
Urban Forestry Cottony Ash Psyllid Response Plan

Recommendation

That the report of the General Manager, Community Services Department, be forwarded to City Council recommending:

1. That the Capital Project and corresponding funding plan, as outlined in this report, be forwarded to City Council for consideration during the 2018 Business Plan and Budget Review; and
2. That the Administration report back regarding status of the 2018 program and funding options for 2019.

Topic and Purpose

The purpose of this report is to provide an update on the progress to date in dealing with the cottony ash psyllid infestation impacting Black and Mancana Ash trees in the city, as well as to request approval for a capital project in 2018 to continue managing the response to this emerging pest issue.

Report Highlights

1. Saskatoon is currently experiencing an infestation of the cottony ash psyllid pest, which is negatively impacting the city's urban forest.
2. A city-wide canopy assessment completed in the summer of 2017 indicates there are approximately 1,000 trees that meet the criteria for removal at this time. It is expected that if there is not a collapse of the psyllid population, there may be loss of additional trees.
3. Insecticide treatments have been trialed in Saskatoon to limited success and have been shown to only delay the need for tree removal.
4. Tree removal and replacement of affected trees in appropriate sites with another tree species is the most viable option to ensure the long-term health of Saskatoon's urban forest.
5. Given the state of the current psyllid susceptible ash trees and the underlying threat to all ash species by emerald ash borer, this is an opportunity to invest in increased diversity and a more resilient urban forest.

Strategic Goals

This report supports the Strategic Goals of Continuous Improvement and Quality of Life through offering citizens a clear plan for managing dead and/or dying trees adjacent to their property that have been impacted by the cottony ash psyllids, as well as addressing trees in Parks and Open Spaces that impact citizens enjoyment and use of these spaces. This report also supports the Strategic Goal of Environmental Leadership

through planning for diversification of our urban forest to protect our resource against impacts of additional invasive pest species.

Background

Psyllids are very small insect pests that are native to central Europe but have made several appearances in North America including recent infestations in North Dakota, Minnesota and Alberta. The first outbreak of psyllid in Saskatoon occurred in 2006. At that time, 227 trees were removed and 127 trees were injected with an insecticide on a trial basis. The psyllid population then crashed in 2009 for unknown reasons and treatment options were no longer pursued.

The current outbreak of psyllid was initially detected in the summer of 2015. In the fall of 2015, egg counts were completed on 76 black ash trees across six neighbourhoods and found that the psyllids were widespread on black ash trees in Nutana, Sutherland, and the Central Business District.

In 2016, the situation continued to be monitored and signs of increasing dieback of susceptible trees was observed in the central Business Improvement Districts (BIDs). Egg counts in the fall of 2016 indicated there was an increase of eggs over the previous year, in the central business district and surrounding neighbourhoods, but egg counts in other neighbourhoods were still low.

In December 2016, the Executive Director of the Riversdale BID submitted correspondence to the Standing Policy Committee on Planning, Development and Community Services requesting an action plan on the rejuvenation of the tree canopy in the Riversdale district. At that time, the Committee was informed that the Parks Division was aware of the deterioration and loss of trees in the central business districts and was planning for the removal and replacement of trees in 2017. This tree loss was assumed to be attributed to a combination of stressors on the trees in conjunction with the recent psyllid outbreak. At that time, the extent of the tree loss was expected to be a total of approximately 100 trees in the BIDs and on the 22nd Street centre median.

Throughout 2017, Parks has worked closely with the BIDs to manage and mitigate the impacts on the urban forest from this insect. The deterioration of impacted trees has been more extensive than originally expected; therefore, this report is being brought forward to provide Committee and City Council with information on the current state of the psyllid outbreak and provide options on how to respond to the impacts of this insect and other emerging threats through 2018.

Report

2017 Psyllid Update

In the spring of 2017, there was a noticeable increase in the number of trees defoliated as a result of the current cycle of native forest tent caterpillars. After most trees impacted by forest tent caterpillar were re-leafing in the early summer, it became clear that psyllid susceptible trees were showing signs of more significant decline city-wide.

