health offices, and public libraries. The City will set up a help-line to assist Toronto residents by providing information about the by-law and to assist them with by-law compliance. It will also be used as a means for residents to report suspected by-law infractions in years 2 and 3.

City staff will be made aware of the pesticide by-law and of how to connect residents to the telephone help-line if they have questions about the new rules.

The resources required to provide public notification of the by-law will likely be greater in the first few years, although notification will always be a necessary component of by-law implementation. In the first year of the by-law (2004), it is estimated that notification will require approximately \$150,000 (gross)/\$75,000 (net).

(b) Compliance Assistance

The basic objective of the by-law is to reduce the risk of health effects associated with exposures to pesticides. This objective is best achieved by providing services to Toronto residents to help them achieve pesticide-free properties and, if they have a pest problem, to help them make the best use of the pesticides permitted under the by-law.

Information will be provided to the public in a variety of forms such as the help line, web pages, workshops, and demonstration projects. These will assist the public in adopting practices such as pesticide-free lawn care or using only permitted pesticides and cultivating alternative landscapes that are naturally resistant to pests. Workshops to inform the public about pesticide-free gardening will be provided in collaboration with Parks and Civic Gardens staff. Information will also be made available to assist the public in understanding when they may have an “infestation” as defined by the by-law and how the infestation may be treated in the least-toxic way. By-law compliance assistance activities will be coordinated with and build on the work of the Toronto Interdepartmental Environment–Pesticide Sub-Committee (TIE-PSC).

In the first year of the by-law (2004), it is estimated that compliance assistance activities will require approximately \$200,000 (gross)/\$100,000 (net).

(c) Complaint Response

Complaint response and enforcement are necessary components of the implementation plan. Responding to public complaints with progressive enforcement (warnings, tickets, summons to court) for violations of the by-law will help establish in the public mind that new rules apply in the City. This will help achieve the overall objective of reducing pesticide use and exposure. It is also important that there be enforcement to provide recourse when there are flagrant or repeat violations.

Enforcement of the by-law will be phased in, with the early stages putting emphasis on notifying the public about the new restrictions and directing them to compliance assistance services. In the first year of enforcement (2004) Toronto Public Health Inspectors (PHIs) will respond to complaints. Where they find signs of non-compliance, they will provide compliance assistance information to people acting in contravention of the by-law. PHIs will receive training in identifying permitted and non-permitted uses of pesticides. Health inspectors will rely on visual evidence and eyewitness testimony in order to enforce the by-law.

It is estimated that resources to deal with the first year (2004) of enforcement would be approximately \$100,000 (gross)/\$50,000 (net).

(d) Evaluation

Also crucial to the implementation of the by-law is a mechanism to show the results of the city-wide effort to reduce the use of pesticides. As mentioned previously, the federal *Pest Control Products Act* will require that sales information for pest control products be reported, once the applicable regulations are in place. It has been recommended in this report that these reports include both the active ingredient and the municipality in which the product is sold. With access to this data, municipalities would have a reasonably clear indicator of the effectiveness of pesticide use reduction programs. Other potential indicators for Toronto are surveys collecting self-reported pesticide use, data from IPM accredited lawn care companies (who must report their annual pesticide use as a condition of their accreditation) and studies monitoring the level of pesticides in Toronto rivers.

Each of these indicators can help build a picture of overall pesticide use reduction, and help to identify the most effective methods for assisting the public to comply with by-law requirements.

(6) Experience of Other Jurisdictions with By-Laws Restricting the Outdoor Use of Pesticides

Pesticide by-laws that apply to private property exist in two other Canadian provinces, Quebec and Nova Scotia. The province of Quebec is particularly active on the issue of pesticides, having recently introduced a bill amending its *Pesticides Act* that will prohibit the use of 28 pesticides in the province.

(a) Quebec By-laws

Pesticide by-laws in 40 Quebec municipalities have been in place for approximately ten years. To one extent or another, they are all similar to the Hudson by-law, with some variation in permitted uses, requirements for signage and so on.

In order to assess the success of the pesticide by-laws in Quebec in achieving reductions in pesticide use, Toronto Public Health staff interviewed municipal staff in Beaconsfield/Baie D'Urfe, Hudson, Westmount and Chelsea. Of these towns, only Beaconsfield produced regular reports on activities related to its by-law. The reports compare the number of permits issued from year to year for use of pesticides in the event of an infestation. However, the number of permits issued does not enable one to determine how many people may have used a pesticide without a permit. Since the Beaconsfield by-law has been amended several times, the number of permits issued in a year may not be an accurate indication of pesticide use reductions in that town.

In Hudson, Chelsea and Westmount, city staff interviewed by TPH all believed that pesticide use reductions had occurred, that residents were developing a preference for alternative methods and products, and that public support for their by-laws was high. Westmount reported that in the first year of its by-law (1994), residents made 100 applications for permits, but the number subsequently declined to approximately 10-15 a year. Hudson reports issuing an average of about 15 permits per year.

None of these three municipalities has, however, done a methodical evaluation of their by-laws, or has studies to support findings of pesticide use reduction.

(b) The Halifax By-law

The Regional Municipality of Halifax is in the third year of a phased-in pesticides by-law. The activities relating to the by-law in its first two years focused on public education and protecting vulnerable populations (pesticide applications were restricted in 50-metre buffer zones around schools, hospitals and properties of persons with medical sensitivities to pesticides). In April 2003, restrictions will apply to all properties in Halifax.

The Halifax by-law exempts low-toxicity pest control products listed in a schedule to the by-law. The exempted pesticides may be used without a permit. The Halifax by-law also permits pesticide applications in the event of insect infestations, or plant infestations that endanger human health. In order to use a non-exempted pesticide to treat an infestation, a person must apply for a permit. Before a permit can be issued, the property must first be inspected. The Regional Municipality does not charge for the permits it issues. At present, the permitting system applies only to "registered" properties. In April 2003, the permitting system will apply everywhere in Halifax.

The first two stages of the Halifax by-law have been supported by a public education campaign, providing information about the by-law itself, and about pesticide-free lawn and garden maintenance. A fall 2002 opinion poll that found that 93% of homeowners surveyed were using mainly alternatives to pesticides (alternative methods or products or both, with limited pesticide use in accordance with the by-law exemptions), compared to only 7% who still used pesticides as their primary mode of pest control. The survey sample size was 400, and of those, 280 were homeowners. A Halifax spokesperson estimates these responses represent a substantial increase in those reporting they used alternatives to pesticides in the two-year implementation period of the by-law.

While the jurisdictions interviewed were all confident that their by-laws had achieved pesticide use reductions, there was only anecdotal evidence to support these claims. At present, other than surveying residents, there are few mechanisms readily available to municipalities that can measure reductions in pesticide use. The new federal *Pest Control Products Act* will require that sales figures for pesticides be reported to the federal Minister. This mechanism has the potential to help meet the needs of municipalities to evaluate the effectiveness of their pesticide by-laws.

(7) Recommendations to Federal & Provincial Agencies to Enhance the Effectiveness of the Toronto By-law

Several existing federal/provincial/territorial programs supporting pesticide use reduction in the urban environment have the potential to enhance Toronto's efforts to reduce pesticide use overall. The leading federal program is Action Plan on Urban Use Pesticides, which includes the Healthy Lawns Strategy. It incorporates several initiatives that are intended to:

- (a) reduce consumer access to higher toxicity products
- (b) provide better point-of-sale information to the consumer about the safe use of pest control products,

- (c) increase the availability of lower- and least-risk products, and
- (d) improve labelling so instructions are easier to follow

Each of these initiatives will make a significant contribution to Toronto's objective of reducing pesticide exposure. The Healthy Lawns Strategy should, however, include the municipal sector in the federal/provincial/territorial partnership. Municipal government is closest to the issue of pesticide use, and, as noted by the Supreme Court of Canada in the Hudson By-Law decision, can move flexibly in response to local needs. The federal Minister of Health should take whatever steps are necessary to include the municipal sector as a partner in the Federal/Provincial/ Territorial Committee mandated to provide advice and direction to governments on programs and policies for pesticides with the aim of enhancing sustainable pest control practices.

The federal initiatives listed above are moving forward very slowly. In the case of faster approvals for least-risk products, pesticide manufacturers have so far made very few applications for reduced-risk urban use pesticides. The federal Minister of Health and the provincial Minister of the Environment should make every effort to expedite these programs and increase co-operative efforts through the Healthy Lawn Strategy to reduce reliance on lawn care chemicals.

Regulations are currently being drafted for the *Pest Control Products Act* that will set out the reporting requirements of pesticide sales. To increase the capacity of municipalities to evaluate the effectiveness of their pesticide use reductions programs, the federal Minister of Health should ensure that the regulations made under the *Pest Control Products Act* require annual reporting of pesticides sales data both by active ingredient and by the municipality in which the products are sold.

The lawn care industry in Ontario is voluntarily adopting an accreditation program for Integrated Pest Management. This is an important effort on the part of industry, but has, as of the time of this report, captured only a fraction of this sector (100 companies out of an estimated 1,300 in the province). Progress in pesticide use reduction has been documented in British Columbia where Integrated Pest Management has been incorporated into regulations under the B.C. *Pesticide Control Act*. The Ontario Ministry of the Environment should enhance pesticide use reduction programmes by establishing standards for Integrated Pest Management in regulations under the *Pesticides Act*, and providing that IPM training be required in order to be a licensed exterminator in the Province of Ontario.

Conclusion:

The findings of the medical research support a policy of prudent avoidance of pesticides. Eighty-six per cent of Toronto residents support reducing the use of pesticides and 72% support a by-law as a way to achieve these reductions. The proposed Toronto pesticides by-law provides exemptions so that a property owner has recourse to use a pesticide product in the event of a serious infestation. The by-law implementation and enforcement plan focuses on ensuring that people will know how to reduce their use of conventional chemical pesticides and avoid infestations on their property. The by-law implementation plan emphasizes public notification of the by-law and compliance assistance through information and complaint response. The implementation plan also proposes that a framework be developed to evaluate the impact of the

by-law in achieving pesticide use reductions in the City of Toronto. Finally, all of Toronto's efforts would be enhanced significantly if the responsible federal and provincial ministries would expedite pesticide use reduction programs and develop regulatory standards for Integrated Pest Management.

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Appendix A

DRAFT BY-LAW

Authority: Board of Health Report No. , Clause No. , as adopted by City of Toronto
Council on

Enacted by Council:

CITY OF TORONTO

Bill No.

BY-LAW No.

To adopt a new City of Toronto Municipal Code Chapter XXX, Pesticides.

