CITY OF BURLINGTON

COMMUNITY SERVICES DIVISION

Roads and Parks Maintenance Department

Report Number:	RPM 6/02	**Report Date:**	January 30, 2002

Author's Name(s):	B. Adriaans	**Date to Committee:**	February 12, 2002
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File Number(s) #:	795-11	**Report Name and Location:**	

TO: **Chair and Members of the Community & Corporate Services Committee**

SUBJECT: **UPDATE ON THE CITY OF BURLINGTON TURF MANAGEMENT PROGRAM: Reducing Pesticide Use on Municipally-owned Green Spaces**

1.0 RECOMMENDATION:

THAT Report RPM 6/02 providing an update on the City of Burlington Turf Management Program related to Reducing Pesticide Use on Municipally-owned Green Spaces, be received, and;

THAT the City of Burlington eliminate the use of pesticides on municipally-owned properties as of 2003 except as follows:

- at the Lawn Bowling Green
- at Greenwood Cemetery
- at Tyandaga Municipal Golf Course
- and in special situations as outlined in Report RPM 6/02.

And that a Public Education and Communications Program be developed and implemented for the general public and shared community organizations (i.e. sports groups) outlining the practices and issues associated with the elimination of pesticides on municipally-owned property.

EXECUTIVE SUMMARY:

N/A

2.0 BACKGROUND:

Council, at its meeting held on Monday March 26, 2001, approved Report RPM 03/01 (being Item CC-71-01-1). The report outlined the City of Burlington's turf management strategies to achieve the objective of pesticide reduction over time and concluded that staff are confident they can design site specific detailed programs necessary to achieve this goal.

After the June 28, 2001, Town of Hudson Quebec decision by the Supreme Court of Canada, Council at their regular meeting held on Tuesday, August 7, 2001, approved the following recommendations (being Item CC-188-01):

> "*THAT in light of the Supreme Court of Canada decision upholding the Hudson, Quebec by-law concerning pesticide use, the Director of Roads and Parks Maintenance be directed to report back to Council in the Fall of 2001 with a report outlining issues and options surrounding the reduction or elimination of pesticide use within the City of Burlington on public and private property; and*
>
> *THAT such report propose a process complementary to the Region of Halton's work in this area and allow for comprehensive public input prior to a final resolution; and*
>
> *THAT the Director of Roads and Parks Maintenance report, as soon as possible, on the feasibility of a prohibition of any pesticide spraying on private property during smog alert days."*

Report RPM 13/01 has dealt with issues arising from the above recommendations, concluding that a City-wide plan for public green spaces needs to be developed prior to the creation of a policy or by-law related to pesticide use on private property. The Healthy Green Spaces Steering Committee Report (#D&I 01/02), submitted concurrently with this report, includes a draft strategy on a City-wide healthy green spaces plan, and will deal with the issue of pesticides on private property. What follows will deal with the turf grass component of the City's owned green space and will outline options and issues surrounding the elimination of pesticide use on such areas.

3.0 DISCUSSION:

Overview

For some time now, the City has been committed to reducing pesticides on the public green spaces that it maintains. Currently, staff have the option of applying pesticides on playing fields and in emergency/hazardous situations. With a commitment to a program of cultural practices in place, staff recommends in this report that scheduled pesticide applications be suspended on playing fields by 2003. Limited spot applications are anticipated for non-irrigated sports turf in 2002 to eradicate weeds and provide a more expedient transition to a cultural practices program.

Report RPM 03/01 outlined in detail various cultural practices (aeration, fertilizing, over-seeding, etc.) that would balance the effect of eliminating pesticides. Many, if not all, of these practices have been used in the past but not in conjunction with each other, not in the context of an overall maintenance program. What has been lacking is a site-specific detailed maintenance program that incorporates all of the available alternatives.

Such a program was developed over the past season after extensive, site-specific monitoring and soil testing. A new Turf Maintenance Manual has been generated, which includes a complete inventory of City-owned turf. Green spaces have been divided into eight categories, (or "turf types"), depending on use, profile in the community, proximity to the lake, etc. Detailed schedules of cultural practices have been developed, which are both "site" and "turf type" specific. A brief, general outline of the program is attached in Appendix "A". The goal of the Turf Management Program is to eliminate scheduled pesticide use on all turf, with only limited exceptions. These exceptions are outlined below. Appendix "B" provides a listing of possible 2002 pesticide applications under the City's Turf Management Program.

