DA TORONTO

REPORT FOR ACTION

Non-Competitive Contract with Zimmer Air Service Inc. for Lymantria Dispar Dispar (LDD) Moth Outbreak Control - 2022

Date: December 14, 2021
To: Infrastructure and Environment Committee
From: General Manager, Parks, Forestry and Recreation and Chief Procurement Officer, Purchasing and Materials Management Division
Wards: 4, 6, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and 25

SUMMARY

In an effort to protect the City's tree canopy against invasive pests, it is necessary for the City to implement a control program in 2022, including an aerial spray in certain areas of the City, for *Lymantria dispar dispar* (LDD) moth, formerly referred to as European gypsy moth.

The report requests that City Council grant authority to enter into a non-competitive contract with Zimmer Air Service Inc. for a term of one year, to conduct aerial spray operations services as part of the overall LDD moth control program for 2022, in the amount of \$804,608 net of all taxes and charges (\$818,769 net of Harmonized Sales Tax recoveries).

LDD moth is an invasive alien pest that was first found in Ontario in 1969. This pest cannot be eradicated and when left unchecked populations grow to outbreak levels which can lead to tree defoliation and ultimately affect the health of the urban forest canopy. The LDD moth population fluctuates in relation to environmental and natural biological controls. In 2007, 2008, 2013, 2017, 2019 and 2020, the City of Toronto implemented aerial spray control programs when LDD moth populations attained outbreak levels. Those measures were successful in reducing the local populations to acceptable levels.

Current survey data collected in the summer and fall of 2021 indicate LDD moth population levels have reached outbreak levels in some areas of Toronto, requiring intervention in order to mitigate the impact of this threat to forest health and the nuisance to residents. This report presents the results of the surveys along with recommended control measures, which include an aerial spray of Foray 48B (Btk), containing the active ingredient *Bacillus thuringiensis* subspecies *kurstaki* (Btk), in larger outbreak areas. An aerial spray of BoVir, containing the active ingredient *Lymantria*

dispar Nucleopolyhedrovirus (LdMNPV), is proposed in High Park, pending the approval of emergency registration.

At present, aerial spraying of Foray 48B (Btk) is proposed to treat a total of 658 hectares (ha) of land in Wards 6, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, and 25. Aerial spraying of BoVir (LdMNPV) is also proposed over 128 ha area of High Park in Ward 4. Tree injection and egg mass removal will be performed in other locations within these wards to treat approximately 2200 additional selected trees. This control strategy is expected to reduce the LDD moth population and predicted levels of defoliation, resulting in prevention of tree loss or significant decline.

City Council approval is required for contracts valued over \$500,000.00 awarded in relation to a non-competitive or limited solicitation procurement process in accordance with Article 195-7.3(D) of Municipal Code Chapter 195-Purchasing, and before expenditures may be made for a commitment of more than \$500,000 net of HST in accordance with Article 71-11(A) of the Municipal Code, Chapter 71 - Financial Control.

RECOMMENDATIONS

The General Manager, Parks, Forestry and Recreation and the Chief Procurement Officer, Purchasing and Materials Management Division recommend that:

1. City Council authorize the General Manager, Parks, Forestry and Recreation to implement an aerial spray using Foray 48B, pesticide based on a biological control agent *Bacillus thuringiensis* subspecies *kurstaki* (Btk), in Wards 6, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25; and subject to approval of emergency registration from the Pest Management Regulatory Agency in Q1 2022, BoVir, pesticide based on a biological control agent *Lymantria dispar Nucleopolyhedrovirus* (LdMNPV), in Ward 4 (High Park).

2. City Council direct the General Manager, Parks, Forestry and Recreation to consult with Toronto Public Health, Transportation Services and Toronto Police Service to coordinate implementation of the proposed aerial based application of the biological pesticides Foray 48B (a.i. Btk) and BoVir (a.i. LdMNPV).

3. City Council authorize the City Solicitor to introduce a by-law to implement a control strategy for LDD moth infestation through aerial spraying of the biological pesticides as set out in Recommendation 1.