WHEREAS environmental protection has emerged as a fundamental value in Canadian society and the common future of every Canadian community depends on a healthy environment; and

WHEREAS the Council of the City of Toronto wishes to respond to the concerns expressed by City residents about health risks associated with the use of pesticides within the City of Toronto; and

WHEREAS avoiding unnecessary exposure to pesticides conforms to the precautionary principle as it applies to the use of pesticides; and

WHEREAS minimizing the use of pesticides will promote the health of the inhabitants of the City of Toronto; and

WHEREAS pesticides used in lawn and garden care are known to enter streams and rivers, which discharge into Lake Ontario, the source of drinking water for the City of Toronto;

WHEREAS under section 130 of the *Municipal Act, 2001*, by-laws may be passed by a municipality to provide for the protection of the health, safety and well-being of residents in the municipality; and

WHEREAS under section 425 of the *Municipal Act, 2001*, by-laws may be passed by a municipality for providing that any person who contravenes any by-law of the municipality, passed under the authority of the *Municipal Act, 2001*, is guilty of an offence;

The Council of the City of Toronto HEREBY ENACTS as follows:

1. The City of Toronto Municipal Code is amended by adding the following chapter:

Chapter XXX

PESTICIDES

§ XXX-1. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

ENCLOSED — Closed in by a roof or ceiling and walls with an appropriate opening or openings for ingress or egress, which openings are equipped with doors which are kept closed except when actually in use for egress or ingress.

HEALTH HAZARD — A pest which has or is likely to have an adverse effect on the health of any person.

INFESTATION — The presence of pests in numbers or under conditions which involve an immediate or potential risk of substantial loss or damage.

PEST — An animal, a plant or other organism that is injurious, noxious or troublesome, whether directly or indirectly, and an injurious, noxious or troublesome condition or organic function of an animal, a plant or other organism.

PESTICIDE — Includes

- A. A product, an organism or a substance that is a registered control product under the federal Pest Control Products Act which is used as a means for directly or indirectly controlling, destroying, attracting or repelling a pest or for mitigating or preventing its injurious, noxious or troublesome effects.
- B. Despite Subsection A, a pesticide does not include:

- (1) A product that uses pheromones to lure pests or sticky media to trap pests.
- (2) A product that is or contains as its only active ingredient any of the following:
 - (a) A soap.
 - (b) A mineral oil, also called dormant or horticultural oil.
 - (c) Silicon dioxide, also called diatomaceous earth.
 - (d) Bt (*Bacillus thuringiensis*), nematodes and other biological control organisms.
 - (e) Borax, also called boracic acid.
 - (f) Ferrous phosphate.
 - (g) Pyrethrum or pyrethrins.

§ XXX-2. Restrictions.

- A. No person shall apply or cause or permit the application of pesticides within the boundaries of the City.
- B. The provision set out in Subsection A does not apply when pesticides are used:
 - (1) To disinfect swimming pools, whirlpools, spas or wading pools;
 - (2) To purify water intended for the use of humans or animals;
 - (3) Within an enclosed building;
 - (4) To control termites;
 - (5) To control or destroy a health hazard;
 - (6) To control or destroy pests which have caused infestation to property;
 - (7) To exterminate rodents;
 - (8) As a wood preservative;
 - (9) As an insecticide bait which is enclosed by the manufacturer in a plastic or metal container that has been made in a way that prevents or minimizes access to the bait by humans and pets;
 - (10) For injection into trees, stumps or wooden poles;

It is recommended that:

- (1) the Board of Health commend the Federal and Provincial Ministers of the Environment, and the Commissioner of Works and Emergency Services, for undertaking a special study on surface water contamination from the use of pesticides in the Toronto area;
- (2) the Board of Health request the Commissioner of Works and Emergency Services, in consultation with the Medical Officer of Health and appropriate staff from Environment Canada and the Ontario Ministry of the Environment, to continue sampling and undertake laboratory analysis in-house of those pesticides commonly detected in Toronto's streams and rivers;
- (3) the Board of Health forward this report to the Works Committee and the Economic Development and Parks Committee for their consideration; and
- (4) the appropriate City Officials be authorized and directed to take the necessary action to give effect thereto.

Background:

At its meeting of November 6, 7 and 8, 2001, City Council discussed a strategy to achieve a phase out of non-essential outdoor uses of pesticides and requested the Medical Officer of Health to submit a report to the Economic Development and Parks Committee on all pesticide use by industry and their effect on the environment. This report was prepared in consultation with staff from Works and Emergency Services, and has been reviewed by staff from Economic Development, Culture and Tourism.

Comments:

Currently, there is no legal requirement for pesticide retailers or pesticide applicators to submit information on pesticide sales or use in Ontario. Consequently, it is not possible to provide an accurate assessment of all pesticide use by industry and the public in Toronto. The recent amendments to the federal Pest Control Products Act will require the submission of pesticides sales data to the Federal Minister of Health in the future. The details of the regulation specifying this reporting requirement are under development and will likely not be in effect until after mid-2004. However, by examining the results of pesticide use surveys and pesticide residue testing in Toronto's streams, it is possible to provide some comments on pesticide use and its potential effects on the aquatic ecosystem in Toronto.

Pesticide Use Surveys:

In 1993, the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) conducted a survey of pesticide users, including professional lawn care applicators, to estimate the total amount of pesticide active ingredients used in Ontario. Ten chemicals accounted for about 95% of the total amount of active ingredients applied by professional applicators (OMAFRA, 1994). The most frequently used lawn care pesticides, in order of decreasing amounts used, were mecoprop (MCP), 2,4-D, dicamba, diazinon, chlorpyrifos and MCPA. Provincial data were not available specifically for Toronto.

Toronto Public Health has conducted two surveys of Toronto residents regarding pesticide issues, including self-reported use of lawn and garden care pesticides by members of the household and/or professional applicators. In the first survey, 341 randomly selected residents participated, each of whom lived in a house with a lawn and was responsible for making lawncare decisions. The majority of telephone interviews were conducted in January 2001. Respondents were questioned on the use of outdoor pesticides at their homes during the previous two-year period (1999 and 2000). The survey indicated that 45% of residential lawns (nearly one in two Toronto lawns) had been treated with chemical pesticides during 1999 and/or 2000. Of the 45% of residential lawns treated with chemical pesticides, 53% were applied by householders, 29% by a lawncare company, and 18% by both the householder and a lawncare company (Toronto Public Health, 2002A).

In a second telephone survey by Toronto Public Health, 1,000 randomly selected residents participated, including those living in apartments. Telephone interviews were conducted during the last week of September and first week of October 2002. Those households (n = 635) with lawns and an opportunity to make garden care choices were asked about the use of outdoor pesticides during the previous two year period (2001 and 2002). This survey indicated that during 2001 and 2002, 38% of residential lawns (or about 2 in 5 lawns) had been treated at least once with pesticides. Of the 38% of pesticide-treated lawns, 50% were treated only by householders, 8% only by a lawncare company, and 42% by both the householder and a lawn care company) (Toronto Public Health, 2002B).

These survey results suggest that while outdoor pesticide use may be declining somewhat in Toronto, pesticide use continues to be a common practice. City staff, primarily from the Health Promotion and Environmental Protection Office (Toronto Public Health), Parks and Recreation (Economic Development, Culture and Tourism) and Environmental Services (Works and Emergency Services) continue to work together to reduce the potential for pesticide run-off into the water system.

Pesticide Residue Testing:

In 1998, Environment Canada, in conjunction with the Ontario Ministry of Environment and Toronto Works and Emergency Services, initiated a special study of the Don and Humber River watersheds to investigate the potential for surface water contamination from the use of pesticides and fertilizers (Struger et al., 2002). An interim report was released in December 2002, based on preliminary findings from sampling conducted during 1998, 1999 and 2000. A final report is under preparation that will include sampling data for 2001.

Works and Emergency Services staff collected water samples from several locations in streams throughout the watersheds in Toronto. A total of 133 samples were collected, 57 during “wet” events after rainfall, and 76 during “dry” periods. The samples were analysed by the University of Guelph’s Laboratory Services Division (under contract for the Ontario Ministry of the Environment), which analyzed for 159 different possible pesticides, including some pesticide metabolites or breakdown products, and some pesticide metabolites (breakdown products). Commonly used urban lawncare pesticides were included in the scan of 159 pesticides analyzed. Nine pesticides and one pesticide metabolite were detected in the Toronto samples. For the other 149 pesticides analysed, they were either not present in the water or occurred at levels below the method detection limit. The most frequently detected pesticides were MCPP (detected in 30% of

samples), followed by diazinon (in 29% of samples) and 2,4-D (in 6.6% of samples). It is noteworthy that these three pesticides are commonly used in lawncare, however, there are also agricultural uses. The other pesticides detected (and their frequency of detection expressed as % of total samples detected in) are atrazine (3.7%), metolachlor (2.0%), des-ethyl atrazine (0.5%), carbofuran (1.5%), and cypermethrin (0.7%). In the case of diazinon, pesticide levels were frequently high enough to exceed the Ontario Water Quality Objective for the Protection of Aquatic Life, however, this was not the case for the other pesticides measured in the Toronto streams.

It is noted that the study authors report their findings based on frequency of pesticide detection, rather than based on average pesticide levels. While this information is useful, it would be even more beneficial to also have data on actual pesticide levels so that changes in pesticide levels can be tracked over time. However, in order to do this, there may be a need to increase the sampling frequency at selected locations.

Although this study can not distinguish precisely between agricultural inputs of pesticides and those arising from other uses such as lawn and garden care, more pesticides were detected at the mouth of the Humber and Don Rivers, and they were detected more frequently, than at less urbanized locations upstream. This suggests that urban inputs of pesticides arising within the City of Toronto contribute to their increased detection downstream. Furthermore, with the exception of MCP (which is used in both agriculture and lawn/garden care), most pesticides were detected more frequently downstream (at the river mouths) than upstream (at the City limits). For example, diazinon (an insecticide used in lawncare) was detected more than twice as often at the mouth of the Don River, compared with the less urbanized upstream sampling location at the city boundary.

Another important finding of the study is that pesticides were detected most frequently, and at highest levels, in samples collected after rain events. The study authors (Struger et al., 2002) suggest that stormwater drainage systems may be conveying pesticides used on lawns in urban areas to the Don and Humber River watersheds, and ultimately into Lake Ontario. The proximity of lawns in Toronto to its storm sewer network provides ample opportunity for pesticide residues to be discharged into the aquatic ecosystem. The study also demonstrated that pesticides were most commonly detected from mid-spring to mid-fall when residential lawn pesticides are in common use, whereas there were very few pesticide detections very early in the spring or late in the fall when these pesticides are typically not applied.

Pesticide Persistence:

There are many factors that influence the quantity of pesticides detectable in the urban environment, including the amount of pesticides applied, the way in which they are applied, the frequency of application, and their persistence in environmental media such as soil and water. Applying pesticides on a routine basis and in a spray formulation, as is common with traditional insect and weed control on lawns and gardens, will result in much higher levels of pesticides in the environment than using integrated pest management (IPM) methods. IPM focuses on preventing pest problems, using pesticides only if really needed, using the lowest toxicity pesticides available, and using them in non-spray formulations (such as baits and pellets) where possible. With spray or aerosol formulations, there is a high probability that much of the pesticide will be dispersed into the general environment and only a portion will reach the target

pest. With baits and pellets applied in a closed environment close to where the pests live, there is much less likelihood that the pesticide will reach non-target organisms.

