

March 16, 2017

To: Members
Community & Protective Services Committee

Re: February 2017 Pesticide Status Update - Tree Related Insect Control and Week Control
in Regina Parks

RECOMMENDATION

That this report be received and filed.

CONCLUSION

Pesticide reduction strategies are working as designed.

BACKGROUND

In June of 2016, Administration was asked to provide an informal high-level overview of the City's Pesticide Programs.

DISCUSSION

There are four specific areas this document will provide a synopsis of the City's control programs.

- Part I will discuss Cankerworm, Tent Caterpillar and Fall Web Worm Issues.
- Part II will give a brief summary of the current state of the Dutch Elm Disease Program.
- Part III will provide a description of the Fall Herbicide Program (AKA dandelion) and Non- Selective Herbicide Program.
- Part IV will describe current considerations for program changes for 2017.

Part I Cankerworm, Tent Caterpillar and Fall Webworm Issues

Cankerworms

Cankerworm infestations are typically cyclical in nature, often with extreme high populations followed by a population decline every seven to ten years. For 2016, the cost for cankerworm and tent caterpillar treatment was \$169,000, which is 9.8 per cent of the yearly Pest Control budget. (As cankerworms and tent caterpillars are treated at roughly the same time of year, this cost reflects control of both insects).

The most recent peak of the cankerworm population was in 2010. The City treated approximately 35,000 elm trees. Populations declined during the 2014 and 2015 seasons, with just 1,100 trees treated in 2014. The 2015 season saw cankerworm populations that were minimal. Treatment activities were not required.

Cankerworm monitoring predicted that this population would begin to increase for the 2016 season.

Two areas of the city were identified as exceeding threshold and warranted control activities to protect tree assets. As a result, approximately 1,500 trees were treated with a natural occurring insecticide called *Bacillus thuringiensis* (BT) spray.

Administration also uses Service Request (SRs) to see if monitoring “got it right”. For this past 2016 season, only 12 SRs were received asking for cankerworm control. As a comparison, 354 Service Requests were received in 2010.

Looking forward to 2017, fall monitoring counts show that the population is continuing to expand. Roughly 30 per cent of the city by area may need to be treated during 2017. Even though this is a significant increase, populations have still not reached the epidemic levels of 2010.

Tent Caterpillars

In Regina’s history, tent caterpillars were minimal; however, in 2016, populations were at their highest level on record. The most likely cause was the warmest winter conditions on record, which in turn led to a very high survival rate of overwintering egg masses.

The City’s response to tent caterpillars was largely based on a complaint approach. During this event, 679 SRs were received for tent caterpillars. To respond to the issue, Administration looked at the SRs as an indication of pattern to determine the worst affected areas. In short, the worst affected areas were the newest areas of the city on the newest trees (ex: Harbour Landing, The Creeks and Lakeridge Addition). By the end of the infestation event, 7,200 trees were treated using a BT spray. Monitoring activities are indicating that tent caterpillar populations may remain high for the next few years. We are preparing our crews for this change, by ensuring equipment and staffing and product is ready.

Fall Web Worm

Fall webworm is the third insect for which the City has a control program. Typical damage from this insect is most noticeable during August. The City provides this service on a request for service basis, as the insect selects a specific tree. The control program utilizes a BT based spray treatment. For 2016, there were no requests for service. During a typical year there are roughly 125 SRs. There was no spending on this program during 2016. Historically, this program spends approximately \$6,700/year.

Part II Dutch Elm Disease Program

Regina has approximately 77,000 public and privately owned elms. This represents close to 30 per cent of the total tree inventory of Regina. Elms are Regina’s largest and most highly valued trees. As an asset, the municipally owned portion elm inventory is estimated to be valued at \$800 million, according to the International Society of Arboriculture (ISA) urban forest formula.

Dutch Elm Disease (DED), if left unchecked, has the potential to destroy the elm inventory in a short period of time. For the past 25 years, Regina has used best practices to slow the spread of DED with positive results. Since 1981, Regina has only lost 94 trees to DED, up to and including the current year. For 2016, only three trees were lost to this disease during the growing season.

The cost for this program in 2016 was approximately \$206,000. Historically approximately 12 per cent of the Pest Control budget is spent on the monitoring and control of Dutch Elm Disease.

Part III Weed Control Programs

Fall Selective Herbicide Program (also known as Dandelion)

During 2013, the Community and Protective Services Committee approved the Herbicide

Reduction Strategy through the use of implementing action thresholds, to determine which parks required treatment for the control of weeds affecting city parks. Essentially treatment of a park space would only be completed once the predetermined action threshold was exceeded.

