

---

**SUBJECT:** Emerald Ash Borer Update

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

---

**RECOMMENDATION:**

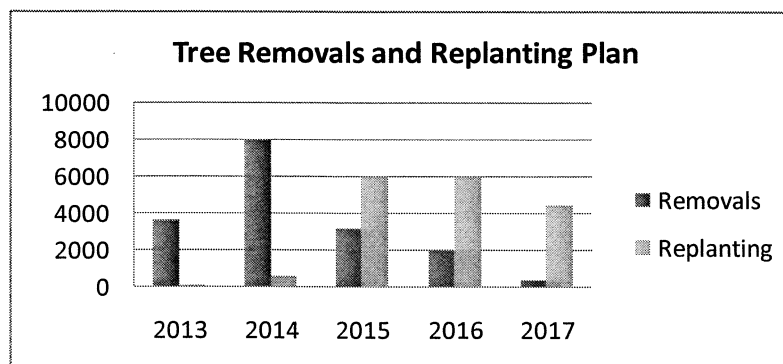
1. That the report entitled "Emerald Ash Borer Update" be received;
2. That staff be authorized and directed to do all things necessary to give effect to this resolution.

**EXECUTIVE SUMMARY:**

The City's Emerald Ash Borer (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, as well as provide updated costs.

Ash tree demise has escalated rapidly in the past year. The predicted rapid acceleration a few years after initial infestation was further compounded by the December 2013 ice storm. This two-fold demise has necessitated advancement of tree removals, which are the focus of the 2014 program. Public safety and due diligence is of the highest priority to the City of Markham.

Approximately 8,000 ash trees will be removed by year end 2014 (9,100 total trees of all species). The 2014 ash tree condition assessment determined 354 trees met the criteria to warrant treatment with TreeAzin™, which has been completed. Replanting has been initiated, with 620 trees to be planted by year end, focusing on the hardest hit areas first. A very strong replanting program of unprecedented scope, with 6,000 new trees to be planted in each of 2015 and 2016 will help rebuild lost tree canopy.



Markham's Forestry staff has also undertaken a city-wide inventory and risk assessment of all tree species, which will provide important information for due diligence and work prioritization, as well as essential data for replanting. Such a large scale tree inventory, which is generally done by consultants, has never before been undertaken in-house by a Canadian municipality. With the shortage of qualified consultants in the GTA post ice storm, City staff has also taken on this necessary challenge. Completion is anticipated for 1Q 2015 and will provide the foundation for replanting and diversification of Markham's urban forest to mitigate future pest threats.

City of Markham Forestry staff continues to play a key role in regional alliances such as partnership with York Region, to share information and resources, as this devastating insect knows no municipal boundaries. EAB has now spread as far north as Algoma and Sudbury, and past Montreal to Acton, Quebec, per Canadian Food Inspection Agency's current regulated areas for ash quarantine zones.

The total EAB program estimate remains at \$13.1M, and includes \$4.5M for the 2015 program, which has been submitted as part of the 2015 pre-approval of capital budget. Current estimates have been updated to include assessment, removals, and replanting of woodlot ash trees, which was not part of the original scope of work included in the \$13.1M previously presented to Council. These estimates do not include expenses related to 2013 Ice Storm remediation, which has been charged to the operating budget and covered some ash tree removal and inventorying costs.

## **PURPOSE:**

The purpose of this report is to provide an update to Council regarding the current impact of Emerald Ash Borer throughout the City of Markham, and the progress of Markham's EAB Management Plan.

## **BACKGROUND:**

Emerald Ash Borer first entered Canada via Windsor in 2002, and by 2006 had infested trees as far east as Oakville, Ontario. Acknowledging the threat of EAB to Markham, Operations staff proactively completed a rough mapping of approximately 14,000 boulevard ash trees in 2009. In 2011, the Region of York and nine municipalities formed a Joint Technical EAB Working Group, which included a Communications Subcommittee, to collaborate on sharing information, resources and experiences to manage the invasive pest.

Also in 2011, The Canadian Food Inspection Agency (CFIA) confirmed the presence of EAB in Markham.

Markham's Forestry Division undertook an inventory of public ash trees on boulevards and in manicured areas within parks in 2012, identifying 16,738 ash trees. City staff also undertook soil tests to provide data to help determine optimal species to be replanted. Markham also retained the services of the leading arboriculture consulting company to prepare the Emerald Ash Borer Strategy, to provide options and guide early management decision-making in the battle against this invasive insect. The EAB Strategy outlined treatment, removals, replanting and staffing to deal with 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.