Chemicals, including pesticides, have inherent differences in how long they persist in the environment before they are degraded. The relative persistence of pesticides can be compared based on their half-life (amount of time it takes to reduce the original pesticide level by 50%). Pesticide half-life values tend to be different in soil and water, as shown in Table 1. Given that common lawn and garden care pesticides can persist in the environment for several weeks, and given that pesticide use is still very common in the city, it is not surprising that pesticide residues are detectable in Toronto’s aquatic environment, despite the large dilution factor resulting from their entry into streams and rivers

Table 1. Half-Life Values of Common Lawn and Garden Care Pesticides (a)

Pesticide	Pesticide Half-life	
	In Soil	In Water
Mecoprop (MCP)	3 weeks	not available
2,4-D	less than 1 week	1 - several weeks
Dicamba	1 - 4 weeks	not available
Diazinon	2 - 4 weeks	12 hours (highly acidic water) 6 months (neutral water)
Chlorpyrifos	9 – 17 weeks	0.5 – 3 weeks (due to volatilization) 3 – 4 weeks (due to photolysis)
MCPA	2 – 4 weeks	About 2 to 3 weeks

(a) Source: Kamrin et al, 1997; Vogue et al, 1994.

As a point of reference, it is of note that methoprene (a low toxicity insect growth regulator) used elsewhere in urban mosquito larviciding programs directed at controlling West Nile Virus has a half life of about 1 to 2 days in water. The use of methoprene for protection against West Nile Virus is consistent with the IPM approach: using pesticides only when really needed; using the lowest toxicity pesticide available; using non-spray formulations; and applying pellets in a reasonably closed environment close to where the pests live.

Implications for Environmental Health:

The Toronto pesticide study provides evidence that pesticides applied for lawn and garden care in the city can move from their site of application into the broader environment, particularly into local streams. The extent to which these pesticides adversely impact the aquatic ecosystem (including the small organisms at the bottom of the food chain) in the Toronto area is not known. However, it is of concern that 20% of the river samples collected in the study contained diazinon at levels exceeding the Ontario Water Quality Objective for the Protection of Aquatic Life (Struger et al., 2002). Diazinon use is expected to decline considerably in the next few years. Diazinon products for outdoor use by the public will be taken off the market at the end of 2003, and commercial lawncare product sales are required to end after 2004. The use of these products will be allowed for one year after the sales are terminated (Struger et al., 2002).

The pesticides used in lawn and garden care may also have adverse effects on the terrestrial environment. The full extent of adverse effects is unknown because of a lack of data on actual pesticide levels in the Toronto environment and their possible terrestrial impacts. In addition to aquatic life, bees, birds and beneficial soil organisms can be harmed by the pesticides used on lawns and gardens (Toronto Public Health, 2002C). In its previous report “Lawn and Garden Pesticides: A Review of Human Exposure and Health Effects Research”, Toronto Public Health summarized some of the existing studies in other jurisdictions that show adverse environmental impacts, particularly to beneficial insect pollinators such as bees, and to birds.

Benefit of Continued Monitoring of Pesticide Residues in Toronto Streams:

Toronto Public Health, in collaboration with other City divisions and departments, continues to promote and facilitate shifts in pesticide use practices among the public and business community to reduce their reliance on traditional chemical pesticides. One reliable indicator of the effectiveness of the City’s strategies to phase out non-essential outdoor uses of pesticides is to monitor pesticide levels in Toronto streams. For this reason, it is recommended that Toronto Works and Emergency Services, in consultation with the Medical Officer of Health and appropriate staff from Environment Canada and the Ontario Ministry of Environment, undertake sampling and laboratory analysis of those pesticides commonly detected in Toronto’s streams and rivers.

While the special study (described in this report) undertaken with Environment Canada and the Ontario Ministry of Environment was a useful screening study that was able to identify which pesticides are present in Toronto-area streams, further pesticide monitoring is not contemplated by these two agencies. Works and Emergency Services have in-house laboratory facilities that can be used to test for pesticides. Staff from Public Health and Works and Emergency Services are working together to identify a suitable list of pesticides to monitor.

It is recommended that the sample collection frequency be increased at the mouth of the Don and Humber Rivers, and at selected upstream locations at the City’s limits, to generate reliable trend data on actual pesticide levels. By increasing the sampling frequency of key pesticides, it will also be possible to better assess the influence of precipitation in conveying pesticides from their site of application into Toronto’s aquatic ecosystem. By sampling for a much smaller number of pesticides and sampling in fewer locations, compared with the special screening study conducted during 1998 through to 2001, it will be possible to redirect limited resources to a more intensive sampling program that best reflect urban pesticide use in Toronto over the next few years.

Conclusions:

Chemical pesticides continue to be in common use for lawn and garden care by residents and professional applicators in Toronto. Although it is not possible to determine the full extent of adverse effects of outdoor pesticide use on the environment, a recent study on pesticide concentrations in the Don and Humber River watersheds provides evidence that urban pesticides are mobile and finding their way into Toronto’s aquatic ecosystem. City staff from all affected departments continue to develop and implement strategies to reduce public and private sector reliance on chemical pesticides. One method to assess the effectiveness of the city’s efforts is to analyse pesticide levels in Toronto streams through the implementation of its pesticide reduction strategy. Consequently, this report recommends that Works and Emergency Services, in

consultation with the Medical Officer of Health, Environment Canada and the Ontario Ministry of Environment, continue sampling and undertake in-house laboratory analysis of those pesticides commonly detected in Toronto's streams and rivers.

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The Board of Health also submits the following report (March 7, 2003) from the Commissioner of Works and Emergency Services, addressed to the Board of Health, the Economic Development and Parks Committee and the Works Committee:

Purpose:

To update the Committees on the activities of the TIE Pesticides Sub-Committee in reducing outdoor pesticide use in the City of Toronto.

Financial Implications and Impact Statement:

There are no financial implications arising from this report.

Recommendation:

It is recommended that this report be received for information.

Background:

At its meeting of December 16-17, 1998, City Council recommended the formation of a Toronto Interdepartmental Environment Pesticides Sub-Committee (TIE-PSC) to assist the Corporation of the City of Toronto in the development of a program to phase out its use of pesticides on public green spaces and to educate residents about reducing their exposure to pesticides. The TIE-PSC meets regularly to discuss strategies and progress made in achieving reductions in outdoor pesticide use on public lands and to develop public educational resources.

At the November 6, 2001 meeting, City Council directed the TIE-PSC to determine public attitudes towards greater restriction on the non-essential outdoor use of pesticides on private

property. The TIE-PSC was also directed to continue to identify alternatives to the outdoor use of chemical pesticides, continue to consult with organic and traditional lawn care companies regarding chemical phase out options and to submit recommended strategies to the Board of Health and other appropriate Standing Committees for consideration. City Council also requested the Medical Officer of Health (MOH) to seek broad input on the nature and scope of a potential pesticides by-law. As the MOH had responsibility for leading the consultation process about a by-law, the TIE-PSC determined their role would be to provide input into the development of the process.

The attached status report summarizes the progress made by the City in reducing pesticide use on public green spaces, the educational efforts of the TIE-PSC and comments on Toronto Public Health's consultation process on strategies to reduce outdoor use of pesticides in Toronto. The status report has been reviewed by the Economic Development, Culture and Tourism Department, the Medical Officer of Health and the Works and Emergency Services Department. The membership of the TIE-PSC has been attached as Appendix A.

Comments:

The City of Toronto has achieved significant reductions in pesticide use on City owned lands since 1999 and have maintained, and in some cases improved upon the reductions. City staff will continue to promote plant health care principles and explore alternatives to chemical pesticides.

Contact:

Barry Gutteridge
Commissioner of Works and Emergency Services
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(A copy of Appendix A to the foregoing report was forwarded to all Members of the Board of Health with the agenda for its meeting on April 7, 2003, and a copy is on file in the office of the City Clerk, North York Civic Centre.)

The Board of Health also submits the following report (March 7, 2003) from the Co-Chairs, TIE Pesticides Subcommittee, addressed to the TIE Committee:

Purpose:

The purpose of this report is to provide an update on the activities of the TIE Pesticides Sub-Committee in reducing outdoor pesticide use in Toronto.

Financial Implications and Impact Statement:

There are no direct financial implications arising from this report.

Recommendations:

It is recommended that:

- (1) the Commissioner of Works and Emergency Services as Chair of TIE ensure that all City Divisions are made aware of the City policy to phase out pesticide use on public green spaces and report their pesticide use to TIE on an annual basis; and
- (2) the appropriate City Officials be authorized and directed to take the necessary action to give effect thereto.

Background:

At its meeting of December 16-17, 1998, City Council recommended the formation of a Toronto Interdepartmental Environment Pesticides Sub-Committee (TIE-PSC) to assist the Corporation of the City of Toronto in the development of a program to phase out its use of pesticides on public green spaces and to educate residents about reducing their exposure to pesticides. The TIE-PSC was convened in March 1999 and last submitted a status report in March 2000. The committee meets on a regular basis to discuss strategies and progress made in achieving reductions in outdoor pesticide use on public lands and to develop public educational resources. The committee is comprised of city staff from Toronto Public Health (TPH), Economic Development, Culture and Tourism (EDCT), Works & Emergency Services (WES) and community members with expertise and commitment to reduce pesticide use. It is co-chaired by senior staff from TPH and EDCT (Parks and Recreation Division).

At the November 6, 2001 meeting, City Council considered a report from Toronto Board of Health (BOH) regarding the capacity of a municipality to regulate the non-essential outdoor use of pesticides. Council directed the TIE-PSC to determine public attitudes towards greater restriction on the non-essential outdoor use of pesticides on private property. The TIE-PSC was also directed to continue to identify alternatives to the outdoor use of chemical pesticides, continue to consult with organic and traditional lawn care companies regarding chemical phase out options and to submit recommended strategies to the Board of Health and other appropriate Standing Committees for consideration.

In addition, City Council directed the Board of Health and Toronto City Council to establish a Reference Group of Board members, Councillors, city staff and community representatives to engage in public consultation and provide input to the TIE-PSC. City Council also requested the Medical Officer of Health (MOH) to seek broad input on the nature and scope of a potential pesticides by-law. As the MOH had responsibility for leading the consultation process about a by-law, the TIE-PSC determined their role would be to provide input into the development of the process. Toronto Public Health concluded the consultation in October 2002 and reported the results of the process to the Board of Health at the November 18, 2002 Board of Health meeting.

This report summarizes the progress made by the City in reducing pesticide use on public green spaces, the educational efforts of the TIE-PSC and comments on Toronto Public Health's consultation process on strategies to reduce outdoor use of pesticides in Toronto.

Comments:

- (a) Pesticide Phaseout Efforts on Public Green Spaces

EDCT (Parks and Recreation Division) and WES (Technical Services Division) have led the implementation of the city policy to phase out its use of pesticides on public green spaces. Parks and Recreation has achieved significant reductions in pesticide use since the policy was implemented in 1999. These reductions have been maintained, and in some cases improved upon since then. They have shared their expertise with others in the Corporation and subsequently WES has developed a workplan to phase out use on its public green spaces.

Phaseout Initiatives on Parks Greenspaces

Parks and Recreation utilizes Integrated Plant Health Care (IPHC) as its basic approach to parkland maintenance. IPHC is a multi-disciplinary approach to greenspace management. It effectively integrates an understanding of living systems, urban stresses, human needs and horticultural principles in developing maintenance solutions that are environmentally sound, healthy and sustainable.

An IPHC strategy prioritizes overall plant health and is made up of the following 3 components:

- Plant Health Care as the primary approach involving the largest resource expenditure;
- Investigation of alternatives to traditional chemical pesticides in an attempt to manage pests without chemical pesticides;
- Integrated Pest Management (IPM) as the methodology to manage pests, as a small but important component of the overall parks maintenance program.