Lawn Bowling Green

The first exception is the use of fungicides at the lawn bowling green on a curative basis. It is essential for the survival of the closely mowed bentgrass that a disease control program exists. Turf diseases such as dollar spot, *pythium*, snow mold etc. can appear very rapidly and destroy an untreated green in a short period of time. Alternative methods of disease control will be introduced this year, (e.g. the use of beneficial bacteria to suppress dollar spot), and any new alternatives which arise will be investigated. It should be noted that all of the cultural alternatives mentioned above are currently practiced at the bowling green. These practices, which can help turf resist weed and insect infestation, however, are not as effective against turf disease. It should also be noted that the bowling green has controlled access (it is fenced) and is not an area open to children or pets.

Tyandaga Golf Course
Like the bowling green, Tyandaga Municipal Golf Course is a highly specialized operation requiring high service levels for maintenance. Tyandaga staff have customized an Integrated Pest Management Program (as per CC-257-92) to meet the needs of users and they use pesticides to supplement the program for specific applications. The focus is on cultural practices to maintain adequate service levels but periodic spraying is required as problems arise. Pesticide usage is at a minimum and the emphasis is on chemical reduction as well. However, at this time, it is not possible to eliminate the use of specific pesticide products and still maintain the high service level required to meet the needs of users. Staff will continue to investigate alternatives in the above areas to ensure usage is at a minimum and seek potential alternatives for the ultimate goal of pesticide reduction and possible elimination.

Greenwood Cemetery
A third exception is Greenwood Cemetery. Like the bowling green, Greenwood Cemetery is not an area where children would normally play and pets are not permitted. The cemetery is a specialized high profile service, and it is necessary to maintain the flexibility to use pesticides for specific control applications. To engage in the cultural practices to control weeds and insects that are used at other locations would prove difficult given the nature of the layout of the cemetery. As such, it may be necessary to apply spot treatments of granular weed and feed at times. An irrigation system has recently been installed at this City-owned facility, and this will help the turf grass compete better against weed and insect infestation.

A fourth exception would be the general use of Round-up on poison ivy at locations not accessible to the aquacide unit. Such applications would be few and far between, as in most instances access will not be a problem.

Emergency Situations
All municipalities, including Waterloo, retain the option to use pesticides in an emergency situation. Staff recommends that the City of Burlington operate in a similar fashion. Pesticides would only be used in the event of an unforeseen severe infestation that will have significant safety and/or economic consequences. Should an application be required to address such a situation, the application would be approved by the Director of Roads and Parks Maintenance and Council would be advised through a public report.

Turf Management Program
The Turf Management Program focuses on implementing regularly scheduled cultural practices on a timely basis for all municipally-owned public spaces. The goal is to produce a healthy turf grass cover which can resist both weed and insect infestation. Compaction, drought, fertility imbalances, etc. are all detrimental to a healthy turf grass plant. Aeration, irrigation, timely fertilization, etc. alleviate these conditions, and helps turf compete more effectively against pests.

Turf Management Program (cont'd)
Regular monitoring and record keeping are essential to this program. Based on extensive records and experience, staff will be able to predict maintenance schedules in advance, and monitoring will enable staff to allocate equipment, materials and labour efficiently and effectively.

The City of Waterloo has had success with a program similar to the one that staff is proposing for Burlington. Spencer Smith Park is a local example of success. Because it is such a high profile park, and because of the amount of traffic it must withstand, particularly related to special events, Spencer Smith Park has received regularly scheduled cultural practices for a number of years. It has not received a pesticide application in three years and despite the absence of chemical control, the park is for the most part pest free. Spencer Smith Park provides clear evidence that cultural controls do work. The aim of the Turf Management Program is to translate this success throughout the City.

