

ENVIRONMENT COMMITTEE

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*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

SUBJECT: EUROPEAN CHAFER UPDATE 2006

RECOMMENDATIONS:

1. THAT Council approve the European Chafer Management Plan as noted in Section 4.0 of this report.
2. THAT a copy of this report be forwarded to the Parks, Recreation & Culture Commission.

REPORT

The Environment Committee, at its Open meeting held on 2006 April 11, received and adopted the *attached* report outlining the proposed 2006 European Chafer Beetle Management Plan for Burnaby. The Committee noted that the plan included an education, surveillance and research and remediation strategy.

Respectfully submitted,

Councillor Dan Johnston
Chair

Councillor Pietro Calendino
Vice Chair

Councillor Lee Rankin
Member

:COPY – CITY MANAGER
DIRECTOR PLANNING & BUILDING
DIRECTOR ENGINEERING
DIR. PARKS, REC. & CULTURAL SERV.
DIRECTOR FINANCE

TO: CHAIR AND MEMBERS
ENVIRONMENT COMMITTEE

DATE: 2006 April 06

FROM: DIRECTOR ENGINEERING

FILE: 33000-05
Reference: European chafer

SUBJECT: EUROPEAN CHAFER UPDATE 2006

PURPOSE: To provide the Committee with an update on various activities undertaken in 2005 relating to the European chafer infestation and proposed European chafer management activities for 2006.

RECOMMENDATIONS:

1. **THAT** the Committee recommend Council to:
 - a) approve the European Chafer Management Plan as noted in Section 4.0 of this report; and
 - b) forward a copy of this report to the Parks, Recreation & Culture Commission.

REPORT**1.0 INTRODUCTION**

Council at its meeting of 2005 April 18 approved a European Chafer Management Plan for 2005, to build on the work that was initially undertaken in 2004 to manage the European chafer turf pest in Burnaby.

The following report provides the Committee with an update on various activities undertaken in 2005 relating to the European chafer, and proposes a European Chafer Management Plan for 2006.

2.0 UPDATE ON EUROPEAN CHAFER BEETLE MANAGEMENT ACTIVITIES (2005)

The European chafer (*Rhizotrogus majalis*) is a non-native beetle that spends the majority of its life as a grub (larva) in the soil. The grub form of the chafer causes damage to turf grasses in the fall and spring when the grub feeds on turf roots. Secondary damage to lawns, boulevards and medians is caused by birds, skunks and raccoons digging through the turf to feed on grubs. Since the European chafer's introduction to New Westminster

in 2001 and Burnaby in 2003, this turf pest has also been confirmed in the municipalities of Vancouver and Coquitlam.

In 2005, staff undertook a comprehensive public education and public land remediation program. The components of the European Chafer Management Plan that were completed in 2005 are as follows:

- Distribution of revised brochures city-wide through direct mailing, and inclusion of lawn care information in the City's property tax mailing;
- Additional information provision through an updated web site, eight workshops for residents and staff, and newspaper/newsletters ads;
- Surveillance/mapping of infested public lands and continued tracking of infested private lands; and
- Pilot remediation and treatment of selected public lands using a natural biological (nematode) product, and post-assessment.

In addition, the piloting of alternative soil depths and groundcover types in the medians and boulevards along Southridge Drive (from Griffiths Drive to Meadow Avenue) is being undertaken in early 2006, as approved in the previous 2005 European Chafer Management Plan.

3.0 RESULTS OF PILOT REMEDIATION AND TREATMENT OF PUBLIC LANDS

ES Cropconsult Ltd. was retained in the summer of 2005 to test the effectiveness of the biological (nematode) treatment *Heterorhabditis bacteriophora* on remediated sections of Burnaby public lands. This work was a natural extension to the research this firm had undertaken in New Westminster in 2004, to test the effectiveness of various biological treatments on private lands.

Selected boulevards and medians that had sustained severe chafer damage in 2004 were reseeded and fertilized by the Parks, Recreation and Cultural Services Department in the spring of 2005. These sites, located at City Hall, Deer Lake Avenue, Oakmount Crescent, Oakland Street, Edmonds Street and Griffiths Drive, were then treated by ES Cropconsult in July 2005.

In September 2005, the nematode-treated sites and adjacent untreated boulevards were sampled to determine chafer population levels. Characteristics of the soil and sod condition at each site were also noted. All lawn areas that received nematode treatment in July were watered at the time of nematode application, but were observed to be very dry when sampled in September.

In areas where grass was green and had a dense root mass, chafer numbers were low. These sites were often located under trees on the boulevards, such as at the Deer Lake Avenue site. At the City Hall and Oakmount Crescent sites, lush areas of the medians and boulevards had very few chafer grubs, while drier area of grass just a few meters

away were infested. Medians were generally harder hit with chafer damage than boulevards, likely due to their exposed position. The medians along Griffiths Drive were very exposed and the grass was in a particularly stressed condition. These medians contained high populations of chafer grubs and the grass was already being dug up by predators at the time of sampling. The complete study and its findings are available for viewing at the Engineering Department.