4. City Council authorize the General Manager, Parks, Forestry and Recreation to negotiate and enter into and execute a non-competitive contract with Zimmer Air Service Inc. to conduct aerial spray operations services as part of the overall LDD moth control program in 2022, in the amount of \$804,608 net of all taxes and charges (\$818,769 net of Harmonized Sales Tax recoveries), on terms and conditions satisfactory to the General Manager of Parks Forestry and Recreation and in a form satisfactory to the City Solicitor.

The total value of the recommended procurement contract award is \$804,608 excluding all taxes and charges. The total cost to the City is \$818,769 net of HST recoveries. Funding for this contract award is included in the 2022 Staff Recommended Operating Budget for Parks, Forestry and Recreation as part of the base budget for tree maintenance under Cost Centre P00031, GL- 4409, and Functional Area Code 1830300000. The allocation of these resources is adjusted annually to prioritize tree and urban forest health by addressing current and emerging impacts of forest pests such as the LDD moth.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the information presented in the Financial Impact Section.

DECISION HISTORY

At its meeting held on April 30, 2020, City Council adopted Item IE12.6, entitled *Implementation of Aerial Spray Program for Control of European Gypsy Moth Outbreak in Ward 2,* authorizing the aerial spray by Zimmer Air Service Inc. in 2020.

http://app.toronto.ca/tmmis/view Agenda Item History.do?item=2020.IE12.6

At its meeting held on January 30, 2019, City Council adopted Item IE1.3, entitled *Non-Competitive Contract with Zimmer Air Service Inc. for Control of European Gypsy Moth Outbreak in 2019*, authorizing the aerial spray by Zimmer Air Service Inc. in 2019.

http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.IE1.3

At its meeting held on April 26 2017, City Council adopted Item PE18.6, entitled *Control* of *European Gypsy Moth Outbreak in the City of Toronto*, authorizing the aerial spray by Zimmer Air Service Inc. in 2017.

http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PE18.6

At its meeting held on November 27, 2012, City Council adopted Item PE17.2, entitled *Control of European Gypsy Moth Outbreak in the City of Toronto*, authorizing the aerial spray by Zimmer Air Service Inc. in 2013.

http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.PE17.2

At its meeting held on January 29, 2008, City Council adopted Item PE12.4, entitled *Forest Health Care – Invasive Exotic Pests*, authorizing the aerial spray by Zimmer Air Service Inc. in 2008.

http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2008.PE12.4

At its meeting held on February 5, 2007, City Council adopted Item PE18.6, entitled *Control of European Gypsy Moth Outbreak in some Areas of the City of Toronto*, authorizing the aerial spray by Zimmer Air Service Inc. in 2007.

http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2007.PE1.4

COMMENTS

The Lymantria dispar dispar (LDD) moth, formerly referred to as European gypsy moth, has been present in North America since the late 19th century when it was inadvertently released into the environment in the state of Massachusetts, USA. The first population of LDD moth in Ontario was detected on Wolfe Island in Lake Ontario in 1969. Outbreak conditions causing visible damage over large geographic areas occurred in southeastern Ontario during the mid-1980s, the early-1990s and the mid-2000s. In Toronto, outbreak conditions have required aerial spray control programs in 2007, 2008, 2013, 2017, 2019 and 2020.

The LDD moth's preferred hosts are all species of oak trees (genus *Quercus*) however it will also attack maple (genus *Acer*), spruce (genus *Picea*), birch (genus *Betula*), aspen (genus *Populus*) and many other deciduous and coniferous trees. LDD moth populations are known to fluctuate over time, with long periods of low population levels climbing rapidly to outbreak conditions, then collapsing to pre-outbreak levels. The cyclical nature of outbreaks combined with the fragmented distribution makes management difficult as the patterns are not predictable.

LDD moth has four life stages: egg, larva (caterpillar), pupa and adult. The caterpillar is the destructive life stage, feeding on tree leaves for a period of about seven weeks. With potentially thousands of caterpillars feeding on an individual tree, a tree can be quickly defoliated. Low level of leaf feeding is noticeable, and can cause injury to 30 to 40 per cent of the leaf area of an individual tree. Medium and high levels of leaf feeding can also occur during outbreak conditions, causing significant defoliation of individual trees. Repeated tree defoliation will result in twig death, branch death, and/or whole tree mortality.