While the benefits of the Turf Management Program are clear, the realities of implementing the program remain a challenge. Now that the program has been developed, it may take three or four years before there are any positive results in areas which currently experience a heavy weed infestation. Staff are confident that irrigated turf areas, which are currently weed free, will remain so. Non-irrigated turf, especially boulevards, will prove to be a greater challenge. Staff who manage the City of Waterloo's turf program, have warned that a great deal of patience and public education is needed to make this program work. That said, The City of Waterloo has had success using cultural practices even on its non-irrigated turf. Over time, and with repeated over-seeding and aerification, weed populations have been reduced to acceptable levels.

4.0 FINANCIAL MATTERS:

The cultural practices, outlined in the appendices, will be undertaken within Council-approved current budget funding levels. Staff will monitor the progress and success of the program and will report back as part of future budget cycles. Currently 75 ha per year are scheduled for over-seeding, and it may be desirable to expand this program in the future. If an enhanced naturalization program (which is being developed by the Healthy Green Spaces Committee) is successfully implemented with the support of community residents and businesses, funds previously spent on passive turf could be channeled into active turf and the more high profile boulevard and passive turf areas. Waterloo has had much success increasing maintenance levels of their active turf using savings realized by naturalization.

5.0 ENVIRONMENTAL MATTERS:

The entire pesticide issue is a sensitive one. The limitations of scientific research have made it difficult to establish the definitive effect of pesticides on human health, and on the environment. Still it is increasingly becoming accepted by society that sufficient evidence exists to warrant concern about possible health impacts, and adverse, perhaps irreversible, environmental impacts.

ENVIRONMENTAL MATTERS (cont'd)

Much is unknown, and it is staff's feeling that when residents are enjoying City parks with their children and pets they should not have to fear the unknown. Halton Region's Medical Officer of Health has publicly stated that "a policy of prudent avoidance" should be followed regarding pesticide use. Alternative methods do exist; they have been implemented successfully elsewhere, and are clearly more environmentally friendly. The City has the opportunity to take the lead on this issue, and set an example for private property owners.

6.0 COMMUNICATION MATTERS:

Staff anticipate that the community will follow the lead of the City of Burlington and consider reducing chemical usage on private lands. As such, communications should be focused on educating the public on City practices, and on practical, pesticide free, turf grass maintenance. A "Healthy Lawn Care" guide has been generated and will be included in the upcoming Parks and Recreations Department's Recreation and Leisure Guide. A communications program will be developed using a variety of tactics including, *City Talk*, the City's web page (www.city.burlington.on.ca), and the "Environmental Corner" in the *Burlington Post*.

7.0 CONCLUSION:

The June 2001 Hudson, Quebec decision has significantly heightened interest in the pesticide issue as it relates to both private and public lands. Staff have extensively investigated alternatives to pesticide use, with the goal of eliminating the use of such products on City-owned properties. A coherent program of cultural alternatives has been developed as part of the City's Turf Management Program, and with this program in place, residents will be able to enjoy the City's green spaces without having to worry about possible health risks associated with the use of pesticides.

This report addresses the reduction of pesticides on City-owned lands, and together with the companion report (D&I 01/02) which deals with the use of pesticides on private property, provides Council and the community the opportunity to engage in a full debate on the pesticide issue.

8.0 APPENDICES:

A) Outline of the City of Burlington's Turf Management Program
B) Locations for Possible Pesticide Application - 2002

Respectfully submitted,

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Program Development, Budgets & Contracts

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PUBLIC NOTIFICATIONS:
P. Willmott / J. Davis – Region of Halton
Burlington Sustainable Development Committee – S. Conick
Healthy Green Spaces Steering Committee
Inter-Municipal Pesticide Review Committee

APPENDIX "A"

CITY OF BURLINGTON TURF MANAGEMENT

CULTURAL PRACTICES SCHEDULES

Aeration:

To relieve compaction and improve water penetration, turf will be aerated 1 to 4 times per year. Active irrigated fields will be aerated 4 times per year (May, July, August, and September). Active non-irrigated fields will be aerated twice a year; once in the spring when the fields are moist but not overly wet, and in fall again when sufficient moisture is present. Lakefront parks, high profile passive turf, and high profile boulevards will be aerated once a year in the spring. Spencer Smith Park is an exception due to the amount of traffic it must withstand. Timing of aeration at this location is event driven.