Some of the recommendations that stemmed from the 2005 treatment experience, include the need for increased moisture retention of treated areas (through use of alternative plantings), and the need for improved lawn care maintenance practices. This approach is supported in a study by the Western Canada Turfgrass Association, the Canadian Nursery Landscape Association and several local municipalities (2005), which found that an application of nematodes to highly-infested lawns could not alone reduce damage from chafer predators. Much of the lawn damage attributed to chafer grubs is done by crows, skunks and other predators that feed on larvae over the winter. These predators have learned that damaged lawn may contain a food source, and may completely destroy lawns in search of chafer grubs. It is believed that predators do not attack lawns appearing to be healthy (with little or no dead grass) even though grubs may be present.

These recommendations were taken into account when designing the European Chafer Management Plan for 2006.

4.0 EUROPEAN CHAFER MANAGEMENT PLAN (2006)

Building on the work undertaken in 2005, the proposed European Chafer Management Plan for 2006 includes the following components:

Phase	Activity	Comments
Education	Staff	<ul style="list-style-type: none"> ▪ Continue participating in a multi-stakeholder advisory group consisting of academia, turf grass industry and government representatives to continue research on the most effective methods of controlling this turf pest. ▪ Contribute to a study that evaluates the comparative efficacy of commercially-available treatment options for controlling the European chafer on infested lawns.
	General Public	<ul style="list-style-type: none"> ▪ Maintain and regularly update the City Web site to include the most current information on European chafer management options. ▪ Sponsor eight workshops offered through the

To: Environment Committee
 From: Director Engineering
 Re: European chafer update 2006

2006 March 28..... Page 4

Phase	Activity	Comments
		Burnaby School Board's Adult & Continuing Education Program. <ul style="list-style-type: none"> ▪ Continue making presentations to special interest groups, as requested. ▪ Place advertisements in local newspapers to provide information on the European chafer and other related issues such as cosmetic herbicide reduction and water conservation.
Surveillance	Public Lands	<ul style="list-style-type: none"> ▪ Continue to identify and map high value public lands that have been impacted by European chafer.
	Private Lands	<ul style="list-style-type: none"> ▪ Continue to record and map reports of European chafer damage on private lands.
Research & Remediation	Public Lands – Pre-Monitoring	<ul style="list-style-type: none"> ▪ Assess European chafer populations in shaded versus exposed sections of public lands prior to treatment (early spring).
	Public Lands – Mechanical Remediation	<ul style="list-style-type: none"> ▪ In pilot treatment areas, undertake removal of dead grass, aerate and amend topsoil (as needed), re-seed and fertilize boulevards and medians by Parks staff (spring to summer). ▪ Modify mowing practices by raising mower height and/or altering the mowing cycle for remediated areas through the use of dedicated mowing equipment for this purpose.
	Public Lands – Biological Remediation	<ul style="list-style-type: none"> ▪ Undertake pre-watering of all pilot sites and verify moisture content of soil (summer). ▪ Undertake biological treatment of pilot sites (excluding control sites) using nematodes <i>H. bacteriophora</i> (late July). ▪ Undertake post-watering of all pilot sites for a minimum of three weeks.
	Public Lands – Post-	<ul style="list-style-type: none"> ▪ Assess European chafer populations in treated versus control sections of public lands

To: Environment Committee
 From: Director Engineering
 Re: European chafer update 2006
 2006 March 28..... Page 5

Phase	Activity	Comments
	Monitoring	following treatment (fall).
	Southridge Drive Planting- Post-Monitoring	<ul style="list-style-type: none"> ▪ Undertake post-monitoring of chafer populations in the varying soil depths and groundcover types along Southridge Drive (fall).

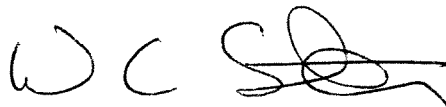
As a result of the components of the European Chafer Management Plan for 2006, it is expected that the City will continue to advance its knowledge of, and ability to manage European chafer infested City lands.

4.0 CONCLUSION

A number of activities were undertaken by the City in 2005 to respond to the continued evidence of the European chafer turf pest, and the growing demand for information by the public. Some of the most notable achievements in 2005 include the pilot remediation of selected public lands (using increased maintenance and nematode treatment), and the comprehensive distribution of print materials on the subject of the European chafer.

Building on the work from 2005, the European Chafer Management Plan for 2006 will further advance our knowledge of sustainable landscape maintenance and treatment methods for European chafer population suppression. Continued public education will also provide support to new and existing property owners in Burnaby who are dealing with this pest for the first time.

A report on the effectiveness of the actions proposed in 2006 will be provided in a future report to Committee and Council.



W.C. Sinclair, P. Eng.
 DIRECTOR ENGINEERING

Copied to: City Manager
 Director Planning and Building
 Director Finance
 Director Parks, Recreation and Cultural Services

YH:jb