(See appendix A for a description of these components.)

Currently, Parks & Recreation has two full-scale demonstration sites (Earlscourt Park and Sunnybrook Park) that focus on plant health care practices and the prevention of pests. These sites are useful both in terms of informing maintenance practices on City parkland, as well as training and educational sites for staff, other City Departments and ABC's and the community in general.

Earlscourt Park is in its third year of the program and results to date have been excellent. The demonstration at Earlscourt involves the complete organic treatment (fertilizer, compost topdressing) combined with cultural practices on one of the two "high profile" soccer fields. Turf quality measured in terms of cover and density has improved to the point that weed cover is only about 5% of the field meaning that chemical herbicides would not be required.

The field has also shown improved resistance to stress caused by continuous play. As soil health improves and natural fertility becomes sustainable, it has also been possible to reduce fertilizer inputs. A community garden has been in operation for the last few years and a sunflower garden was planted last year.

Sunnybrook Park is in its second year as a demonstration site. Complete organic treatment is being employed on several of the sports fields. This approach combined with sound, standard cultural practices is showing the potential of providing a high quality turf-playing surface without the application of pesticides.

Weed control in parkland, particularly dandelions in general parkland, remains as a major challenge and as a primary source of complaint from the public. 2,4-D, the most common,

effective pesticide used to control dandelions, has generally not been employed in City parks since 1999. Several pilot projects (Sugar Beet Extract, Corn Gluten Meal and Aquacide) have been initiated on City parkland to evaluate the performance of alternatives to chemical pesticides in order to address this concern.

Sugar Beet Extract was tested as an organic means of broadleaf weed control in turf, based upon claims by the manufacturer that this material would control weeds especially dandelion and plantain. Field trials conducted in 2002 produced very disappointing initial results. Costs for both purchasing and applying this product were also found to be prohibitive, when considered for application to general parkland – the area where weed infestation is the biggest challenge. Additional testing will be conducted in 2003.

Corn Gluten Meal works by suppressing the development of new weeds by inhibiting seed germination. A trial conducted on a sports field in 2002 indicated that it was effective in controlling knotweed. Existing research suggests that corn gluten meal can suppress weeds (especially crabgrass). While these results are encouraging, they do not address the need to control broad-leafed weeds, primary dandelions, in turf. Full-scale trials using corn gluten meal to suppress weeds will continue in 2003 with particular emphasis on evaluating its effectiveness on dandelions. It should be noted that corn gluten meal is valuable as an organic fertilizer and soil enhancement product in addition to any weed suppression qualities it may have.

Aquacide treatment involves killing weeds using super heated water delivered much as a pesticide would be. A study compared the performance of Aquacide to the chemical herbicide glyphosate (brand name “Round-Up”) for the control of weeds in hard surfaces such as patios. Although results vary with the type of weed and time of year of application, the field study indicated that, in general, Aquacide required from two to three times the resource expenditure than would glyphosate to achieve the same level of weed control.

Parks and Recreation addressed corporate training needs by organizing two half-day seminars on plant health care and pesticide use reduction presented by international acclaimed author Carole Rubin. Participants included City of Toronto staff and ABC’s, private industry, community garden groups, horticultural societies and natural environment volunteer groups.

In 2002, Council funded a full time Program Standards and Development Officer to supervise the development and implementation of the Integrated Plant Health Care Program in Parks & Recreation. Roles include staying abreast of current research and development of training manuals and seminars for staff that can be exported across the corporation. For example, an IPM checklist will be developed as a user friendly tool facilitating the proper decision making process inherent in IPM, with the intention of reducing and eliminating unnecessary pesticide application.

Pesticide reduction efforts on Parks greenspaces are a working model for other Departments. In the process of implementing their program, WES further refined the model and is undertaking a pro-active role in implementing their pesticide use reduction program, beginning with data collection in 2002.

Phaseout Initiatives on WES Greenspaces

WES began implementing a workplan to phase-out the use of chemical pesticides on WES green spaces in 2002. WES has many facilities and locations that require greenspace management, including lawn and turf areas at Fire and Emergency Medical Service stations, Water and Waste water plants, Works yards, landfill sites and boulevards. As part of the pesticide phaseout workplan, WES consulted with the Parks and Recreation Division for advice on pesticide reduction strategies that had been previously undertaken by the division on public green spaces. From the discussion with Parks and Recreation it was recognized that direction from Senior Management would result in a more effective strategy to be implemented for a chemical pesticide phase-out.

In December 2002, Senior Managers of the operating divisions were provided with background information on the pesticide reduction strategy and appointed a representative from their respective operating division to join the WES Pesticide Reduction Project Team. The role of the representatives was to:

- Compile a list of WES owned/managed facilities within their respective division;
- Distribute pesticide usage forms and facilitate information collection;
- Assist with the development and implementation of the pesticide phase-out program.

The first WES Pesticide Reduction Project Team was convened in January 2002 to introduce the project to the Operating Divisions and to inform representatives of their responsibilities. Data collection began soon after the first meeting in January including the development of a comprehensive list of WES properties and facilities where greenspace is managed or facilitated by the department. This initial step of identifying the locations and facilities where lawn maintenance is undertaken by City staff or contracted out by WES was an extensive and valuable step to the phase-out strategy. Unlike the Parks and Recreation Division, WES did not have a comprehensive list of facilities or locations where green space management is required, as green space management is not the core business of WES.

The next step in the process was the data collection phase of chemical pesticide use. The WES Pesticide Reduction Project Team representatives were responsible for identifying which locations or facilities from the newly created comprehensive list had chemical pesticides applied in the 2001 and 2002 season. This task proved to be challenging as many different city staff and contractors are responsible for the maintenance of green space and the application of chemical pesticides on WES properties. The information from 2001 and 2002 has been collected and is currently being verified and analyzed. Once analyzed, the data will form the baseline for the chemical pesticide phase-out to be developed by the WES Pesticide Reduction Project Team and reported on later in 2003.

WES and Parks and Recreation staff are working together to further pesticide reduction strategies within their departments and throughout the Corporation with several joint projects. Preliminary work has begun in the following areas:

- Standardization of data collection forms for pesticide use for the entire City;
- Centralized database management for all pesticide use on city property;
- Development of green space maintenance contractor specifications integrating IPHC principles;

- Design and deliver workshops to Parks and WES staff responsible for green space maintenance, with an emphasis on IPHC and alternatives to chemical pesticides.

It is recommended that these activities be supported through TIE and it be the mechanism by which pesticide use statistics across the corporation are compiled.

(b) Education and Communications

The TIE-PSC formed a work group to focus on education and communications. Committee members include staff from TPH, Parks and Recreation and WES as well as community members. The objective of the Communications Work Group (CWG) is to assist residents in making informed decisions about outdoor pesticide use with the goal of reducing their exposure to pesticides. Key messages include public health and environmental effects related to pesticide use and achieving pesticide reductions through sustainable gardening maintenance practices, including using alternatives to pesticides.

The CWG developed a graphic identifier and slogan for the pesticide reduction campaign in 1999. The slogan “Work with nature and nature works with you. Reduce Pesticides” is the message promoted in “The Green Guide to Healthy Lawn” brochures, pesticide-free lawn signs, the City of Toronto web pages and lawn telephone information line.

In 2001 and 2002, the work group distributed over 200,000 copies of the Green Guide brochure through the public libraries, community centres, community health centres and at events such as Canada Blooms, the City of Toronto’s Environment Days, the Enviro Fest and at Toronto Public Health’s pesticide by-law public consultation meetings. The group also mailed the brochure to veterinarians, family physicians and daycare centres. For 2003, the CWG plans to distribute widely across the City, 50,000 revised copies of the brochure. The Green Guide has been used by other Ontario municipalities as the basis of their educational material.

Pesticide-free lawn signs are available, free, on request for residents. The signs provide an opportunity for neighbours to discuss pesticide reduction in their neighbourhoods. WES provides a Composting Helpline and the Lawn Improvement Helpline to assist the public who have questions about improving their lawns with compost and other chemical-free alternatives.

The City’s web site includes a new pesticide portal page that organizes information so that users can learn about growing a healthy lawn without pesticides. The web pages offer information about the health effects of pesticides and about Toronto's pesticide reduction strategy including the drafting of a potential pesticide by-law. People can read about what the City is doing to phase out pesticides use in City parks and green spaces and its plans to reduce or eliminate pesticides in rivers, streams and Lake Ontario as part of the stormwater pollution program.

Advertising is key in educating the community about reducing pesticide use. WES, in collaboration with the Communication Work Group, led two major advertising campaigns in 2001 and 2002. They placed ads in the large circulation and community newspapers, bus shelters, TTC (interior transit) and OMG garbage bins. The 2001 ads portrayed a lady bug with the message, “Let your lawn grow naturally, don’t use pesticides.” They developed a new look for the 2002 campaign with 2 different visuals, a flamingo and a garden gnome, with the key message “Using too many pesticides?”

Communication activities for 2003 build on the work to date. Advertising plans include renewed promotion of the flamingo and gnome campaign and a new ad in the City's TO FUN Guide. Toronto Public Health has dedicated a staff to expand the outreach program to the community. The program will make use of the opportunities to build on other municipal initiatives. The work group is investigating the possibility of partnering with a water audit pilot program in WES in which educational material and advice will be delivered door-to-door. Community workshops/events are planned to promote healthy lawn care practices, including an event to highlight Earlscourt pesticide free demonstration site. Parks and Recreation are considering an award program for pesticide free gardens. The CWG will also explore opportunities to promote point of purchase educational material with pesticide retailers.

(c) Public Attitudes: Comments on Toronto Public Health's Public Consultation Process

The TIE-PSC was directed by Council to determine public attitudes towards greater restrictions on the non-essential outdoor use of pesticides and to recommend strategies to the Board of Health and other appropriate Standing Committee for consideration. Toronto Public Health had responsibility for leading the consultation process on a potential pesticides by-law and as such the TIE-PSC determined their role would be to provide input into the development of the process.

Toronto Public Health's year-long consultation process consisted of two stakeholder meetings, six public meetings, access to an on-line comment page, review of letters/emails and a City-wide telephone survey. Members of the TIE-PSC received presentations from TPH staff and were invited to participate in the stakeholder/public meetings. Members provided input on all aspects of the process. The Reference Group also provided comment on the public consultation process, including the survey and their feedback was considered by the TIE-PSC.

The TIE-PSC members reviewed the reports generated by the independent external consultants who recorded the results of the consultation meetings and conducted the telephone survey on behalf of TPH. There is agreement that the reports accurately reflect the input received at the meetings and on the whole, members of the TIE-PSC agree the survey methodology was appropriate and the findings were reliable.

The TIE-PSC has diverse representation including city staff, environmental non-governmental organizations and the lawn care industry. This mixed membership made it difficult to achieve consensus on the best mechanism (education or a by-law) by which to phase-out outdoor pesticide use in Toronto. For this reason, it was not possible to recommend strategies to restrict outdoor use of pesticides. However, almost all of the TIE-PSC members agreed that TPH's public consultation process was fair, comprehensive and inclusive of the diverse public and stakeholders views.

