



Report to: General Committee

Report Date: May 26, 2015

SUBJECT: Emerald Ash Borer Update – Spring 2015

PREPARED BY: Barb Rabicki, Manager, Parks Operations Ext. 4857

RECOMMENDATION:

- 1) THAT the staff report dated May 26, 2015 entitled “Emerald Ash Borer Update – Spring 2015” be received
- 2) THAT staff be authorized and directed to do all things necessary to give effect to this resolution

PURPOSE:

The purpose of this report is to provide an update to Council regarding the progress of the Emerald Ash Borer program including target deliverables for 2015.

BACKGROUND:

Emerald Ash Borer (EAB), an invasive insect which has caused widespread destruction of ash trees across northeastern United States as well as Ontario and Quebec, was detected in the City of Markham in 2011. City staff, in partnership with York Region and the Canadian Food Inspection Agency (CFIA) had been proactively planning for management of the significant impact on urban forests for some time.

Markham’s Forestry Division undertook an inventory of public ash trees on boulevards and in manicured areas of parks in 2012. Markham also retained the services of a leading arboriculture consulting company to prepare the Emerald Ash Borer Strategy, to provide options and guide early phases of treatments, removals, and replanting of trees on public boulevards and manicured areas of parks. The issue of woodlot and natural areas were to be undertaken subsequently.

A pilot project was also undertaken in 2012 by City Forestry staff, who injected 20 trees with TreeAzin in Ashton Meadows Park.

The City’s EAB Management Plan was presented to Markham General Committee of Council on November 19, 2012. This comprehensive plan was the result of a number of critical best-practice steps required to develop the most effective response to this invasive pest, at that time. The City of Markham, similar to other municipalities, has continued to refine its management strategy, incorporating new research and information as EAB management continues to evolve. This report serves to inform Council of the progress of the EAB management plan.

In November 2012, Staff presented the estimated total EAB program cost of \$15.00M for management of EAB on boulevards and manicured areas of parks. The total program cost was subsequently revised to \$13.10M in 2013.

Forestry staff undertook ash tree reassessments in 2013, followed by injection of 1,080 trees on boulevards and in manicured areas of parks. 1,800 ash trees were removed in 2013 and 130 trees were replanted.

The December 2013 ice storm was devastating to Markham's urban forest, and particularly ash trees, of which many were already compromised by infestation with EAB. The demonstrated fragility of the ash trees infested by EAB, as well as the escalating demise of the trees, shifted the focus in 2014 to removals.

Approximately 8,000 ash trees were removed in 2014, and 620 trees replanted in hardest-hit areas.

DISCUSSION:

Trees are key components of the urban environment, contributing greatly not only to the quality of life in Markham, but providing essential environmental benefits. Trees contribute to air quality improvements; carbon sequestration; energy savings in heating and cooling; enhanced property values; as well as storm water management, as trees soak up runoff that otherwise necessitates storm water infrastructure builds. Trees are now considered "green infrastructure" with quantitative, internationally-recognized capital valuations.

2015 EAB Management Plan

EAB management strategies typically require ongoing refinements of factors such as pricing and treatment numbers during the multi-year period of impact. Markham's management plan has subsequently been revised to include the most current information available at the time, and will continue to evolve. It will be updated accordingly to reflect changes in market conditions, shifting environmental factors, new treatment options, and experiential knowledge.

Annual Ash Tree Condition Re-assessment / All Tree Inventory and Risk Assessment

One of the greatest challenges facing City staff was the lack of availability of experienced consultants to undertake the tree inventory and risk assessment required for all trees city-wide, post ice-storm. Markham Forestry staff rose to the challenge, undertaking the largest municipal tree inventory and risk assessment ever done in-house in Canada; a huge undertaking normally contracted out. All City trees on boulevards have now been inventoried and assessed, totaling over 105,500 trees. Assessments have now shifted to parks and woodlands, where trails and woodland buffers of manicured areas of parks and private properties are now being assessed for hazard trees.