In October 2012, City of Markham Council approved funding of \$13.1M for management of EAB on boulevards and manicured areas of parks.

Forestry staff undertook ash tree reassessments in 2013, followed by the injection of 1,080 trees on boulevards and in manicured areas of parks. City staff also undertook soil tests to provide data to help determine optimal species to be replanted. 3,628 trees were removed in 2013 and 130 trees were replanted.

The December 21, 2013 ice storm devastated Markham's urban forest, necessitating the removal of approximately 2,000 ash trees, in addition to extensive pruning of thousands more ash trees, to reduce risks to the public. Across the GTA, urban foresters noted that the ash trees were particularly hard hit during the storm.

## **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.

Ash tree demise has escalated rapidly in the past year. The predicted rapid acceleration a few years post initial infestation was further compounded by the December 2013 ice storm. This two-fold demise has necessitated advancement of tree removals throughout the GTA.

### ***2014 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 this time, and will continue to evolve. It will be updated accordingly to reflect changes in market conditions, shifting environmental factors, and experiential knowledge.

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

One of the biggest 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. This information is necessary to provide both ash condition reassessment, as well as tree canopy composition data for replacement plantings. GTA municipal response post ice storm was quick to secure all available consultant resources. 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. The annual ash assessment was completed by mid-summer, and the city-wide tree inventory is expected to continue through IQ 2015.

### ***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, as well as the Organic Materials Research Institute (OMRI), provide better efficacy than the previously recommended bi-annual injection program. The City of Markham will

be moving forward with annual injections of TreeAzin, in an effort to prolong the life of the ash trees.

The 2014 reassessment of the 20 trees treated for the Ashton Meadows pilot project determined 11 trees meet the criteria for reinjection at this time. Significant decline was evident over the two-year period.

New products which obtain registration by the PMRA will continue to be evaluated for consideration for use in Markham.

The annual ash tree condition reassessment determined that 354 trees met the criteria for continued treatment, which was completed in August 2014. The criteria took into account:

- Greater than 20cm dbh (diameter at breast height)
- Located on streets and in manicured areas of parks
- Good health: dark green colour; full canopy; no suckers or woodpecker damage
- Good structural integrity of the tree

### ***Removal Program***

Markham has now entered the period of 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. Most municipalities in the GTA suffering significant losses of ash trees – both treated and untreated – which were already structurally compromised by the Emerald Ash Borer.

An estimated 2,000 ash trees have already been removed in Markham in 2014, mainly due to ice storm damage. An additional 6,000 ash trees will be removed by year end, in an accelerated effort to mitigate future winter storm damage, and protect public safety.

Stumping of 4,500 trees through a combination of in-house plus contracted services is on track for completion by year end.

### ***Replacement Program***

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

620 trees will have been replanted by year end, focusing on hardest hit areas.

City arborists will determine the tree species for replacement plantings on a street-by-street basis, using data collected from soil tests, as well as tree inventory results, to ensure optimum diversification of Markham's public urban forest. It is critical that Markham continues to improve diversification of its urban forest through comprehensive planning by technical experts, as future threats such as Asian Longhorned Beetle, recently re-surfaced in Mississauga in 2013. As the movement of people and products continues to grow globally, so does the threat of transfer of destructive, invasive pests.

Tree replacements on City boulevards will continue to be the City standard 60mm caliper. Larger size trees will not be planted due to limitations of the size of hole stumped in preparation, as well as potential utility obstruction and/or damage. Research shows that smaller trees generally establish faster than larger trees, and catch up in size within a couple of years post-planting.

