

M E M O R A N D U M

DATE: March 31st, 2006

TO: Environmental Issues Committee

Mayor and Members of Council
John Livey, Chief Administrative Officer
Jim Sales, Commissioner Fire & Emergency Services
Peter Loukes, Director of Operations

FROM: Paul Ingham, General Manager, Operations

RE: **Phase 2 – Turf Care and Maintenance Practices Review**

1.0 Introduction

In fall 2006, the Town of Markham engaged Marshall Macklin Monaghan Limited to prepare the Phase 1 Review of Turf Care and Maintenance Practices. The report, presented to Council February 8, 2006, included a selected inventory of turf conditions in Markham's parkettes, neighbourhood / community parks, sportsfields and boulevards. Evaluation of neighbouring municipalities of Richmond Hill and Vaughan and their practices compared Markham's practices and turf within York Region. City of Waterloo turf care practices were also reviewed and compared to Markham.

Maintenance practices for each municipality in York Region were determined through face-to-face interviews with maintenance staff in the comparator municipalities. Interviews with staff at each municipality elicited information regarding Integrated Pest Management (IPM), Plant Health Care (PHC), pesticide use, soil sampling, vertical cutting, aerification, topdressing, pesticides, overseeding, seed types, height of cut, mowing frequency, mowing crews, maintenance of mowing equipment, mowing quality, and fertilizer application/applicator/type.

The goal for Phase 2 of this program is to determine the opportunities for decreasing the use of pesticides in its turf management program. To achieve the goal, the following actions are considered:

- Analyze current Town of Markham standards of care in turf management;
- Review the successful cultural practices of other municipalities;
- Propose alternatives to the current turf management practices;
- Cost the proposed alternatives to current practices and compare to the status quo and practices that involve the use of pesticides.

2.0 Classifications

The Town has a park and street classification system of maintenance areas that include turf management. A definition of each of the classifications follows:

Parkettes serve the passive recreation needs of the adjacent community usually with tot-lot playground equipment, benches and paths. The size of the parkettes is usually less than 2 hectares. Turf tends to be a lower percentage of the land area than other parks in the hierarchy of the parks system. Turf is usually a rye and bluegrass based mix. Clover is a satisfactory green plant in the turf.

Neighbourhood Parks serve as recreational and social focus of neighborhoods and may provide a combination of active and passive opportunities. Turf is used for impromptu games, not programmed by the municipality. The size of the parks is 2 to 4 hectares. Turf is usually a rye and bluegrass based mix. Clover is a satisfactory green plant in the turf.

Community Parks serve the broader community with a more active and programmed recreation component than neighbourhood parks. Community parks serve active and passive uses. The park may have multiple user groups on site at any one time. Turf is usually a rye and bluegrass based mix. Clover is a satisfactory green plant in the turf outside active programmed sportfields. Clover is an unsatisfactory green plant in turf on sportfields because it can create slip hazards during wet weather conditions.

Sportfields are often part of community parks or may be a single use facility associated with a recreation centre or school. Turf can be a rye and bluegrass based mix or specially mixed blend that can withstand the rigours of cleated athletes. Clover and broadleaf plants are unsatisfactory green plants in turf on sportfields because they can create slip hazards during wet weather conditions.

Boulevards are the spaces between the curbs of streets and sidewalks. The size varies between 0.5 and 3 metres in width: the wider the road right-of-way, the greater the width of the boulevard. Turf is usually a rye and bluegrass based mix. Clover and a high percentage of weeds are considered satisfactory in the turf if they are tolerant of the urban conditions.

Window Streets are paved local streets that parallel arterial or major collector roads. The space between is planted or grassed. Turf is usually a rye and bluegrass based mix. Clover and a higher percentage of weeds than for parks are considered satisfactory in the turf.

Medians are spaces surrounded by curbs within the pavement of roads. If the space between curbs is wide enough, turf is included. Turf is usually a rye and bluegrass based mix. Clover and a high percentage of weeds are considered satisfactory in the turf if they are tolerant of the urban conditions.

3.0 Standards of Care

The consultant in Phase 2 will review the standards of care required for turf management. The Town's current policies and actions will be taken into account including:

- Mowing height of turf
- Frequency of mowing
- Mowing equipment
- Acceptability and definitions of weeds including: clover; dandelions, etc. in the classification areas
- Percentage of weeds in turf and relationship to the classification areas.

Principles for future standards of care will be recommended.

4.0 Maintenance Practices

Current approved standards of care will be defined. The standards will include:

- Cultural practices
- Integrated Pest Management (IPM);
- Plant Health Care (PHC);
- Pesticide use
- Soil sampling;
- Vertical cutting
- Aerification
- Topdressing
- Overseeding
- Turf seed types
- Fertilizer application/applicator/type

Two levels of Cultural practices will be investigated: cultural practices without the use of pesticides; and cultural practices allowing for a phasing of pesticide reduction.