Urban Forestry Cottony Ash Psyllid Response Plan

At this time, Urban Forestry initiated a city-wide canopy assessment to collect data and determine the extent of tree decline.

Using data from the canopy assessment and inventory information from tree management software, Urban Forestry calculated the number of impacted trees to date and those with the potential to be impacted. The criteria used for the canopy assessment was the percentage of tree defoliation and dieback. Black ash trees and black ash hybrid trees that were 50% or greater defoliated are considered to have met the criteria for removal.

In 2017, 92 trees have been removed and replaced in the Downtown, Riversdale, and Broadway BID areas and 29 trees have been removed along 22nd Street. Using this canopy assessment criteria, there are an additional 1,000 trees that warrant removal and replacement in 2018. It is expected that there will be additional deterioration of psyllid susceptible trees in 2018 and potentially an even larger number of trees will need to be removed and replaced in future years.

Treatment Plans

The Urban Forestry and Pest Management Sections have worked together to formulate plans that could offer some protection to susceptible trees. As a result of this joint effort, a trial program of insecticide injections before bud break in spring 2017 was planned in the central BIDs to determine whether these insecticide injections might be an effective way to reduce or slow down the expected tree loss. Results of this trial indicate that injecting trees that were already in decline was not effective as many of the injected trees continued to rapidly decline.

In addition to the streetscape trees in the BIDs, relatively healthy trees in residential neighbourhoods surrounding the downtown were injected in a broader trial using two insecticides and a blind solution. Initial data from the trees included in this trial has indicated that one insecticide trialed is associated with decreased numbers of adult psyllids; however, it is the Administration's opinion that the negative impacts to other beneficial insects and the damage caused to the trees by drilling holes for insecticide application outweigh the anticipated long-term benefit of injecting trees. Parks will continue to collect data from this trial and continue canopy assessments and egg counts. Urban Forestry and Pest Management staff work with their counterparts in other Western Canadian cities experiencing psyllid outbreaks to share information and best practices and will continue to research options to consider future treatment trials.

Beyond the injectable insecticides, there are some other treatment options available. Amongst the registered products to treat psyllids, permethrin is reported as an effective treatment for controlling the insect when applied at the right time. The use of insecticidal soap has also had some anecdotal effects. Targeted spray programs would require a capital investment in spraying equipment and labour or the reliance on contractors to provide this service. Psyllids are very mobile (referred to as tree lice) and insect infestations are assumed to impact both public and private trees so it would be very difficult to attain significant control in the long run where the susceptible trees are

spread out. For these reasons, Administration is not recommending a broader application of these products across the city at this time; individual home owners who wish to treat trees on their private property do have the option to do so and Parks will provide information on these options on the City's website.

Given the combination of environmental factors Saskatoon is facing and the data gathered in the canopy assessment, Urban Forestry is recommending a program of tree removal and replacement to mitigate the tree loss from psyllids. The plan is to remove the tree and stump for the 1,000 trees that have been identified in 2017 as being greater than 50% defoliated. This would be done in 2018 and accomplished through a combination of in-house and contracted work. Doing all the removal work in 2018 will allow an efficient move through the city on a community by community basis. In 2018, 400 of these tree removal sites would then be replanted with stock from the nursery. The remaining removal sites would be replaced in 2019. Spreading the replanting out over two years gives the nursery the time needed to plan and manage their stock and limits the impacts to the other planting programs. While the community tree planting program would not be impacted, the plant by request program would meet its service level in 2018 but would see a reduction in available trees in 2019. The urban reforestation program would have its resources redirected to the psyllid replanting program. The nursery is working through some continuous improvement efforts to increase their production numbers to make more tree stock available for planting programs.

The total estimated cost to remove and replant the trees that were identified during the canopy assessment in 2017 is \$1,180,000. Costs and proposed funding are detailed in Attachment 1.

Experience of Other Cities

The rapid deterioration of psyllid susceptible trees in Saskatoon is not unlike the experience in other prairie cities including Calgary, Edmonton, Red Deer, and Grand Prairie. Although attempts to control psyllids through the use of insecticides was initiated in each of these cities, there continued to be substantial loss. Drought was also associated with the loss of trees, making it difficult to determine the effects of psyllids alone. Forestry and pest management representatives from Edmonton and Calgary have indicated they have lost most of the susceptible trees in their respective cities. Both Calgary and Edmonton no longer plant black ash trees.