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

### ***Corporate Communications***

The EAB Communications Strategy continues to evolve in alignment with EAB management planning. Actions include:

- Key messages are updated on the City website as required, in addition to media releases and social media messaging;
- Graphic charts of the City's progress regarding removals and replanting have been developed to provide residents with a clearly understood, visual update;
- The ash tree mapping tool will be updated on the City portal upon completion of the city-wide tree inventory;
- Communication to the general public through mainstream and ethnic print media channels including newspapers and Markham Life magazine;
- Door hangers conveying information about removals and replanting plans, and timelines have been produced and are in distribution;
- Posters have been prominently placed in City facilities including community centres and libraries;
- Electronic Information Boards have EAB messaging in place;
- EAB updates have been provided to Councillors and City staff to facilitate clear, concise and consistent explanations to residents of the EAB Management Plan progress;
- The first of three videos has been uploaded to the City portal and YouTube; with the remaining two videos in production;
- Six public information sessions were held in 2013;
- In the spring of 2015, "Let's Talk Trees" sessions will be held at frequently visited community centres, libraries and shopping malls to take advantage of seasonal spring gardening interest;
- Continued encouragement of residents as partners including community tree planting projects; Local Enhancement and Appreciation of Forests (LEAF); Markham Trees for Tomorrow; Friends of the Rouge Watershed, and the Evergreen Foundation;
- Also in development is 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 provides 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.

### ***2015 EAB Management Plan Actions***

Staff will continue to assess and incorporate new treatment options, as appropriate, which may become available in Canada.

Annual ash tree assessments will continue to determine trees to be treated, removed, or monitored.

Tree removals in 2015 will continue to be high with 3,200 trees estimated to be re-assessed as being in serious decline or dead, necessitating removal.

An unprecedented replanting program beginning in 2015 will plant 6,000 new trees on City boulevards, to replace trees removed in 2014.

Trees in natural areas and woodlands will be assessed to promote due diligence for public safety. Trees adjacent to trails, private residential properties, and adjacent to manicured areas of parks will be assessed, with ash trees removed. A woodlot replanting plan to preserve canopy cover and prevent undesirable invasive tree species will be developed. As previous reports to Council did not yet include woodlot and natural areas actions to be taken, this should be noted as an augment to the original EAB Management Plan.

### ***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 removals estimated to be approximately 2,000 trees in 2016. An additional 372 trees will be monitored for removal, or potential treatment, for 2017.

Tree planting for 2016 is planned for 6,000 new trees, to continue to restore lost canopy of previous years. In 2017, tree planting is estimated to be 4,470 trees.

### **EAB Program Summary**

	<b>2013/2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>Total</b>
Removals (# of Trees)	11,628	3200	2,000	372	17,200
Replanting (# of Trees)	750	6,000	6,000	4,470	17,200
<b>Costs (\$)</b>	<b>\$1.9 M</b>	<b>\$4.5M</b>	<b>\$4.0 M</b>	<b>\$2.7M</b>	<b>\$13.1M</b>

### **FINANCIAL CONSIDERATIONS AND TEMPLATE:**

The total EAB program estimate remains at \$13.1M, and includes \$4.5M for the 2015 program, which has been submitted as part of the 2015 pre-approval of capital budget. These estimates however do not include expenses related to 2013 Ice Storm remediation, which has been expensed against the operating budget and will be funded from the Corporate Rate Stabilization Reserve. The City submitted an expression of interest to the Ontario Ice Storm Assistance Program outlining an estimated cost of \$9.8M (including Parks, Roads and other ice storm related costs). The City has since received confirmation from the Ministry of Municipal Affairs that the City is eligible to seek assistance for eligible costs. Any reimbursement from the Ice Storm Assistance Program will be credited back to the original funding source, the Corporate Rate Stabilization Reserve.

In order to fund the program cost of \$13.1M, Council approved a 0.5% tax rate increase in the 2013 budget.

Future EAB budgets will be requested as part of the annual budget process.

---

### **HUMAN RESOURCES CONSIDERATIONS:**

Additional contract staffing is needed to undertake the work necessary for the EAB plan. Staffing needs have been considered as part of the EAB Management Plan, and will be brought forward for consideration as part of the 2015 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 the Parks, Recreation, Culture and Library Master Plan components of Markham's strategic priorities.

### **BUSINESS UNITS CONSULTED AND AFFECTED:**

Corporate Communications and Information Technology teams continue to assist with developing updates and engaging the public.

### **RECOMMENDED BY:**



**Bob Nicholson,**  
Acting Director, Operations



**Barb Rabicki**  
Manager, Parks Operations



**Brenda Librecz**  
Commissioner, Community &  
Fire Services

### **ATTACHMENTS:**

Attachment 'A' - November 19, 2012 Emerald Ash Borer Presentation to General Committee  
Attachment 'B' – Emerald Ash Borer Communication Strategy  
Presentation