Fertilization:

Fertilization schedules are as follows:

1. Active Irrigated …… 4 times per year
2. Active Non-irrigated……. 3 times per year
3. High Profile Lakefront Parks…… 3 times per year
4. Passive Parks and High Profile Boulevards…… 1 time per year

N-P-K ratios are to be determined by soil tests. Lakefront parks will be fertilized with an organic product due to the proximity of the lake. Dormant applications will occur in early to mid-November when the turf is still green, but not actively growing. Areas that receive only one application per year will be fertilized in the early fall, once the heat of the summer has passed and rain can be expected. Rates should be kept sufficiently low to prevent lush growth late in the fall. A starter fertilizer (16-32-6) should be used in conjunction with over-seeding or new sod.

Mowing:

Proper mowing practices promote healthy turf. Boulevards and passive turf should be maintained at 7cm, and active turf at 6cm to encourage healthy root growth and better wear tolerance. This will help the turf choke out weeds and better resist insect damage.

Over-seeding:

Over-seeding will be done in areas where turf is thin, and in high profile areas where weed encroachment is noticed. If carried out on a regular basis, over-seeding can reduce the amount of more costly year-end sodding. On non-irrigated turf, timing of over-seeding is weather

dependent and should not be carried out during the heat of the summer. On irrigated turf, August is the best time for over-seeding. The seed must be kept moist but not saturated, which may involve up to 4 syringes a day if temperatures warrant. Topdressing should be done in conjunction with over-seeding on high end sports fields. This will help level the playing surface, and add nutrients to the soil.

Sodding:

On active turf, bare areas will have to be sodded in late fall when the fields are closed. Sodding is also an option for renovating areas with severe weed infestation in high profile areas.

Irrigation:

Determining the proper amount of water for turf is more of an art than a science as it depends on many factors such as weather and soil structure. What follows are some brief guidelines.

1. The concept of deep and infrequent watering should be followed if possible. Clay soils (north of the Q.E.W.); however, will not accept as much water as sandy soils and will require more frequent irrigation. The limitations of the irrigation system may also compromise the deep and infrequent watering principle.
2. Turf needs about 4cm of water per week during the growing season. Supplemental irrigation should be shut off if rainfall provides adequate amounts. Too much water is detrimental.
3. The best time to irrigate is in the morning, just prior to or after sunrise. This will not interfere with play, and will minimize the period of leaf surface wetness, which will reduce disease incidence. Wind disruption of irrigation patterns is less likely during the morning.

TURF TYPE	CUTS /yr	FERT. /yr	AERATING /yr	OVERSEEDING Ha / year	SODDING m2/ year	TOPDRESSING Ha / year
Active irrigated (42.7 ha)	44	4	4	25	6000	25
Active, not irr. (34 ha)	22	3	2	30	5000	30
Lakefront Parks (4.7 ha)	22	3	1[1]	AN[2]	AN	AN
Passive Parks (197.57 ha)	14	1	1	20	AN	AN
High Profile Blvds (41.3 ha)	14	1	1	AN	AN	AN
Other Blvds (23.35 ha)	14	0	0	-	-	-
HROW's (81 ha)	4	0	0	-	-	-
Urban/rural Roads (50.19 ha)	2	0	0	-	-	-

- [1]Spencer Smith, due to high volumes of traffic will be aerated as needed (5 or 6 times per year).
- [2]AN = As needed, to combat weed/insect infestation.

APPENDIX "B"

CITY OF BURLINGTON

LOCATIONS FOR POSSIBLE PESTICIDE APPLICATION - 2002

The following non-irrigated sports fields will be monitored during the 2002 season. *Only* if warranted, they will receive a spot treatment of weed and feed in October, 2002 to provide a more expedient transition to a cultural practices program. Areas treated will be posted as per the Ontario *Pesticide Act.*

- Bayview Park
- Central Park
- Greenwood Park
- Hidden Valley Park
- Iroquois Park
- Kerns Park
- Kiwanis Park
- Lansdown Park
- LaSalle Park
- Leighland Park
- Lions Park
- Maple Park
- Mountainside Park
- Nelson Park
- Palmer Park
- Sheldon Park
- Sherwood Forest Park
- Thorpe Park