Normally, LDD moth is present in low numbers. Naturally occurring fungal pathogens and insect viruses cause disease in caterpillars and eggs, providing effective biological control of populations. Two natural biological controls that kill LDD moth caterpillars are a fungal pathogen referred to as *Entomophaga maimaiga*, and a virus referred to as nuclear polyhedrosis virus (NPV). Naturally occurring parasitic wasps also kill LDD moth eggs, and predators such as birds and mice feed on the caterpillars. These naturally occurring biological controls aid in keeping the population levels low.

When LDD moth population levels climb rapidly, the biological controls that naturally suppress population outbreaks are not effective. It is important that treatment programs be applied strategically to areas with high LDD moth population density so that susceptible trees are protected from lethal damage and populations of fungi, virus and parasitic wasps that depend on LDD moth insects for their reproduction, are sustained

and allowed to build up. Treatment programs must balance the health of trees against the health of natural biological control populations.

LDD outbreaks may last between three to five years before natural biological controls or cold weather cause populations to crash. At low population levels, individual trees respond to early defoliation by producing a second flush of leaves, mitigating the stress to the tree. However, in combination with other stresses, repeated defoliation can cause tree mortality.

LDD moth outbreaks escalated in 2020 and 2021. The Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) has indicated this is the worst infestation in Ontario in 30 years, with an increase from 14,000 ha in 2018 to 47,203 ha affected in 2019 to 586,385 ha in 2020.

Outbreaks in Toronto

LDD moth has been present in the City of Toronto for many years. Prior to 2004, populations were low and defoliation was not very significant. However, in subsequent years population levels were detected to be increasing. Controls were implemented that were ultimately successful in reducing the LDD moth population to levels considered tolerable in relation to the public nuisance they cause as well as forest health.

In the years 2004-2006, 2012, 2014 and since 2018, many concerned residents and Urban Forestry staff have used Integrated Pest Management (IPM) techniques to control caterpillars. The methods used have included:

- Burlap wraps around tree trunks, collection and daily removal and destruction of the caterpillars that hide under the burlap
- Pheromone traps or lures to catch or confuse male moths
- Removal and destruction of egg masses
- Insecticide spray of selected trees
- Insecticide injection of selected trees

These methods worked to address the landscape level impacts of LDD moth with limited success. Burlap bands only work while caterpillars move up and down the tree when they are small. Pheromone traps provide little control in high populations and are used primarily for monitoring low level populations by capturing only the male moths. When high numbers of egg masses are located in the upper canopy of the tree, and where the tree bark is very rough, mechanical scraping operations to destroy egg masses are relatively ineffective. The spraying and injecting of selected trees is effective in destroying caterpillars that feed on individual trees, but has little impact on the overall LDD moth population at the landscape level.

In 2007, 2008, 2013, 2017, 2019 and 2020 Urban Forestry conducted aerial spray operations by helicopter, using Foray 48B (Btk) containing the active ingredient *Bacillus thuringiensis* subspecies *kurstaki* (Btk). The sprays were successful and populations of LDD moth were reduced to tolerable levels.

Survey Results and Control Measures Implemented in 2021

Urban Forestry regularly surveys for potential forest pest outbreaks and implements control programs when the pest populations reach outbreak levels. In Toronto, LDD moth populations are increasing in new areas of the City, putting additional pressure on the City's woodlots, communities, parks and environmentally sensitive areas, particularly in sites where currently registered pesticides have not been utilized.

In 2021, LDD moth outbreaks were located in small, isolated areas primarily in the northern and eastern parts of the city therefore Urban Forestry did not undertake an aerial spray by helicopter. Instead, Urban Forestry undertook focussed integrated pest management work to mitigate defoliation in 2021, which included:

- Over 30,000 inspections of City-owned trees
- Egg mass removal for 4,387 trees
- TreeAzin injections for 493 trees
- Ground spray for 83 trees

Since the summer 2021 inspections were completed as part of defoliation and egg mass surveys to assess the impacts that LDD moth had on trees in Toronto and to forecast population levels of LDD moth for the 2022 season. Surveys have been conducted in parts of the city with historic infestations, in areas identified with moderate to severe defoliation, and in new areas where residents have reported LDD moth sightings. These surveys allow City staff to delineate the infested areas and to forecast population levels for the following year to determine candidate areas for an aerial spray or other Integrated Pest Management (IPM) control measures. Surveys were completed in November 2021 with results clearly demonstrating that the LDD moth population in 2022 is forecast to be high in identified parts of the City. It is likely that this will result in severe defoliation of various tree species unless treated with an aerial spray in 2022.