5.0 Maintenance and Recovery Strategies

Phase 1 data has been summarized and analyzed. From the analysis and comparative research of maintenance practices, recommendations, standards and phasing for a future maintenance program and turf recovery strategies for the Town shall be presented in a report format.

Costs for the proposed maintenance program will be detailed, and costs will be presented on a per hectare basis for each program. After the completion of the report, it will be presented to Town Council using power point format, with time allotted for questions by Council.

6.0 Phase 2 Methodology

The Consultant includes a project manager, an expert on pesticide-free or cultural turf maintenance practices, and an expert on pesticide use in maintenance practices. There are two alternative methodologies.

1. Marshall Macklin Monaghan Limited could engage a single cultural practices expert selected by the Town of Markham to assist with the report. The expert will form part of the team that includes Mark Inglis, Bob Kennedy and Markham turf maintenance staff. Mark Inglis and Bob Kennedy were authors of Phase 1 report and will maintain consistency with the Phase 2 report. A report would be prepared by MMM for review by the Environmental Committee. Revisions would be made and the final report would follow.
2. A round table workshop format could include all three of the experts listed below in the work program, thus garnering an objective and diverse opinion on the future delivery of turf management services. The three would be invited to a workshop with town staff and a representative(s) of the Environmental Committee to discuss the options available to the Town. Their ideas would be compiled in a preliminary report. The ideas would be cost

estimated and phasing would be proposed. The team would meet again in a workshop format to bring consensus to a preferred approach. The final report would follow.

Recommended Cultural Practices Consultants are listed on the following pages.

Cheryl Shour, B.Sc., MBA has extensive experience in organic turf management, assessing turf management protocols and analyzing outcomes of different strategies. Her specific expertise in the field is supplemented by extensive consulting and project management experience in both the private and public sectors. She has consulted and spoken widely on the issue of transitioning properties away from pesticide dependence towards organic management. She has an honours Bachelor of Science degree and an MBA with a finance and economics major from the University of Toronto. In 1993, Cheryl began one of Toronto's first 100% organic lawn care services and the basis of her current consulting work derives from 10 years of experience in the provision of residential and commercial organic turf programs. As chief Environmental Officer of Healthy Home Service Inc. Cheryl developed the organic lawn care protocols for her company based on the objective of creating aesthetically pleasing and environmentally sustainable green spaces. All programs applied sound horticultural principles including site specific plant selection, soil enhancement, good cultural practices and a minimum of resources and synthetic inputs. Products were carefully selected on an 'as needed' basis and only those that would contribute to the long term health of the turf were used.

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David Smith is an Articling Agrologist and a Certified Golf Course Superintendent. He holds an Ontario Diploma in Horticulture from the Guelph Agricultural College, University of Guelph. He has over 25 years of experience in the golf industry and has been involved in the management of high end professional sport turf, sod production, lawn bowling clubs and general park land.

In 1996, he established **DCS Agronomic Services**. He samples and develops recommendations for over 100 golf courses, 3,500 acres of sod production, 250 sports fields and more than 1000 acres of municipal parkland. He interprets over 2,500 soil tests annually. In addition to working with golf courses he assists sod producers, general contractors and municipalities with fertility and cultural management programs. The list of clients includes: Zander Sod Co., Dol Turf Restoration, The City of Hamilton, The City of Mississauga, The Town of Collingwood, and The Town of Clarington.

During the grow-in phase of construction he assists with challenges such as nutrition, pathology, entomology and cultural management practices.

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Tom Clancy has worked for the City of Kitchener in the capacity of Director of Parks for 25 years and General Manager of Parks and Recreation for 6 years. Tom's education includes a Diploma in Horticulture from the Niagara Parks Commission, (NPD) graduating in 1961. Tom received a Bachelor of Science (BSc.) from Cornell University in Ithaca New York in 1968. The Kitchener position as Director of Parks was awarded in June of that year. Believing in Life Long Learning, Tom gained his CMM Level III (Certified Municipal Manager) in 1997 from the Ontario Municipal Management Institute.

Tom has worked with many Community Groups and Service Clubs in partnership with the development of projects and events over the years. His style is to gain consensus with teams for the betterment of the projects and the community. He was the Chairman of the successful Schneiders 2002 International Softball Congress World Fastball Tournament held in Kitchener and is chairing that tournament again this year.

Since October of 1999 he has managed **Three C Consulting** as well as volunteering for several committees. He made a presentation at the Ontario Sports Turf Association in January 2004 and has written articles for their newsletter.

Tom has conducted sportsfields management and maintenance training for Kitchener, Waterloo, Cambridge, Pettawawa and The Ontario Recreation Facilities Association weeklong course in Guelph each year for the past six years. Tom utilizes the latest information on cultural practices but emphasizes aerating, overseeding with the best varieties of grass species and best practices from conferences, GTI and many sources to keep students up to date with the latest information. Tom is an active member of Ontario Parks Association, Niagara Parks Alumni Association and the Sports Turf Association.

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