



Report to: General Committee

Report Date: February 29, 2016

SUBJECT: Emerald Ash Borer 2015 Year End Summary

PREPARED BY: Barb Rabicki, Director, Operations, Ext. 4857

RECOMMENDATION:

- 1) THAT the staff report dated February 29, 2016 entitled "Emerald Ash Borer 2015 Year End Summary" 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 2015 year end results of the Emerald Ash Borer (EAB) program and inform target deliverables for 2016-17.

BACKGROUND:

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. The background below summarizes the accomplishments.

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; significant energy savings in heating and especially in cooling through hot summer months; 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.

2013-2015 EAB MANAGEMENT PLAN ACTUALS:

Removals and Stumping

In 2014, Operations completed the removal of 6,000 dead ash trees and ground 4,000 stumps in preparation for planting for the following season. The 2015 program continued with the removal of the next 5,000 dead ash trees from streets and expanded to parks. Another 7,000 stumps were grinded to prepare for new trees; resulting in all targets for removals and stumping met in preparation for spring planting.

City staff have been proactive in managing this project by planning and awarding to multiple contractors to ensure deliverables are met. Due to non-performance, the City had to terminate a tendered stumping contractor and increase the stumps awarded to another contractor. The delay caused by contractor non-performance was mitigated successfully;

the newly awarded contractor started a couple months later than originally expected (due to the termination of lowest bidder) and agreed to work into early 2016 to finish the list of stumps.

Planting

Markham's extensive replanting plan strengthens diversity of tree species, with over 50 species in the planting program. Diversity will help mitigate potential devastation due to urban forest pests or disease. Markham's 2015 target for planting 6,000 new trees was completed on schedule.

Woodland Assessments and Removals

In 2015 a new component was added to the EAB plan: managing naturalized areas. Markham has over 1,800 greenspaces, buffers, easements, etc. Risk assessments have been completed; 2,800 ash trees comprised the majority of nearly 4,300 total trees with high risk to people or property were marked for removal or pruning adjacent to trails, private properties, and buffer woodlands of manicured areas of parks. Favorable pricing for contracted services related to tree removal, stumping and planting costs and the removal of 2000 ash trees through the 2013 ice storm recovery efforts allowed the program to include woodlands, while keeping within the original budget of \$13.10M.

Contractors have currently completed removal of approximately 50% of hazardous trees. Trunk wood will generally remain in woodlands, where the wood will decompose to restore organic matter and nutrients to the soil. In some cases, trunks may be left to provide wildlife habitat. EAB infests live trees only, so the remnant debris will not harbor any more insects.

Tree Injections

In 2014, 354 trees met the criteria for injections. These trees were re-evaluated June 2015 to determine whether they remain candidates for future injections.

There are currently about 395 ash trees (41 additional trees) that remain as viable candidates to treat; additional trees have been added due to growth and condition assessment.

City arborists are expecting to continue to treat viable candidates. Based on current trends, we can expect a 5-10% mortality rate.

Tree Inventory

The tree inventory for the City wide street and park trees was completed in 2015, with records totaling over 150,000 trees. All work performed on each tree is now logged to create work records with history. This will benefit future planning and due diligence on managing other invasive species both present and potential as well as emergency response.

Communications

Very positive feedback was received regarding the EAB communications efforts through 2015 with City arborists engaging the public at Tree Talks at numerous City events including Globalfest and Canada Day celebrations. Strong communications plan also included portal updates, social media campaign and print publications.

2016-2017 EAB MANAGEMENT PLAN:

All EAB management strategies require ongoing refinements of factors such as pricing, availability, and survivability during the multi-year period of impact. Markham's management plan has evolved to reflect changes in market conditions, shifting environmental factors, new treatment options, and experiential knowledge.

EAB has now spread across Ontario and into Quebec as well as across the United States. Quebec is now sourcing trees from Ontario for EAB replacement programs.

As the Canadian dollar remains low, American municipalities are now buying trees from Canadian nurseries at an unprecedented rate, resulting in depletion of nursery stock of preferred species. Market pressures are expected to result in alternate size substitution, species substitutions, and potential price escalations in the near future. Staff will monitor contract prices and continue to provide Council with program cost updates.

Annual Ash Tree Condition Re-assessment

Due to the nature of the EAB life cycle and ash trees, each tree must be assessed immediately after leaf out in spring. At that time, the tree will move to a removal or treatment list.