Proposed LDD Control Products and Area

The City conducts aerial spray programs when LDD moth populations rise to levels that could have devastating effects on Toronto's tree canopy. Aerial spraying has proven to be very effective in lowering LDD moth populations over large areas. Table 1 describes the area of aerial spray by year since 2007.

Year	Area (ha)	% of the total Toronto area
2007	70	0.11
2008	285	0.45
2013	392	0.62
2017	135	0.21
2019	1372	2.17
2020	26	0.04
2022*	786	1.25

Table 1. Area of Aerial Spray by Year

*Proposed

For 2022, Urban Forestry is recommending the implementation of an aerial spray program totalling 786 ha, covering parts of 13 Wards and covering 1.25 per cent of the total area of Toronto, as identified in Attachment 1: Proposed Aerial Spray Areas by Ward.

Additionally, Urban Forestry identified over 2200 individual trees outside the proposed aerial spray areas that require alternative methods of control. Approximately 200 trees are selected to be treated with pesticide injection methods in wards 1, 2, 6, 7, 15, 16, 17, 21, 22, 23, 24, and 25. Over 2000 trees are scheduled for mechanical egg mass removal on public land in wards 1, 2, 6, 7, 15, 16, 17, 21, 22, 23, 24 and 25; 1000 of these trees have been managed to date. Residents and park users near trees to be treated by pesticide injection will be notified directly through a letter drop by mail.

Foray 48B (a.i. Bacillus thuringiensis Subspecies kurstaki)

The active Ingredient of Foray 48B is *Bacillus thuringiensis* subspecies *kurstaki* (Btk), a biological control agent that results in the death of butterfly and moth caterpillars feeding on leaves. Foray 48B (Btk) is only effective in the gut of the moth and butterfly caterpillars and is not harmful to humans, mammals, birds or other animals. Foray 48B (Btk) is not specific to LDD moth but will only impact caterpillars that are in a sensitive life stage at the same time as LDD moth.

The commercial formulation Foray 48B (Btk) is registered and approved for use by the Pest Management Regulatory Agency of Health Canada (PMRA) against LDD moth in Canada. Pest control is attributed to Btk a microorganism (bacterium) and to its associated metabolites. Btk is included in the allowable list of active ingredients for cosmetic use in the Ontario Pesticides Act. This means that it is approved for use by the general public to control pests on lawns, gardens, driveways and other areas such as in parks or around the home.

Application of BoVir (a.i. Lymantria dispar Nucleopolyhedrovirus) in High Park

The LDD moth infestation was particularly severe in High Park in the summer of 2021 and most oak trees in the park were completely defoliated by the LDD caterpillars. Although many trees flushed new leaves before the end of July, the severe leaf loss caused stress to these already vulnerable tree species and may have predisposed them to other secondary tree health problems. Such stress can lead to large scale decline and mortality of oaks in the unique black oak savannah ecosystem.

The egg mass surveys conducted this fall identified high volumes of new, viable LDD egg masses throughout the densely forested areas and in very large oaks. Aerial application of a pesticide is the only effective way to intervene and mitigate major defoliation in this area for 2022. An intervention is needed in 2022 to mitigate the impact of another season of potential defoliation by LDD moth in High Park and to prevent further decline of oak species, particularly black oaks.

In previous aerial sprays, the City has used a pesticide known as Foray 48B (Btk), proven to be effective in control of LDD moth. Urban Forestry has heard concerns from experts including local naturalists of the potential impact of Foray 48B (Btk) on non-target species of moths. Out of an abundance of caution, this pesticide has not been applied to High Park natural areas previously. Products containing Btk as the active ingredient have only been used in small areas of High Park, outside the natural areas. Due to the specific timing required for effective control for LDD moth, the application may coincide with timing for larval development for other butterfly/moth species.