Other Emerging Insect Threats

Another devastating insect pest that has been responsible for the loss of millions of ash trees across North America is the emerald ash borer. Saskatoon has not yet observed this insect within the city, but it is approaching both from the east and the south. This insect threatens all Ash (*Fraxinus*) species including those already impacted by psyllids. Ash species presently make up the largest percent of the city tree inventory at approximately 27%. Ash trees were planted in large numbers throughout prairie cities in response to the threat of Dutch elm disease and before the threat of emerald ash borer was known. The large number of ash trees now makes our urban forest

Urban Forestry Cottony Ash Psyllid Response Plan

vulnerable to the introduction of emerald ash borer. The need to plant a wide variety of hardy, drought tolerant trees is very important to building resilience in the urban forest. The opportunity to diversify the urban forest through the removal of ash trees impacted by psyllids and replanting other tree species in their place will help prepare the city for the arrival of the emerald ash borer.

Options to the Recommendation

Committee may direct the Administration to further investigate additional options to the removal program proposed in this report.

Public and/or Stakeholder Involvement

Parks has worked closely with the Executive Directors of the three central BIDs to provide them with information about this emerging threat including hosting them at a joint meeting. Parks and the BIDs worked together to coordinate the removals and replacements that have occurred in 2017.

Parks has received over 150 calls in 2017 inquiring about susceptible trees in decline. Callers are provided information about the canopy assessment program and the emerging pest issue. They are given the same information as is posted on the City's website.

Parks will also work with the Community Associations most affected by the psyllid outbreak to ensure their residents are kept informed on this emerging issue.

Communication Plan

Parks continues to work closely with the Communications Division to provide updated information about this emerging issue on the City website as it becomes available. A PSA was issued in spring 2017 and an information sheet is available on the City website. Targeted household communication will be developed as part of the removal program, should it be approved.

Policy Implications

Use of the Parks Grounds Maintenance Stabilization and Pest Control reserves for this program must be approved by City Council, as an exception to Corporate Policy No. C03-003 Reserve for Future Expenditures (due to the unique nature of this infestation).

Financial Implications

Financial Implications are outlined on Attachment 1.

A \$1,180,000 capital project is proposed, spanning a two-year period with the 2018 portion of \$757,000 funded from the following "one-time" contributions:

- a reallocation of operating program funds from the Urban Forestry program of \$150,000;
- reallocation of \$80,000 from the Conservatory operating budget due to the temporary closing of the facility;

Urban Forestry Cottony Ash Psyllid Response Plan

- the allocation of all available funds from the Deferred Tree Replacement Account of \$200,000;
- the allocation of \$140,000 from the Parks Ground Maintenance Stabilization Reserve;
- \$67,000 from the Pest Control Reserve; and
- \$120,000 from the Community Services Department Capital Reserve.

The funding for the remaining estimated capital project budget in 2019 of \$423,000 will be addressed in a follow up report that will update the status of the project and explore options with the possibility of identifying long-term funding to deal with future infestations.

Currently, the Parks Ground Maintenance Stabilization Reserve has a balance of \$336,400. It is anticipated that \$196,400 will be required in 2017 to offset additional water used during a period of reduced rainfall.

Environmental Implications

There will be a negative environmental and amenity impact in the short term, reflecting the loss of trees. In the long run, increased diversity should provide greater resiliency for the urban forest.

Other Considerations/Implications

There are no privacy or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

In accordance with the recommendation, a follow-up information report will be provided to Committee in 2018 on progress of the capital project, should it be approved.

Public Notice

Public Notice, pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. Costs Associated with Psyllid Impacted Tree Removal Program in 2018-2019.

Report Approval

Written by: Michelle Chartier, Superintendent, Urban Forestry Section

Reviewed by: Darren Crilly, Director of Parks

Kerry Tarasoff, CFO/General Manager, Asset and Financial Management Dept.

Approved by: Randy Grauer, General Manager Community Services Department
Murray Totland, City Manager

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