Tree Injections

Evolving research has recently determined that for areas of high infestation, annual injections of TreeAzin, a treatment option approved by the Pesticide Management

Regulatory Agency (PMRA) of Canada, will provide better efficacy than the previously recommended bi-annual injection program.

In 2014, 354 trees were re-assessed as meeting the criteria for injection, and injected; these trees will be re-evaluated June 2015 to determine whether they remain candidates for future injections. Significant decline has been previously evident, both in the pilot project trees in Ashton Meadows, as well as other trees which have been treated.

Staff will re-assess the trees to determine whether treatment with TreeAzin will continue. Alternately, treatment with another product approved by PMRA may be considered as an attempt to save the remaining ash trees still in good condition.

Tree Removal & Stumping Program

Markham has now entered the period of dramatic accelerated tree mortality, as experienced by other municipalities impacted by this destructive insect. Compounding the tree demise was the impact of the 2013 ice storm.

In 2015, 5,000 ash trees will be removed, and 7,000 stumps will be removed in preparation for planting replacement trees.

Woodland tree removals, including those along trails, the buffer areas of manicured parks, as well as in close proximity to private properties will be initiated in 2015 which were not included in the total program cost of \$13.10M. The ongoing inventory and assessment of these areas will provide further information as to the scope of the work to be undertaken to promote public safety.

Replanting Program

Given the focus on accelerated tree removals in 2014 to protect public safety, tree replanting was limited to initial plantings to start rebuilding canopy losses in areas hardest hit throughout the City, as a result of both ice storm damage and EAB impact. 620 trees were replanted in 2014.

In 2015, City staff will be replanting 6,000 trees across Markham, ensuring strong diversification of the urban forest to limit impact by future potential threats such as the Asian Longhorned Beetle, which recently re-surfaced in Mississauga in 2013. As the movement of people and products continues to grow rapidly, so does the threat of destructive, invasive pests which know no natural predators in their newly-adopted countries.

Tree replacements on City boulevards will continue to the City standard 60mm caliper, wherever available. Larger size trees will not be planted due to limitations of the size of the hole stumped in preparation for planting. Additionally, research shows that smaller trees generally establish faster than larger trees, and catch up in size within a couple years post-planting. Trees to be planted have been chosen from 26 genus and 51 varieties, with City arborists planning diligently to plant the “right tree in the right place” to optimize

survivability in harsh boulevard conditions, as well as minimize conflicts with overhead utilities.

Patience is needed during this time of attention to due diligence and public safety first, followed by rebuilding Markham's urban canopy for long term health of the environment, and citizens.

Corporate Communications

The EAB Communications Strategy continues to evolve in alignment with EAB management planning. The 2015 Communications Strategy provides strong focus on educating private property owners to remove hazard trees.

Actions include:

- Markham "Tree Talks" – to engage citizens to discuss tree concerns with City arborists. Booths will be staffed at events, festivals, community centres and garden centres to provide opportunity to ask questions of City staff in an approachable, friendly atmosphere
- Key messages updates on the City website frequently
- Media releases including Markham Life and newspapers, and social media messaging
- Strong ethnic media communications
- Door hangars conveying information about removals and replanting programs
- Posters placed prominently in City facilities including community centres and libraries
- Electronic Information Boards
- EAB updates to Councillors and City staff to facilitate clear, concise and consistent explanations to residents
- 3 videos uploaded to the City portal and YouTube; 4th video in production
- 6 public information sessions held in 2013
- Continued encouragement of residents as partners including community tree planting
- Direct mail messaging aimed at private property owners to encourage timely, cost- effective removal of ash trees on their own properties

Private Trees

Widespread public messaging by Corporate Communications will continue to provide information to encourage citizens to remove private ash trees which pose risks for safety, in a timely manner. City staff will continue to expedite private property owners' requests for permits for private ash tree removals.

2016/2017 EAB Management Plan

Monitoring and re-assessing the condition of Markham's trees will continue through 2017, and potentially beyond, should some ash survive the initial EAB impact.