Therefore, an alternative product, BoVir (LdMNPV), is preferred for use in High Park as it is highly selective to LDD moth alone, and will not threaten other moths and butterflies. Pest control is attributed to the active ingredient LdMNPV, a microorganism (virus) and to its associated metabolites. Although Foray 48B (Btk) has proven effectiveness and BoVir (LdMNPV) is more expensive and possibly more difficult to apply, an aerial spray of the product BoVir (LdMNPV) is proposed over 128 ha for High Park in 2022 if the emergency registration is approved by the Pest Management Regulatory Agency.

The product BoVir is not currently registered for use in Canada under the Pest Control Products Act. Over the past year Urban Forestry has supported negotiations to request emergency registration of BoVir (LdMNPV), to allow for use in the period from April 1, 2022 to March 31, 2023 to address LDD Moth outbreaks in the City of Toronto in 2022. The Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) is the provincial department responsible for addressing invasive species that impact the natural environment within Ontario; and ONDMNRF is the sponsor for the emergency registration application for BoVir Suspension Concentrate Insecticidal Virus (active ingredient *Lymantria dispar Nucleopolyherovirus*, (LdMNPV). Andermatt Canada Inc., the registrant for BoVir (LdMNPV), has provided the NDMNRF and the City of Toronto with a letter of support for the 2022 emergency registration application of BoVir (LdMNPV) Suspension Concentrate Insecticidal Virus for the control of LDD moth in forests, woodlands and residential areas. They have completed a pre-submission

consultation with Pest Management Regulatory Agency (PMRA) in August 2021, and intend to submit an application for registration in 2022.

At the time this report was written, the emergency registration was still under review by the Pest Management Regulatory Agency. City of Toronto staff continue to be involved in discussions with NDMNRF, Andermatt Canada Inc., the Ontario Ministry of the Environment, Conservation and Parks (MECP), Canadian Forestry Service (CFS) and PMRA to review information necessary to support the application for emergency registration of BoVir. If emergency registration is not approved, staff will use Integrated Pest Management (IPM) techniques where possible in an attempt to manage caterpillars, but many trees in High Park will be unprotected and subject to potential defoliation in 2022.

TreeAzin™ (a.i. Azadirachtin)

TreeAzin[™] is a bioinsecticide that has been approved for injection of trees in the control of LDD moth. Injection requires that this product be injected under a tree's bark, directly into the conductive tissues of the treated tree. The active ingredient in TreeAzin[™] is Azadirachtin, a seed extract from the Neem tree (*Azadiracta indica*). When used as labeled, TreeAzinTM poses minimal risk to humans, mammals, birds or other animals.

Communications

Prior to implementation of an aerial spray program in 2022, Urban Forestry will work with Strategic Communications to develop and execute a communications plan. Public notification as referenced in the communications plan must be approved by the Ministry of the Environment, Conservation and Parks. This plan may include meetings with Councillors and residents as well as updates to the City and Urban Forestry websites, media releases, social media posts, notices to residents in the affected areas, and signage posted along streets and in public areas such as libraries.

Engagement of Contracted Services Required to Implement a Control Program

In past years, the City of Toronto has worked with neighbouring municipalities to coordinate LDD moth control in order to find efficiencies and share information related to planning the aerial spraying and obtaining provincial permits. City of Toronto staff continue to communicate and participate in an exchange of information with these municipalities about their control programs. At the time of writing this report, Mississauga and Oakville are planning to implement aerial spray programs to control LDD moth outbreaks in 2022.

The aerial spray requires federal and provincial permits to fly the double-engine helicopter used to apply the spray at a low elevation over residential areas. Only one contractor known as Zimmer Air Service Inc. has the capacity to provide this specialized service and as a result, staff anticipate that it will be necessary to enter into a non-

Non-Competitive Contract with Zimmer Air Service Inc for Lymantria dispar dispar (LDD) moth outbreak control - 2022 Page 9 of 40 competitive procurement contract with them as was done in previous years of the aerial spray program.