Conclusions:

There has been substantial progress made in reducing pesticides on City-owned lands and educating the public. Continued promotion of plant health care principles and exploration of alternatives to chemical pesticides will aid further pesticide reductions on city lands. In addition, public and staff education should continue to promote alternative practices to chemical pesticides.

EDCT (Parks and Recreation Division) and WES (Technical Services Division) have embraced the city policy to phase out pesticide use on public green spaces and other city departments and agencies, boards and commissions are encouraged to follow their lead. Departments are encouraged to make use of the expertise in these lead divisions in phasing out their use of pesticides.

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Monica Campbell
TIE Pesticides Sub-Committee Co-Chair

Arthur Beauregard
TIE Pesticides Sub-Committee Co-Chair

List of Attachments:

Appendix A: Integrated Plant Health Care Strategy Components

(A copy of Appendix A to the foregoing report was forwarded to all Members of the Board of Health with the agenda for its meeting on April 7, 2003, and a copy is on file in the office of the City Clerk, North York Civic Centre.)

The Board of Health also had before it the following communications:

- (i) (March 19, 2003) from Anne Hansen;
- (ii) (March 31, 2003) from Laurel Harrison, Member, Hamilton Coalition on Pesticide Issues;
- (iii) (April 1, 2003) from Susan Koswan, on behalf of Get Rid of Urban Pesticides;
- (iv) (April 1, 2003) from Dorothy McGuigan;
- (v) (April 1, 2003) from Lesley Forrester;
- (vi) (April 2, 2003) from Carol Frilegh;

- (vii) (April 2, 2003) from Molly Inglis;
- (viii) (April 2, 2003) from Luciano Martin, Executive Director, Action to Restore a Clean Humber;
- (ix) (April 3, 2003) from Carol Frilegh;
- (x) (April 3, 2003) from Nigel Tappin;
- (xi) (April 3, 2003) from Nigel Tappin;
- (xii) (April 4, 2003) from Martin Mostert;
- (xiii) (April 4, 2003) from Mike Christie;
- (xiv) (April 4, 2003) from Sinead Rafferty; and
- (xv) (April 7, 2003) from Donna Buck.

The Medical Officer of Health gave a brief presentation

The following persons appeared before the Board of Health in connection with the foregoing matter:

- Janet Kasperski, R.N., Ontario College of Family Physicians;
- Kathleen Cooper, Canadian Environmental Law Association;
- Representative, Women's Environmental Health Network;
- Barbara Camm;
- Marlene Thompson;
- Bailey Myleville, Great Lakes United;
- Michael O'Sullivan, Humane Society of Canada;
- Gideon Forman, and submitted a written brief;
- Michael Goldman, Structural Pest Management Association of Ontario;
- Janet May, Pesticides-free Ontario;
- Sarah Climenhaga;
- Tony Di Giovanni, Landscape Ontario;
- Helen Martin;
- Kyle Tobin, Lawnsavers Plant Health Care;
- Don Dankowich, Scarborough Weedman;
- Darcy Olds, Urban Pest Management Council of Ontario;
- Liz White, Animal Alliance and Environment Voters;
- Dan Passmore, Frechette Lawncare;
- Jill Fairbrother, Scotts Canada, and submitted a written brief;
- Bruce Lofquist, International Institute of Concern for Public Health;
- Debra Conlon, Urban Pest Management Council, and submitted a written brief;
- Lorne Hepworth, Crop Life Canada;

- Lorraine Van Haastreht;
- Ryan Van Haastreht;
- Carlo DeFrancesca, Professional Lawncare Association of Ontario;
- Lee Ratcliffe, obo Professional Lawncare Assoc of Ontario;
- Patrick O'Toole, Landscape Ontario, and submitted a written brief;
- Neil Tucker, Nutri-Lawn;
- Teri Yamada, Royal Canadian Golf Association, and submitted a written brief;
- Lillie Ann Morris, and submitted a written brief;
- Doug Counter;
- Ben Langer, and submitted a written brief; and
- Katrina Miller, Toronto Environmental Alliance.

(City Council at its meeting on May 21, 22 and 23, 2003, had before it, during consideration of the foregoing Clause, the following communication (April 30, 2003) from the City Clerk:

Recommendations:

The Works Committee advises Council of its support for the proposed Pesticide By-law attached to the report dated March 25, 2003, from the Medical Officer of Health, subject to the following amendments:

- (1) amending Section 1, "Definitions", subsection B(1) to read "A product that uses pheromones to lure insect pests, sticky media to trap insect pests and 'quick-kill' traps for vertebrate species considered 'pests' such as mice and rats";*
- (2) amending Section 1, "Definitions", subsection B(2) as follows:*
 - (i) changing the preamble to the list to read "A product that is or contains any of the following active ingredients";*
 - (ii) changing "Ferrous phosphate" to "Ferric phosphate";*
 - (iii) adding fatty acids and sulphur to the list of products;*
 - (iv) changing "horticultural vinegar" to "Acetic acid"; and*
 - (v) changing the definition of "Borax" to read "Borax, also called boric acid or boracic acid"; and*
- (3) amending Section 2, "Restrictions", subsection B(7) to read "To exterminate or repel rodents".*

The Works Committee reports, for the information of Council, having established a working group comprised of Councillors Irene Jones, Laura Jones, Gloria Lindsay Luby and Peter Li Preti to consider enforceability issues, the definition of "infestation", public education issues and ways to ease the transition to the Pesticide By-law for lawn care companies and the public, and to report directly to Council if further amendments are recommended; such working group to receive administrative assistance from Public Health.

Background:

The Works Committee at its meeting on April 30, 2003, had before it a communication (April 9, 2003) from the Secretary, Board of Health, advising that the Board of Health at its meeting on April 7, 2003, among other things, directed that the following reports, along with Appendix A, B, and C contained in the Medical Officer of Health's report dated November 7, 2002, describing the "Common Ground" strategy, be forwarded to the Works Committee and the Economic Development and Parks Committee for their information, and with a request that they consider holding a joint meeting and to submit their comments with respect to this matter directly to Council for its meeting on May 21, 2003, for consideration with Board of Health Report No. 3, Clause No 1:

- (i) (March 25, 2003) from the Medical Officer of Health, presenting a pesticides by-law similar to the Hudson, Quebec by-law, and reporting on the experience of other jurisdictions as directed by the Board of Health;*
- (ii) confidential report (March 7, 2003) from the City Solicitor, providing comment on the proposed Pesticides By-law, such report to be considered in-camera having regard that the subject matter relates to solicitor/client privilege;*
- (iii) (March 18, 2003) from the Medical Officer of Health, providing information on the presence of pesticide residues in the Toronto environment; and*
- (iv) (March 7, 2003) from the Commissioner of Works and Emergency Services, addressed to the Board of Health, the Economic Development and Parks Committee, and the Works Committee, forwarding a joint report (March 7, 2003) from the TIE Pesticides Sub-Committee Co-Chairs, addressed to the Toronto Interdepartmental Environment (TIE) Committee, providing an update on the activities of the TIE Pesticides Sub-Committee in reducing outdoor pesticide use in Toronto.*

The Committee also had before it the following communications:

- (i) (April 25, 2003) from Ms. Helen Hansen and Mr. Robert Hansen, Toronto, Ontario;*
- (ii) (April 28, 2003) from Ms. Carole Rubin, Sechelt, British Columbia;*
- (iii) (April 28, 2003) from Ms. Lucy Segatti, Toronto, Ontario;*
- (iv) (undated) from Mr. Steve Lawson, First Nations Environmental Network of Canada;*
- (v) (April 29, 2003) from Ms. Lorraine Johnson, Toronto, Ontario;*
- (vi) (April 29, 2003) from Ms. Jane Greenley, Toronto, Ontario, and submitted a petition from approximately 271 persons requesting City Council to pass a by-law to restrict non-essential pesticide use;*
- (vii) (April 29, 2003) from Mr. Martin Mostert, Willowdale, Ontario;*

- (viii) *(April 29, 2003) from Chris Benjamin, Community Resources Coordinator, Greenest City Environmental Organization;*
- (xi) *(April 29, 2003) from Ms. Krystyn Tully, Executive Director, Lake Ontario Waterkeeper;*
- (x) *(April 23, 2003) from the City Clerk advising that the Task Force to Bring Back the Don at its meeting held on March 26, 2003, recommended the adoption of the draft Pesticide By-law as submitted by the Board of Health, with refinements; and*
- (xi) *newsletter filed by Dr. Bob Frankford.*

The following persons appeared before the Committee in connection with the foregoing matter:

- *Mr. Ken Galley;*
- *Mr. Gideon Forman, and filed a submission with respect thereto;*
- *Ms. Sari Merson;*
- *Mr. Dan Passmore;*
- *Councillor Erin Shapero, Town of Markham;*
- *Mr. Douglas Counter, and filed a submission with respect thereto;*
- *Mr. Kevin Mercer, Executive Director, RiverSides Stewardship Alliance;*
- *Ms. Lorraine Van Haastrecht;*
- *Mr. Patrick O'Toole, and filed a submission with respect thereto;*
- *Mr. John Ladds, Turf Management Systems, and filed a submission with respect thereto;*
- *Mr. Kyle Tobin;*
- *Mr. Chris Lemcke, Co-Chair, ECO - Economic Coalition of Ontario;*
- *Mr. Bailey Mylleville, Great Lakes United;*
- *Ms. Mercedes Perez, Sierra Legal Defence Fund, and filed a submission with respect thereto;*
- *Ms. Yvonne Howard;*
- *Mr. Gavin Dawson, Technical Manager, Greenspace Services;*
- *Ms. Debra Conlon, Urban Pest Management Council;*
- *Mr. Lorne Hepworth, Croplife Canada;*
- *Mr. Michael Goldman, Purity Pest Control Ltd.;*
- *Mr. Ted Paul, Delesco Weed Control;*
- *Mr. Ken Pavely, Landscape Ontario;*
- *Dr. Hilary De Veber, Partnership for Pesticide Bylaws, and filed a submission with respect thereto;*
- *Mr. Michael O'Sullivan, Humane Society of Canada;*
- *Ms. Shelley Petrie, Toronto Environmental Alliance;*
- *Ms. Susanne Capone;*
- *Ms. Christina Sharma;*
- *Ms. Andrea Dawber, Friends of Dovercourt Park;*
- *Mr. Roger Mongeon, President, Weedman Scarborough;*
- *Ms. Jill Fairbrother, Director of Stakeholder Relations, Scotts Canada;*
- *Mr. Bill Shane;*
- *Ms. Kim Levis;*
- *Mr. Mark Hathaway;*
- *Mr. Bob Freestone, Weedaway;*

- *Mr. Andrew Schulz;*
- *Ms. Mary Margaret McMann;*
- *Mr. Bruce Lofquist, International Institute of Concern for Public Health;*
- *Mr. Paul Muldoon, Canadian Environmental Law Association;*
- *Ms. Lorraine Johnson;*
- *Ms. Donna Anderson;*
- *Ms. Karen Buck, President, Citizens for a Safe Environment, and submitted a communication with respect thereto;*
- *Ms. Janet May, Pesticides Free Ontario;*
- *Mr. Ben Langer;*
- *Mr. Darcy Olds; and*
- *Mr. David Hanna, and filed a submission with respect thereto.)*