At this time, treatment is expected to continue, with street and manicured areas of park removals estimated to be approximately 2,000 trees in 2016. An additional 400 trees will be monitored for removal, or potential treatment, for 2017.

Hazardous trees along trails, and in buffer areas of parks as well as woodlands adjacent to private properties will continue in 2016 and 2017.

Tree planting for 2016 will continue to be extremely strong, with 6,000 planned new trees, to continue to restore lost canopy of previous years. In 2017, tree planting is estimated to be 4,450 trees.

EAB Program Summary

| | Actual 2013/2014 | Budget 2015 | Forecast 2016 | Forecast 2017 | Total |
|----------------------|-----------------------------|------------------------|--------------------------|--------------------------|-----------------|
| Removals (# trees) | 9,800 | 5,000 | 2,000 | 400 | 17,200 |
| Replanting (# trees) | 750 | 6,000 | 6,000 | 4,450 | 17,200 |
| Costs | \$1.90M | \$4.50M | \$4.00M | \$2.70M | \$13.10M |

FINANCIAL CONSIDERATIONS AND TEMPLATE:

Staff presented the estimated total EAB program cost of \$13.10M in 2013 which included street trees and trees in manicured areas of parks and excluded costs associated with woodlands as no data was available at that time.

Assessments initiated in 2015 indicate significant risks in the woodland areas, which require initial removals of trees on trails, and in park buffer areas and woodlands adjacent to private properties. These costs were not included in the original estimate of \$13.10M.

Approximately 2,000 ash trees were removed in 2014 due to the ice storm, and the associated costs have been submitted to the Province for potential reimbursement. As well, the City received favourable pricing for contracted services related to tree removal and tree replanting. These funds will be redeployed to address the woodland areas. Therefore, the \$13.10 total program cost remains unchanged at this time. Staff will substantiate the savings associated with the 2,000 ash trees in a subsequent report.

Further assessment of woodland trees is required to determine potential impact, if any, on total program costs. This assessment is currently underway, and preliminary cost estimates will be provided in fall 2015, for Council consideration for 2016 budget deliberations.

Council approved a 0.5% tax rate increase in 2013 to fund the EAB infestation, equivalent to annual funds of \$0.59M. A dedicated interest bearing reserve fund for the EAB program was established. Funding of the EAB program as of May 26, 2015 is outlined below:

| | \$ in M |
|---|---------|
| Total program costs | 13.10 |
| Amount funded as of May 26, 2015: | |
| Life Cycle Replacement and Capital Reserve Fund | (4.14) |
| EAB Reserve Fund | (1.78) |
| Remaining funding requirement | 7.18 |

At the completion of the EAB program anticipated by 2017, the EAB reserve fund will be in a deficit position of (\$6.00M). Annual funds of \$0.59M will be used to replenish the reserve fund which will take approximately 10 years to fully recover the total program costs of \$13.1M.

All costs associated with tree removal and clearing of tree debris resulted from the 2013 ice storm have been included in the \$7.1M claim submission under the Ontario Ice Storm Assistance Program.

HUMAN RESOURCES CONSIDERATIONS

Additional contract staffing needs have been considered, and approved by Council as part of the 2015 capital budget process.

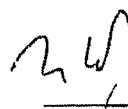
ALIGNMENT WITH STRATEGIC PRIORITIES:


The Emerald Ash Borer Management Plan aligns with the goals and objectives of the Municipal Services Greenprint as well as Parks, Recreation, Culture and Library Master Plan components of Markham's strategic priorities.

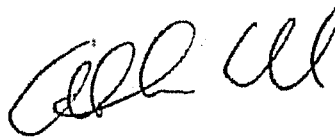
BUSINESS UNITS CONSULTED AND AFFECTED:

Corporate Communications, Information Technology, and Finance teams continue to assist with the program.

RECOMMENDED BY:

 MAY 21/15 per B. NICHOLSON
Bob Nicholson
Acting Director, Operations


Barb Rabicki
Manager, Parks Operations


Bill Snowball per
Brenda Librecz
Commissioner, Community
& Fire Services

ATTACHMENTS:
Presentation