If treatment was deemed to be required, this would be conducted during the fall of the same year. Fall treatment is considered best practice for the control of perennial weeds for two reasons:

1. As the weeds begin to go into dormancy, the herbicide is more effectively translocated into the root of the plant making a more effective kill. Herbicides like 2,4D can be used in the spring; however, the results are less effective, often only killing the plant tops for a short period of time. This then requires a second treatment later in the fall to bring weed levels to a more manageable level.
2. Parks spaces are used more frequently during the spring and early summer. Space is used for children's sporting activities, minor sports, walking paths and other activities. When the city applies herbicides to parks during the fall there is a reduced chance of accidental or long term exposure to residents.

Survey Method

As part of our best practices we are in constant communication with other municipalities to compare and exchange information on our programs. Other municipalities have developed similar threshold survey formulas and we have used portions of their criteria to modify our own program at the City of Regina.

To determine where treatments are required, a weed survey is done annually. In 2016, approximately 30 per cent of the class A, B and C parks and all of the athletic fields were surveyed. One hundred per cent of the park inventory is surveyed on a three year cycle. Surveys are conducted from mid-June to mid-July.

Thresholds are utilized to determine if treatment is required. This is a two part process. The thresholds for the classes of park space are as follows:

- **Athletic fields: 5 weeds/m² covering 25 per cent of space**
- **Class A Parks: 5 weeds/m² covering 50 per cent of space**
- **Class B Parks (On Central Irrigation System): 7 weeds/m² covering 50 per cent of space**
- **Class B Parks (Not on Central Irrigation system): 10 weeds/m² covering 50 per cent of space**
- **Class C Parks: 20 weeds/m² covering 50 per cent of space.**

All athletic fields and parks that were selected for treatment in 2016 exceed the established threshold.

Results

The results of this year's survey indicate that 49 of the 183 parks surveyed, require treatment. In terms of the overall health of the City's turf inventory, 451 hectares of park space was surveyed, 13.8 per cent of parks required treatment. Since the implementation of this reduction strategy, 2,4D usage has been reduced by 63.6 per cent.

The results show that the treatment program is working effectively. When a space is treated, a follow-up survey is conducted to compare pre-treatment and post-treatment weed levels. Ninety per cent of the parks treated have been brought back to under threshold with just one treatment.

In 2016, \$185,000 was spent on weed control, which represents 10.7 per cent of the Pest Control budget.

Resident responses to the Herbicide Program have been mixed. In 2016, the Parks and Open Space Department received 207 complaints for weed related issues. By comparison, the average for weed complaints is 150/year.

Calls are broken down for 2016 and identified as follows:

Type of Concern	Number of Complaints	Comments
Park weed complaints	64 complaints	Average calls per year 83
Buffer weed complaints (Ring Rd., Lewvan, etc.)	15 complaints	Average calls per year 22
Easements (regarding cutting issues)	57 complaints	No average kept for previous years
Other Miscellaneous Space	64 complaints	This also includes non-City of Regina Space, ex. rail roads, and brownfield sites. No average kept for previous years
Against Herbicide Use	7 complaints	No average kept for previous years

Non - Selective Herbicide Program

This program is intended to control weeds and grasses in areas where there is no intention for plant growth of any kind. An example would be hard surfaces such as paving stone, sports tracks with crusher dust, cracks between building and pavement. Parks has also used this for fence lines or stub posts in difficult to manage areas.

Part IV Current Considerations for 2017

- Conduct a pesticide use survey with residents. The last pesticide survey was done in 2010. After review, these measures may be incorporated and considered into future programs.
- Continue to reach out to western Canadian Municipalities for information on their Herbicide Programs. This will ensure that the City's delivery of this program will continue to use best practices amongst its peers.

RECOMMENDATION IMPLICATIONS

Financial Implications

The operating budget for Pest Control is \$1,746,960 with the actual funds used being \$1,683,000.

Environmental Implications

None with respect to this report.

Policy and/or Strategic Implications

None with respect to this report.

Other Implications

None with respect to this report.

Accessibility Implications

None with respect to this report.

COMMUNICATIONS

Communication strategies will be developed in 2017 to address tree-related insect control and weed control issues that could arise as highlighted in this report.

DELEGATED AUTHORITY

As this report is for informational purposes only, it falls within the delegated authority of this Committee.

Respectfully submitted,



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Parks and Open Space Department

Respectfully submitted,



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