Tree Removal & Stumping Program

The City is planning on removing 2,000 dead and dying ash trees in 2016 in streets and parks. 4,000 stumps are targeted for grinding in preparation for new tree replacements.

Replanting Program

Forestry staff have been challenged with continuously reworking planting plans to ensure diversity, as peak demand on nursery stock has resulted in depletion of several species. In 2016, another 6,000 trees will be planted, revitalizing neighbourhoods and restoring ecological benefits.

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 over 50 different species, 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.

Woodland Removals

Woodland removals are on-target and are expected to be completed by year end 2016.

Tree Injections

City arborists are expecting to continue to treat viable candidates. Based on current trends, we can expect a 5-10% mortality rate.

All Tree Inventory and Risk Assessment

All City trees have now been inventoried and assessed, totaling over 105,000 trees on streets and 45,000 trees in manicured parks. An inventory of significant trees (over 40cm in diameter and/or rare species) has been completed along trails and will continue around perimeters of woodlands which will be completed in 2016.

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 continue at the most successful locations 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
- Media releases including Markham Life and newspapers, and social media messaging
- Strong ethnic media communications
- Notices conveying information about removals and replanting programs are handed out to residents at the time of all work.
- 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
- Continued encouragement of residents as partners including community tree planting

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.

FINANCIAL CONSIDERATIONS AND TEMPLATE:

In 2013, staff presented the estimated total EAB program cost of \$13.10M, which included trees on streets and in manicured areas of parks, and excluded woodlands as no data was available at that time.

EAB Program Summary

| | Actual 2013/2014 | Actual 2015 | Forecast 2016 | Forecast 2017 | Total |
|---|-----------------------------|------------------------|--------------------------|--------------------------|-----------------|
| Removals - Street and Park (# of trees) | 9,800 | 5,000 | 2,000 | 400 | 17,200 |
| Removals- Woodland (# of trees) | -- | 1,500 | 2,800 | -- | 4,300 |
| Replanting (# of trees) | 750 | 6,000 | 6,000 | 4,450 | 17,200 |
| Costs | \$1.97M | \$4.35M | \$4.31M | \$2.47M | \$13.10M |

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

Several key factors have contributed to favourable program costs and facilitated the expanded program to include woodlands, while keeping within the original budget of \$13.10M.

Approximately 2,000 ash trees were removed in 2014 due to the ice storm, and the associated costs were submitted to the Province for reimbursement. As well, the City received favourable pricing for contracted services related to tree removal, stumping and tree replanting. Staff will report back to Council late fall 2016 with a progress report and action plans for 2017.

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 February 29, 2016 is outlined below:

| | \$ in M |
|---|----------------|
| Total program costs | 13.10 |
| Amount funded as of February 29, 2016: | |
| Life Cycle Replacement and Capital Reserve Fund | (4.13) |
| EAB Reserve Fund | (2.32) |
| Remaining funding requirement | 6.65 |

At the completion of the EAB program anticipated by 2017, the EAB reserve fund will be in a deficit position of (\$6.06M). 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.

HUMAN RESOURCES CONSIDERATIONS:

Additional contract staffing needs have enabled us to meet the accelerated program demands, and will continue through to 2017.

ALIGNMENT WITH STRATEGIC PRIORITIES:

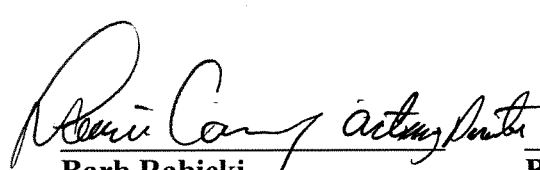
The Emerald Ash Borer Management Plan aligns with the goals and objectives of the Municipal Services Greenprint as well as Parks, Recreation, Culture and Library Master Plan components of Markham's strategic priorities.

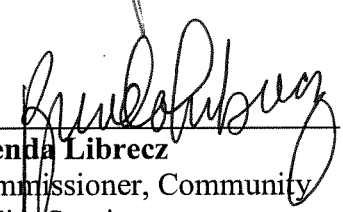
BUSINESS UNITS CONSULTED AND AFFECTED:

Finance teams continue to assist with the program.

RECOMMENDED BY:



David Plant
Manager, Parks Operations

Barb Rabicki
Director, Operations

Brenda Librecz
Commissioner, Community
& Fire Services

ATTACHMENTS:

Presentation