Zimmer Air Service Inc. quoted \$960.00/ha for the two Foray 48B (Btk) applications and \$1,326.00/ha for the two BoVir (LdMNPV) applications with an additional \$3,200.00 charge for equipment maintenance fees. The price for application is related to both area and the distribution of treatment zones as well as the number of pesticide products to be permitted and mixed and loaded for application. This is considered to be a fair price for the prescribed rate for a two-application based program on the proposed 786 ha (Foray 48B (Btk) over 658 ha and BoVir (LdMNPV) over 128 ha). The price is comparable to what was charged in the previous years.

Spraying Privately Owned Trees

Approximately 60 per cent of Toronto's trees are located on private property; therefore, the protection of private trees is important to the goal of maintaining canopy cover. If only City-owned trees are treated for control of LDD moth, the likelihood that the insect population would spread to other areas of Toronto is much greater.

LDD moth is a serious nuisance to the residents living in outbreak areas. The crawling caterpillars and their droppings on private property become intolerable for many residents. Urban Forestry is inundated with public complaints related to the nuisance that results from the caterpillar stage of the LDD moth, which causes substantial interference with the ability of residents to use or enjoy their properties.

The proposed areas for aerial spray treatments contain both City and privately-owned trees. Due to the extent and scope of the LDD moth infestation in these areas and the availability of a landscape level control option for this pest, a program of aerial spraying is being recommended. Because aerial spray operations specifically target defined geographical areas and not individual trees, the treatment of privately-owned properties is unavoidable.

Authority for Spraying Private Properties and Trees

Under the *City of Toronto Act*, the City has authority to provide any service or thing that the City considers necessary or desirable for the public and to pass by-laws respecting the economic, social and environmental well-being of the city as well as the health, safety and well-being of persons.

In an effort to protect the City's tree canopy against invasive pests, it is necessary for the City to implement a LDD moth control program in 2022, including an aerial spray in certain areas of the City.

This program will aid in the suppression of the LDD moth population in the affected areas and prevent severe defoliation of trees. In addition it would keep LDD moth populations at tolerable levels until the next cyclical outbreak occurs. Urban Forestry will continue to monitor for the presence of LDD moth across the City and address future Non-Competitive Contract with Zimmer Air Service Inc for Lymantria dispar dispar (LDD) moth outbreak control - 2022 Page 10 of 40

outbreaks as required. Urban Forestry is also in communication with authorities regarding the potential future approval to apply spray in Toronto using drones, as a less expensive treatment option.

The Fair Wage Office has reported that Zimmer Air Service Inc. has indicated that it has reviewed and understands the Fair Wage Policy and Labour Trades requirements and has agreed to comply fully.

CONTACT

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SIGNATURE

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ATTACHMENTS

Attachment 1: Proposed Aerial Spray Areas by Ward

Attachment 2: Index Map of Proposed Aerial Spray Areas

Attachment 3: Maps of Individual Spray Blocks for 2022 LDD Moth Aerial Spray

Ward Number	Ward Name	Spray Block # (see maps Attachment 3)	Name of Area to Be Sprayed within the Ward	Area (ha)
4	Parkdale-High Park	27	High Park	128
6	York Centre	24	Rockford	23
15	Don Valley West	20	Sunnybrook	41
16	Don Valley East	2, 10, 11, 12, 13, 22, 23	Valentine, Sagebrush, Sulkara, Deepwood, Crossburn, Laurentide, Three Valleys	78
17	Don Valley North	14, 18, 19	Lescon, Mango, Beardmore	143
18	Willowdale	25	Gwendolen	5
19	Beaches-East York	15	Glen Stewart	21
20	Scarborough Southwest	16, 17, 26	Fallingbrook, Kingsbury, Crescentwood	16
21	Scarborough Centre	1, 9	Rossander, Thompson Memorial	81
22	Scarborough- Agincourt	8	Huntingwood	24
23	Scarborough North	6, 7	Stubbswood, Chartland	78
24	Scarborough- Guildwood	3, 4	Seven Oaks, Purpledusk	130
25	Scarborough- Rouge Park	5, 21	Gennela, UofT Scarborough	21, 18

Attachment 1: Proposed Aerial Spray Areas by Ward



Total Treatment Area: 786 Ha.