(City Council also had before it, during consideration of the foregoing Clause, the following communication (May 6, 2003) from the City Clerk:

Recommendations:

The Economic Development and Parks Committee reports having:

- (1) recommended to Council that consideration of the proposed Pesticide By-law be deferred until 2004 to allow staff from Public Health, Parks and Recreation and the Landscape Industry to meet and report back to the Economic Development and Parks Committee, such report to include clear definitions and enforcement measures;*
- (2) directed that the following motions be forwarded to Council for information, noting that such motions were not voted on by the Economic Development and Parks Committee:*
 - (a) the reports be received until such time as evidence is provided that pesticides causes cancer and/or the Federal Health Ministry removes pesticides from store shelves;*
 - (b) the report (March 25, 2003) from the Medial Officer of Health, be adopted, as endorsed by the Works Committee:*
 - (i) as a balanced approach that will support pesticide reduction efforts while allowing for use where valuable green assets are threatened by pests;*
 - (ii) acknowledging that the pesticide by-law may have positive economic and social impacts by improving the health of Toronto's streams and rivers; and*
 - (iii) acknowledging that the pesticide by-law will result in reducing involuntary exposure to pesticides in the general population which may have positive impacts on the immediate and long-term health of the public, especially children;*
 - (c) request that the Board of Health, at its meeting of May 12, 2003, request City Council to defer this matter until the Board has further considered the definition*

of infestation and has further addressed issues related to implementation and enforcement;

- (d) a Monitoring and Audit Committee be established, composed of representatives from Parks and Recreation, Toronto Public Health and the landscape industry, to track progress on an annual basis and to measure outcomes achieved in meeting the two-year pesticide reduction targets; and*
- (e) an aggressive education campaign be undertaken regarding appropriate use of pesticides in the City of Toronto.*

Background:

The Economic Development and Parks Committee at its meeting held on May 5, 2003, had before it a report (April 24, 2003) from the Commissioner of Economic Development, Culture and Tourism, reporting on the impact of the proposed pesticide by-law which restricts the use of pesticides; and recommending that:

- (1) the Commissioner of Economic Development, Culture and Tourism, in compliance with the City Council direction of 1999 to eliminate the non-essential use of pesticides on public green space and the proposed Pesticide by-law, continue to apply, where possible, the principle of prudent avoidance in the use of pesticides on City park land with on-going field trials of non-chemical pest control and an integrated plant health care program;*
- (2) the Commissioner of Economic Development, Culture and Tourism, in consultation with the Toronto Interdepartmental Environment (TIE) Pesticides Sub-Committee, define levels of pest infestation whereby limited use of pesticides may be implemented to preserve the City's valuable green infrastructure;*
- (3) Council endorse a balanced approach towards the reduction of the use of pesticides within the City, guided by the following principles:*
 - (i) all pesticides are dangerous and harmful;*
 - (ii) pesticides can be used safely if administered properly;*
 - (iii) the limiting of pesticides shall not contribute to the further deterioration of our public spaces and City-owned property;*
 - (iv) private property owners have a right to keep their lawns free from unwanted weeds and noxious plants;*
 - (v) in some instances, pesticides are the only way in which to address lawn care problems; and*
 - (vi) any solution to improve and reduce the use of non-essential pesticides must be both practical and affordable to property owners; and*

- (4) *the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.*

The Economic Development and Parks Committee reports having received the following reports/communications, copies of which are on file in the office of the City Clerk:

- (a) *(April 9, 2003) from the Secretary, Board of Health, advising that the Board of Health at its meeting on April 7, 2003, among other things, directed that the following reports, along with Appendix "A", "B" and "C" contained in the Medical Officer of Health's report dated November 7, 2002 describing the "Common Ground" strategy, be forwarded to the Works Committee and the Economic Development and Parks Committee for their information, and with a request that they consider holding a joint meeting and to submit their comments with respect to this matter directly to Council for its meeting on May 21, 2003, for consideration with Board of Health Report No. 3, Clause No 1:*
- (i) *(March 25, 2003) from the Medical Officer of Health, presenting a pesticides by-law similar to the Hudson, Quebec by-law, and reporting on the experience of other jurisdictions as directed by the Board of Health;*
- (ii) *confidential report (March 7, 2003) from the City Solicitor, providing comment on the proposed Pesticides By-law, such report to be considered in-camera having regard that the subject matter relates to solicitor/client privilege;*
- (iii) *(March 18, 2003) from the Medical Officer of Health, providing information on the presence of pesticide residues in the Toronto environment; and*
- (iv) *(March 7, 2003) from the Commissioner of Works and Emergency Services, addressed to the Board of Health, the Economic Development and Parks Committee, and Works Committee, forwarding a joint report (March 7, 2003) from the TIE Pesticides Sub-Committee Co-Chairs, addressed to Toronto Interdepartmental Environment (TIE) Committee, providing an update on the activities of the TIE Pesticides Sub-Committee in reducing outdoor pesticide use in Toronto;*
- (b) *(April 3, 2003) from Councillor David Miller addressed to Councillor Joe Mihevc, Chair, Board of Health, forwarding an e-mail from Councillor Allan Elgar, the Local and Regional Councillor for Ward 4 in Oakville, regarding a pesticide ban in Oakville;*
- (c) *(April 8, 2003) from Ms. Trish Murphy, Resident, in support of a strong pesticide by-law in Toronto;*
- (d) *(April 23, 2003) from the City Clerk, advising that the Task Force to Bring Back the Don, at its meeting held on March 26, 2003, recommended to the Works Committee and the Economic Development and Parks Committee the adoption of the draft Pesticide By-law as submitted by the Board of Health, with refinements;*
- (e) *(April 28, 2003) from Ms. Carole Rubin, in support of the proposed pesticide by-law;*

- (f) *(April 29, 2003) from Ms. Lorraine Johnson, in support of the proposed pesticide by-law;*
- (g) *(April 29, 2003) from Chris Benjamin, Greenest City Environmental Organization, in support of the proposed pesticide by-law;*
- (h) *(May 2, 2003) from Mr. Douglas M. Smith B.Sc., O.T.TESL, in support of the proposed pesticide by-law;*
- (i) *(May 1, 2003) from Ms. Judy Midgley, Board Member, Thompson Orchard Community Association, in support of the proposed pesticide by-law;*
- (j) *(May 1, 2003) from Mr. Andrew McCammon, Chair, Friends of The Don East, in support of the proposed pesticide by-law;*
- (k) *(May 1, 2003) from Mr. David Orsini, in support of the proposed pesticide by-law;*
- (l) *(May 2, 2003) from Mr. Mark Wilson, Chair, Don Watershed Regeneration Council, in support of the proposed pesticide by-law;*
- (m) *(May 1, 2003) from Mr. Mitchell Levine, President, BIO-Lawn Ltd., in support of the proposed pesticide by-law;*
- (n) *(April 29, 2003) from Ms. Krystyn Tully, Executive Director, Lake Ontario Keeper, in support of the pesticide by-law;*
- (o) *(May 4, 2003) from Ms. Mary-Margaret McMahon, in support of the proposed pesticide by-law;*
- (p) *(May 5, 2003) from Mr. Kim Galley, in support of the proposed pesticide by-law; and*
- (q) *(May 5, 2003) from Dr. Regina Agbayani, Albion-Kipling Medical Centre, in support of the proposed pesticide by-law.*

The following persons appeared before the Economic Development and Parks Committee in connection with the foregoing matter:

- *Councillor Allan Elgar, Local and Regional Councillor for Ward 4, Oakville, and filed a copy of his submission;*
- *Dr. Milton Tenebein, and filed a copy of his submission;*
- *Mr. Carlo DeFrancas, Director, Professional Lawn Care Association of Ontario;*
- *Mr. Gus Dalianis, Resident;*
- *Ms. Shannon Coombs, Canadian Consumer Speciality Products Association, and filed copies of pest control pamphlets;*
- *Mr. Dan Passmore; President, Frechette Lawncare;*
- *Mr. Mike Grey, Davey Tree Expert Co. of Canada;*
- *Mr. Patrick O'Toole, Landscape Ontario, and filed a copy of his submission;*
- *Mr. Kyle Tobin, LawnSavers Plant Health Care Inc., and filed a copy of his submission;*

- *Mr. Chris Lemcke, Scarborough Weedman, and filed a copy of his submission;*
- *Mr Gavin Dawson, Greenspace Services;*
- *Mr. Tony DiGiovanni, Landscape Ontario;*
- *Mr. Chuck Beach, Vice President, Technical Support, S.C. Johnson;*
- *Ms. Darlene Litman, Resident;*
- *Mr. Douglas Counter, and filed a copy of his submission;*
- *Mr. Gideon Forman, and filed a copy of his submission;*
- *Ms. Kathleen Cooper, Partnership for Pesticide By-laws, and filed a copy of her submission;*
- *Ms. Teri Yamada, Managing Director, Golf Programs and Services, Royal Canadian Golf Association;*
- *Ms. Barbara Keenan, Resident;*
- *Mr. Raymond Carriere, National Chairman, Communities in Bloom;*
- *Ms. Sari Merson, and filed a copy of her submission;*
- *Mr. Michael Goldman, President, Structural Pest Management Association of Ontario;*
- *Ms. Christina Sharma, and filed a copy of her submission;*
- *Mr. Paul Gasbar, Resident;*
- *Mr. Bill Shane, Resident;*
- *Mr. Roger Mongeon, President, Weedman Scarborough;*
- *Ms. Cheryl Shour, Healthy Homes Services Inc;*
- *Mr. Steve Hallard, Cedarbrae Golf and Country Club;*
- *Mr. Paul Muldoon, Executive Director, Canadian Environmental Law Association, and filed a copy of his submission;*
- *Mr. Paul Sienna, Donalda Golf Club;*
- *Ms. Leigh Gibbons, Resident;*
- *Mr. Ted Paul, Delesco Weed Control;*
- *Mr. Lech Sobun, Organic Landscape Alliance;*
- *Ms. Janet May, Pesticide Free Ontario;*
- *Ms. Lorraine Van Haastrecht;*
- *Ms. Deborah Conlon, Urban Pest Management Council of Canada, and filed a copy of her submission;*
- *Mr. Ken Cousineau, Canadian Golf Superintendent Association (CGSA);*
- *Mr. Lorne Hepworth, Croplife Canada;*
- *Ms. Catrina Miller, Toronto Environmental Alliance, and filed a copy of her submission;*
- *Ms. Jill Fairbrother, Scotts Canada, and filed a copy of her submission;*
- *Mr. Ben Langer, Resident;*
- *Mr. Ken Pavely, Landscape Ontario;*
- *Councillor Sandra Bussin, Ward 32 Beaches-East York;*
- *Councillor Joe Mihevc, Ward 21 St. Paul's;*
- *Councillor Frances Nunziata, Ward 11 York South-Weston; and*
- *Councillor Sherene Shaw, Ward 39 Scarborough-Agincourt.*

*(Report dated April 24, 2003,
addressed to the Economic Development and Parks Committee
from the Commissioner of Economic Development, Culture and Tourism.)*

Purpose:

To report on the impact of the proposed pesticide by-law which restricts the use of pesticides.

Financial Implications and Impact Statement:

There are no financial implications resulting from the adoption of this report.

Recommendations:

It is recommended that:

- (1) the Commissioner of Economic Development, Culture and Tourism, in compliance with the City Council direction of 1999 to eliminate the non-essential use of pesticides on public green space and the proposed Pesticide by-law, continue to apply, where possible, the principle of prudent avoidance in the use of pesticides on City park land with on-going field trials of non-chemical pest control and an integrated plant health care program;*
- (2) the Commissioner of Economic Development, Culture and Tourism, in consultation with the Toronto Interdepartmental Environment (TIE) Pesticides Sub-Committee, define levels of pest infestation whereby limited use of pesticides may be implemented to preserve the City's valuable green infrastructure;*
- (3) Council endorse a balanced approach towards the reduction of the use of pesticides within the City, guided by the following principles:*
 - (a) not all pesticides are dangerous and harmful;*
 - (b) some pesticides can be used safely if administered properly;*
 - (c) the limiting of pesticides shall not contribute to the further deterioration of our public spaces and City-owned property;*
 - (d) private property owners have a right to keep their lawns free from unwanted weeds and noxious plants;*
 - (e) in some instances, pesticides are the only way in which to address lawn care problems; and*
 - (f) any solution to improve and reduce the use of non-essential pesticides must be both practical and affordable to property owners; and*
- (4) the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.*

Background:

At its meeting of November 6, 7 and 8, 2001 City Council had before it Report No. 7 of the Board of Health: "Strategy to Achieve a Phase Out of Non-essential Outdoor Uses of Pesticides" and directed the Commissioner of Economic Development, Culture and Tourism to report on the

impact of the report's recommendations, including the cost of enforcement as a result of introducing a by-law which would restrict the use of pesticides on private property.

At its meeting of March 27, 2002, the Economic Development and Parks Committee requested the Commissioner of Economic Development, Culture and Tourism to include the following in the impact report: "That a balanced approach be adopted in the reduction of pesticides, guided by the following principles: (a) not all pesticides are dangerous and harmful; (b) some pesticides can be administered safely if administered properly; (c) the limiting of pesticides shall not contribute to the further deterioration of public spaces and City-owned property; (d) private property owners have a right to keep their lawns free from unwanted weeds and noxious plants; (e) in some instances, pesticides are the only way in which to address lawn care problems; and (f) any solution to improve and reduce the use of non-essential pesticides must be both practical and affordable to property owners." The report was received by City Council at its meeting of April 16, 17 and 18, 2002, and was referred back to the Economic Development and Parks Committee for further consideration.

At its meeting of April 30, 2002, the Economic Development and Parks Committee directed that the impact report include the results of an economic impact study on City businesses such as golf courses, as well as on private businesses, such as landscape companies. The impact report would also consider a forum to gather input by residents and other interested parties. This recommendation was received by City Council as Clause No. 10(b) of Report No. 5 of The Economic Development and Parks Committee at its meeting held on May 21, 22 and 23, 2002.

At its meeting of April 7, 2003 the Board of Health considered a report from the Medical Officer of Health entitled "Proposed Pesticide By-law". This report was referred to the Economic Development and Parks Committee meeting of May 5, 2003.

Comments:

Impact of Proposed By-law on Parkland

The proposed pesticide by-law has been examined within the context of parks maintenance and pest management practices currently in place and the impact of continued, formalized pesticide restrictions on the maintenance standard and state of good repair of City parkland.

The by-law includes mechanisms to achieve the objective of prudent avoidance of pesticides while allowing the use of designated low- and least-toxic pest control products. In addition, the proposed by-law allows for the use of pesticides to "control or destroy pests which have caused infestations to property". Infestation is defined as: "the presence of pests in numbers or under conditions, which involve an immediate or potential risk of substantial loss or damage."

This clause allows the use of pesticides on City-owned parks, golf courses, sports fields and horticultural displays where substantial loss or damage could occur without the use of pesticides, and where alternatives at reasonable costs are not available.

The enforcement of the by-law is dependent on how the definition of "infestation" is interpreted by enforcement officers. It is, therefore, possible that the by-law could restrict pesticide use to the point where parkland is negatively impacted and where weeds might threaten the viability of the landscape and its utility value to the public.

The spirit of the by-law appears to be on the reduction, not elimination, of pesticides and as such, should not negatively impact upon current maintenance programs or service levels in City parks. However, it is important that the Commissioner of Economic Development, Culture and Tourism, in consultation with the TIE Pesticides Sub-Committee, define levels of pest infestation whereby limited use of pesticides may be implemented to preserve the valuable green infrastructure.

By-law Enforcement Costs

The Medical Officer of Health provided a preliminary estimate of enforcement costs in her report of April 7, 2003 to the Board of Health.

Forum for Residents and Interested Parties

In 2002, Toronto Public Health, with the assistance of the Toronto Interdepartmental Environment Pesticides Sub-Committee, hired an independent communications firm, the Lura Group, to conduct significant stakeholder and public consultation. Review of the public record of this consultation process indicated that a broad range of public and interest groups was represented and that a correspondingly broad range of diverse and divergent positions and concerns were expressed and recorded. Given the thoroughness of this process, another forum for public and interested parties was not undertaken. In addition, residents and interest groups have the opportunity of deputing before the Board of Health, the Economic Development and Parks Committee and the Works Committees.

Economic Impact Study

The proposed pesticide by-law will have direct economic impacts for lawn care service providers, pesticide manufacturers, property owners (residential, industrial and commercial), and the City, and indirect impacts on tourism and other business sectors that benefit from having attractive public and private spaces within the City.

In 2000, households in the City of Toronto spent about \$46 million on horticultural and property maintenance services. This estimate includes snow and garbage removal costs, as well as lawn care costs, since many property maintenance businesses provide a variety of seasonal services. These companies are in the business of providing lawn care and other property maintenance services, not pesticides. However, pesticides are one of the tools the industry uses to achieve a satisfactory result for its clients at a reasonable cost. The lawn care industry is aggressively adopting an integrated pest management approach that involves training and certification of service providers. IPM is a program that focuses on planning and managing green spaces to prevent organisms from becoming pests. The IPM approach recognizes that in some instances, the use of pesticides for lawn care is appropriate, but treatment is used only when required and when no alternatives at reasonable costs are feasible. This approach eliminates unnecessary pesticide use while maintaining a quality appearance. The Landscape Ontario Horticultural Trades Association has initiated an IPM Accreditation Program. In the short term, this program will likely result in increased costs for training, labour and equipment. In the longer term, costs should be expected to stabilize at a somewhat higher level than currently, reflecting a higher quality of service.

Households within the City of Toronto spent about \$7.5 million purchasing pesticides in 2000. Any initiatives to reduce pesticide use within the City would directly reduce this expenditure. These reductions may be partially offset by residents purchasing low- and least-toxic pesticide products.

Pesticides are also used for a variety of other purposes such as algae control in swimming pools, wood preservatives, dog collars and various other indoor uses. Because these uses are not restricted in the proposed by-law, pesticide sales for these purposes will not be impacted.

It is also important to note that under the federal Pest Control Products Act, a pest control product or pesticide is defined as any 'product, organism or substance that is manufactured, represented, distributed or used as a means for directly or indirectly controlling, destroying, attracting or repelling a pest or for mitigating or preventing its injurious, noxious or troublesome effects'. This broad definition covers a wide range of products that vary from low risk, low toxicity soaps for home lawn care to higher risk products for agricultural uses. A managed approach to reducing the use of higher toxicity products should accelerate the development and approval of low risk, low toxicity products. This is already an ongoing process, but, like most research and development projects, is costly and takes time. It is important the rapid reduction of pesticide products be accompanied by public or private sector efforts to maintain and enhance research and development funding towards alternatives. In the long term, the development of new environmentally friendly products would benefit the industry, the City and its residents and businesses. This approach is also consistent with the objective of reducing the potentially harmful effects of pesticides while maintaining attractive public and private green spaces within the City.

Like the City of Toronto, individual property owners must also address this dual objective of reducing the use of potentially harmful pesticides while maintaining attractive lawns. A review of lawn care service company promotional materials, including their web sites, indicates that chemically based lawn service cost in the range of \$150.00 to \$300.00 annually. Organic lawn care service fees range from \$235.00 to \$300.00, based on a 2,500 square foot property. The available information is not sufficient to compare the results achieved by these alternative methods. However, it is generally accepted that homeowners should expect to pay somewhat higher fees for organic lawn care to achieve the same quality of result. While the additional cost (up to \$115.00 per year) is not excessive, the economic consequences are not uniform across all residents and may be difficult for some homeowners to absorb. Reductions in the use of pesticides may also require increased household expenditures for other garden products, such as grass seed, flowers, shrubs and trees, associated with pesticide-free gardening.

There are also many property owners who maintain their own properties and may apply pesticides as part of their procedures. Property owners use pesticides to control weeds, insects, mould, mildew and other fungi growth on walkways and driveways (e.g. between interlocking bricks) as well as lawns. Some of these homeowners, some seniors for example, may not be able to weed their lawns by hand or apply other physically demanding lawn care and property maintenance techniques. Although not readily quantifiable, there is a cost – in terms of quality of life and enjoyment of place – to individuals and the community associated with not maintaining private homes and business properties when, for reasons of economics or physical infirmity, an individual cannot employ alternatives to pesticides to maintain their property.

The proposed by-law seeks to strike a balance between reducing pesticide use and ensuring the City's and property owners valuable assets are preserved and enhanced. The most significant potential costs to the City, its residents and businesses, if pesticide use in the City were completely banned, may be the indirect costs resulting from serious deterioration of our parks, open spaces, public areas, and private homes and businesses within the City. The City of Toronto places great value on aesthetics and quality of place for the enjoyment of its residents, businesses and visitors. The Official Plan adopted by Council and recently approved by the Province, identifies 'beauty' as one of its basic principles and calls for a Campaign for Creating Beautiful Places to improve a key area of our quality of life. The Plan recognizes that people want to live and businesses choose to invest in beautiful cities. Toronto's extensive park system, open spaces and tree-lined streets are key elements of the City's infrastructure. The proposed by-law recognizes and seeks to preserve these fundamental local values. It is important, however, that non-pesticide alternatives be adequately resourced. If pesticide use is reduced, but alternative methods are not implemented for financial or other reasons, one of Toronto's unique, competitive assets will deteriorate.

History of Pesticide Reduction on City Parkland

Council Direction and Support

In response to City Council's direction, Parks and Recreation achieved an initial 97 percent reduction in the use of pesticides on general parkland in 1999 (as compared to 1998). However, parks have experienced a dramatic rise in weeds, particularly dandelions, as funding was not available for full implementation of alternatives including Integrated Plant Health Care. Unusual weather patterns over the past few years, including unprecedented high temperatures and prolonged periods of drought, possibly associated with climate change, have exacerbated this situation. In addition, weeds have significantly increased in shrub beds and on hard surfaces such as patios, pathways and under bleachers, as insufficient human resources exist to manually remove the weeds.

In 2002, the addition of an Integrated Plant Health Care Program Standards and Development Officer and funding for the purchase of alternative pest control products contributed to an expansion of Integrated Plant Health Care and Pest Management. Several pilot projects were undertaken, primarily on sports fields. The park maintenance recommendations included in this report reflect practices that are proven effective medium and long-term solutions to environmentally friendly parks maintenance.