Attachment 2: Index Map of Proposed Aerial Spray Areas

Attachment 3: Maps of Individual Spray Blocks for 2022 LDD Moth Aerial Spray

Spray Block 1 - Rossander (Proposed)

- Total Treatment Area: 6 Ha.
- City Ward: Scarborough Centre (21)



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Spray Block 2 - Valentine (Proposed)

- Total Treatment Area: 21 Ha.
- City Ward: Don Valley East (16)



Spray Block 3 - Seven Oaks (Proposed)

- Total Treatment Area: 118 Ha.
- City Ward: Scarborough-Guildwood (24)



Spray Block 4 - Purpledusk (Proposed)

- Total Treatment Area: 12 Ha.
- City Ward: Scarborough-Guildwood (24)



Spray Block 5 - Gennela (Proposed)

- Total Treatment Area: 21 Ha.
- City Ward: Scarborough-Rouge Park (25)



Spray Block 6 - Stubbswood (Proposed)

- Total Treatment Area: 11 Ha.
- City Ward: Scarborough North (23)



Spray Block 7 - Chartland (Proposed)

- Total Treatment Area: 67 Ha.
- City Ward: Scarborough North (23)



Spray Block 8 - Huntingwood (Proposed)

- Total Treatment Area: 24 Ha.
- City Ward: Scarborough-Agincourt (22)



Spray Block 9 - Thompson Memorial (Proposed)

- Total Treatment Area: 75 Ha.
- City Ward: Scarborough Centre (21)



Spray Block 10 - Sagebrush (Proposed)

- Total Treatment Area: 12 Ha.
- City Ward: Don Valley East (16)



Spray Block 11 - Sulkara (Proposed)

- Total Treatment Area: 7 Ha.
- City Ward: Don Valley East (16)



Spray Block 12 - Deepwood (Proposed)

- Total Treatment Area: 11 Ha.
- City Ward: Don Valley East (16)



Spray Block 13 - Crossburn (Proposed)

- Total Treatment Area: 6 Ha.
- City Ward: Don Valley East (16)



Spray Block 14 - Lescon (Proposed)

- Total Treatment Area: 95 Ha.
- City Ward: Don Valley North (17)



Spray Block 15 - Glen Stewart (Proposed)

- Total Treatment Area: 21 Ha.
- City Ward: Beaches-East York (19)



Spray Block 16 - Fallingbrook (Proposed)

- Total Treatment Area: 4 Ha.
- City Ward: Scarborough Southwest (20)



Spray Block 17 - Kingsbury (Proposed)

- Total Treatment Area: 5 Ha.
- City Ward: Scarborough Southwest (20)



Spray Block 18 - Mango (Proposed)

- Total Treatment Area: 36 Ha.
- City Ward: Don Valley North (17)



Spray Block 19 - Beardmore (Proposed)

- Total Treatment Area: 12 Ha.
- City Ward: Don Valley North (17)



Spray Block 20 - Sunnybrook (Proposed)

- Total Treatment Area: 49 Ha.
- City Ward: Don Valley West (15)



Spray Block 21 - UofT Scarborough (Proposed)

- Total Treatment Area: 18 Ha.
- City Ward: Scarborough-Rouge Park (25)

Private Property



Spray Block 22 - Laurentide (Proposed)

- Total Treatment Area: 5 Ha.
- City Ward: Don Valley East (16)



Spray Block 23 - Three Valleys (Proposed)

- Total Treatment Area: 16 Ha.
- City Ward: Don Valley East (16)



Spray Block 24 - Rockford (Proposed)

- Total Treatment Area: 23 Ha.
- City Ward: York Centre (6)



Spray Block 25 - Gwendolen (Proposed)

- Total Treatment Area: 5 Ha.
- City Ward: Willowdale (18)



Spray Block 26 - Crescentwood (Proposed)

- Total Treatment Area: 7 Ha.
- City Ward: Scarborough Southwest (20)



Spray Block 27 - High Park (Proposed)

- Total Treatment Area: 128 Ha.
- City Ward: Parkdale-High Park (4)