Parks and Recreation have submitted prior requests for \$1,475,000.00 of ongoing operational funding to improve plant health care and increase both turf, horticulture and general maintenance service levels. Due to ongoing budget constraints, only \$325,000.00 in one-time funding and \$150,000.00 in additional base funding has been approved to date.

This funding only begins to address the staffing, materials and equipment needed to ensure that parkland is maintained in an environmentally friendly manner and to an acceptable service level. Parks and Recreation recognizes the benefits of reducing pesticide use. However, it is essential that the resources necessary to implement Integrated Plant Health Care be provided in order to maintain parkland to an acceptable standard.

Integrated Plant Health Care

Proactive Plant Health Care involves the implementation of sound horticultural practices grounded in plant and soil science that maximize the health, durability and stress resistance capability of plants. Integrated plant health care provides the means to achieve the dual objective of maintaining a beautiful City while adhering to the objective of the by-law to significantly reduce pesticide use. For example, Integrated Plant Health Care in turf management includes aerating, over-seeding, fertilizing with organic based products and use of bio-stimulants. These products and procedures stimulate and enhance soil life and health, improve the soil's capability to support grass, resulting in very healthy turf over a period of time.

Alternative (non-chemical) pest and weed controls include products such as Corn Gluten Meal fertilizer, which support healthy grass growth while effectively deterring the development of new weeds. Corn Gluten Meal, however, is not very effective in reducing or controlling existing weeds. Horticultural vinegar formulations are available to control weeds on hard surfaces, but are not useful for grassed areas. Other alternative procedures to control weeds on hard surfaces include the use of super heated water with commercially available machines such as the "Aquacide" and infrared heat devices.

Turf Maintenance

Maximum results in controlling weeds in turf are achieved through the growth of healthy dense turf, which in itself represents a high quality service level. Implementation of Integrated Plant Health Care, as described above, ensures a healthy dense turf over a period of time. Implementation of Integrated Plant Health Care across the approximately 3,500 hectares of grassed areas across the City would ensure an acceptable service level, as well as preserve this valuable green asset in a sustainable manner.

Horticultural Displays

The long-term solution to weeds in annual, perennial or shrub beds is to implement redesign and installation as required for beds (or portions of beds); implement a routine plant health care program, and utilize weed control alternatives such as weed suppressant fabrics and mulch. This would ensure the absence of weeds as well as facilitate beautiful, healthy shrub beds.

Irrigation

Implementation of automatic irrigation systems would assist Parks and Recreation in achieving a higher level of maintenance and service in City parks with a low impact on the operating budget. Currently, in many parks, staff water horticultural beds, newly planted trees and turf areas manually placing sprinklers and hoses. Installation of automatic systems permits watering schedules to be adhered to and ensures that plants receive the correct amount of water which can be easily adjusted in response to weather patterns. Such a system will improve plant health, enhance service levels and free staff to perform other work.

Conclusions:

The proposed pesticide by-law is a balanced approach that will support pesticide reduction efforts while allowing for use where valuable green assets are threatened by pests. There is a need to define “infestation” levels clearly in order to ensure a consistent approach wherein pesticides are used on a careful, limited basis where required to preserve valuable park and green infrastructure within the City.

In 1999, City Council provided a clear direction to Parks and Recreation to limit, reduce and eliminate, where possible, the use of pesticides in City parks. Council also provided additional limited funding towards this aim: \$325,000.00 in one time funding for equipment over 2000 and 2001 and \$150,000.00 to the base operating budget in 2002 to begin implementation of an Integrated Plant Health Care program. However, it is clear that the impact of prolonged drought (perhaps arising through climate change), inadequate financial support of Plant Health Care programs and the implementation of pesticide reductions has been negative on the overall quality, utility and aesthetics of City parkland.

Parks and Recreation is committed to reducing pesticide use while providing high quality parks maintenance. A 97 percent reduction in pesticide use on general parkland has been achieved and maintained since 1999. Additional funding provided by City Council has been put to effective use, resulting in a high-level on-going maintenance standard at our sports fields and golf courses. Initial funding provided for implementation of an Integrated Plant Health Care program has resulted in a solid base of expertise and a tool kit of methodologies that can be extended across all City parks. Implementation of Integrated Plant Health Care across the city is dependent on the availability of additional resources.

Implementation of an Integrated Plant Health Care program as outlined in this report will achieve a high quality level of turf and horticultural bed maintenance, including the significant reduction of undesirable weeds. Implementation of a capital improvement program to install irrigation systems in City parks would enhance parks maintenance and service standards with a small impact on the operating budget.

Contact Names:

Ms. Claire Tucker-Reid, General Manager, Parks and Recreation, Telephone: 416-392-8182, Fax: 416-392-8565, Email: ctucker@toronto.ca;

Ms. Brenda Librecz, Managing Director, Economic Development, Telephone: 416-397-4700, Fax: 416-395-0388, E-mail blibrecz@toronto.ca.)

(City Council also had before it, during consideration of the foregoing Clause, communications received from the following:

- (1) (April 23, 2003) from Teri Yamada, Managing Director, Royal Canadian Golf Association, Golf Programs and Services, National Director, RCGA Green Section, Ontario Allied Golf Associations;*
- (2) Form letter signed by 12 members of the Scarborough Golf and Country Club in response to the ban on the use of pesticides;*
- (3) (April 30, 2003) from Martin Mostert;*
- (4) (May 5, 2003) from Donald N. Bester;*
- (5) (April 8, 2003) from Albert Roffey;*
- (6) (April 10, 2003) from Jill Fairbrother, Director of Stakeholder Relations, Scotts Canada;*

- (7) (April 28, 2003) from Charles Caccia, MP, Davenport;
- (8) (May 1, 2003) from Mitchell Levine, President, BIO-Lawn Limited;
- (9) (May 6, 2003) from John Purdy, Technical Registration Manager, Environmental Fate, Syngenta Crop Protection Canada Inc.;
- (10) (May 7, 2003) from Caroline deVries;
- (11) (May 8, 2003) from J. Paul Lamarche;
- (12) (May 9, 2003) from Kevin Comacchio, Kingcal Properties and Maintenance Inc.;
- (13) (May 9, 2003) from Joyce and Raymond Edge;
- (14) (May 9, 2003) from Debbi Lund, The Tree Doctors;
- (15) (May 10, 2003) from Ian and Tricia Macintosh;
- (16) (May 12, 2003) from David Leuschner;
- (17) (May 12, 2003) from Aneesa Patel;
- (18) (May 12, 2003) from Paola Ardiles;
- (19) (May 12, 2003) from Ardis Harriman;
- (20) (May 12, 2003) from Antoniette Brisbois;
- (21) (May 12, 2003) from Susan Isbister;
- (22) (May 12, 2003) from Martin Sieg;
- (23) (May 13, 2003) from Patricia Williams;
- (24) (May 13, 2003) from Pedro A. Gutierrez;
- (25) (May 9, 2003) from Shannon Coombs, Vice President, Canadian Consumer Specialty Products Association;
- (26) (May 14, 2003) from Marianne Fiorenza;
- (27) (May 14, 2003) from Joan Dubros;
- (28) (May 14, 2003) from Joan Edge;
- (29) (May 14, 2003) from Gerry Brouwer;
- (30) (May 15, 2003) from Susan Martyn;
- (31) (May 15, 2003) from Sabrina Bianco;
- (32) (May 15, 2003) from Bill Catlender;
- (33) (May 15, 2003) from Joelle Stromberg;
- (34) (May 15, 2003) from Ruth Mechanicus;
- (35) (May 15, 2003) from K.C. Holland;
- (36) (May 16, 2003) from Pierre Bertsoulakis;
- (37) (May 15, 2003) from Donald Lamont;
- (38) (May 19, 2003) from Mike Christie;
- (39) (May 16, 2003) from Catherine Teng;
- (40) (May 18, 2003) from Marianne K. Packer;
- (41) (May 18, 2003) from Nancy Weiler;
- (42) (May 19, 2003) from Dr. Brian N. Silver;
- (43) (May 20, 2003) from John Cartwright, President, Toronto and York Region Labour Council;
- (44) (May 20, 2003) from Stephen A. Wilson;
- (45) (May 20, 2003) from Gilbert and Madeleine Fadel;
- (46) (undated) from Karen Holyi;
- (47) (May 20, 2003) from Norma Coole;
- (48) (May 20, 2003) from Marilyn Belec Bittman;
- (49) (May 14, 2003) from Donald R. Good, Barrister & Solicitor;
- (50) (undated) from The Professional Lawncare Association of Ontario;
- (51) (undated) from Robert S. W. Campbell;

- (52) *(May 20, 2003) from Robert Desjardins;*
- (53) *(May 15, 2003) from Joe Bazarkewich, President, Cedar Brae Golf and Country Club, attaching a petition, containing approximately 134 signatures;*
- (54) *(May 14, 2003) from Doris Grinspun, Executive Director, Registered Nurses Association of Ontario (RNAO);*
- (55) *(May 15, 2003) from Martha A. Healey, Ogilvy Renault, Barristers & Solicitors;*
- (56) *(April 14, 2003) from Janice Hopkins, Director, Alternative Strategies and Regulatory Affairs Division, Pest Management Regulatory Agency, addressed to Debra Conlon, CropLife Canada;*
- (57) *(undated) from Caine Holyj;*
- (58) *(undated) from Milton Tenenbein, M.D., Professor of Pediatrics and Pharmacology, University of Manitoba;*
- (59) *(May 21, 2003) from Katalin Schafer;*
- (60) *(May 21, 2003) from Jack Berger;*
- (61) *(May 14, 2003) from Kathleen Cooper, Researcher; Theresa McClenaghan, Counsel; and Paul Muldoon, Executive Director and Counsel, Canadian Environmental Law Association;*
- (62) *(May 20, 2003) from Debra Conlon, Executive Director, Urban Pest Management Council of Canada;*
- (63) *(May 13, 2003) from Chris Sadler, President, St. George's Golf and Country Club;*
- (64) *(May 16, 2003) from John W. Gravett, Manager of Golf Operations and Superintendent, Granite Golf Club;*
- (65) *(May 21, 2003) from Peter Cantley, Vice President, Floral Shops and Garden Centres, Loblaw Companies Ltd.;*
- (66) *(May 22, 2003) from Jill Fairbrother, Director of Stakeholder Relations, Scotts Canada;*
- (67) *(May 22, 2003) from Debra Conlon, Urban Pest Management Council of Canada;*
- (68) *(May 19, 2003) from Charin Rivet;*
- (69) *(May 22, 2003) from Howard Mains, TACTIX Government Consulting Inc.;*
- (70) *(May 17, 2003) from Chris Nelson, Markland Wood Country Club, attaching a petition, containing approximately 80 signatures; and*
- (71) *(May 22, 2003) from Carol Seglins, Mayor, Town of Caledon.)*

(City Council also had before it, during consideration of the foregoing Clause, a confidential report (March 7, 2003) from the City Solicitor, such report to remain confidential, in its entirety, in accordance with the provisions of the Municipal Act, having regard that it contains information which is subject to solicitor/client privilege.)