

Clause No. 31 in Report No. 13 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on September 11, 2014.

## **31**

### **INVASIVE SPECIES UPDATE**

**Committee of the Whole recommends adoption of the following recommendations contained in the report dated August 13, 2014 from the Commissioner of Environmental Services:**

#### **1. RECOMMENDATION**

It is recommended that Council receive this report for information.

#### **2. PURPOSE**

This report provides an update on management of Emerald Ash Borer and other priority invasive species in York Region.

#### **3. BACKGROUND**

##### **In June 2011, Regional Council endorsed an Emerald Ash Borer Management Plan for York Region**

At its meeting on June 23, 2011, Regional Council adopted an Emerald Ash Borer Management Plan outlining an active management approach to the invasive insect's impacts. The plan includes:

- Monitoring the spread of the insect
- Removing and replacing dead and dying infested ash street trees
- Removing hazard trees from the York Regional Forest (e.g. along trails)
- Protecting large, valuable trees on Regional roads and in the York Regional Forest (seed source trees) with an insecticide (TreeAzin™)
- Providing private land tree planting incentives
- Coordinating the Emerald Ash Borer Technical Working Group and collaborating with local municipalities, agencies and conservation authorities

- Educating residents about the insect's impacts and their options for mitigating its effects

The Emerald Ash Borer infestation has spread across the Region from south to north since it was first detected in 2008. The severity of the impact varies by location, depending on the local abundance of ash trees. Municipalities and residents are choosing to protect some large, healthy ash trees with insecticide. As the infestation progresses, all unprotected ash trees will die. Education and awareness activities are ongoing throughout the Region.

Emerald Ash Borer will probably always be present, however over the next 10 to 15 years a diminished food supply (ash trees) and the impact of natural and introduced predators (e.g. parasitic wasps) will likely suppress Emerald Ash Borer numbers in southern Ontario. When the insect population crashes, residents and municipalities can stop treating remaining ash trees on a regular basis.

The previous Emerald Ash Borer Update report to Council in November 2013 discussed the progress of the infestation and its financial implications. Staff recommended the continued implementation of existing active management approach including tree removal and replacement, with annual reviews of impact and forecast expenditures.

### **York Region collaborates with local municipalities, Provincial and federal governments and non-governmental organizations to manage invasive species**

Since 2008 York Region has worked with its partners to raise awareness of the Emerald Ash Borer and other invasive species in York Region and to prevent and control the adverse effects of invasive species on Regional street trees and the York Regional Forest. Agencies, municipalities and other partners include the Ontario Invasive Species Centre, Ontario Invading Species Awareness Program, Ontario Invasive Plant Council, Forests Ontario, Local Enhancement and Appreciation of Forests (LEAF) and Evergreen. Staff participate on the boards of the Ontario Invasive Species Centre and Forests Ontario to influence and inform legislation, policy and priorities.

Region staff chair an Emerald Ash Borer Technical Working Group that includes representatives from local municipalities, the Toronto and Region Conservation Authority, the Lake Simcoe Region Conservation Authority, Durham Region, Simcoe County, the City of Toronto, the Ontario Ministry of Natural Resources and the Canadian Food Inspection Agency. Meetings are held two to three times per year to share the latest information and best practices in Emerald Ash Borer management and to coordinate management and communication activities across the Region. Topics have recently expanded to include updates on other priority invasive species (e.g. Asian long-horned beetle).

The Provincial Government released an Invasive Species Strategic Plan in 2012, followed by an Invasive Species Discussion Paper in 2013. Both documents identified a need for collaboration across government jurisdictions and with both non-profit and private sectors to prioritize invasive species for prevention and management. In spring 2014, an invasive species bill passed first reading in the Provincial Legislature, but its progress halted when parliament was prorogued for the election. The Liberal government has indicated it will re-introduce the bill.

The bill proposed to restrict possession, propagation and movement of regulated invasive species and carriers (e.g. wood in the case of invasive wood boring insects), require management plans to be enacted when a regulated species is discovered and establish maximum penalties for contraventions including fines and jail terms.

In comments provided on the bill through the Environmental Registry (see *Attachment 1*), staff expressed support for the proposed legislation in principle and emphasized that invasive species result in significant costs and challenges for the Region and its residents. Staff also commented that municipalities and on-the-ground invasive species managers should be consulted when the Minister develops regulations or interim management plans and that regulations should be flexible enough to allow for tailored management plans for different areas.

#### **4. ANALYSIS AND OPTIONS**

##### **MANAGING EMERALD ASH BORER**

###### **Emerald Ash Borer monitoring surveys confirm infestation covers entire Region**

Results from the first Emerald Ash Borer Monitoring Survey in 2011 showed the insect was established throughout the City of Vaughan, the Town of Richmond Hill and the City of Markham. Results from 2012 showed the infestation had spread northward, and in 2013, survey results revealed that the insect had infested all the northern municipalities. In summer 2014, 110 traps were deployed in northern York Region to confirm the extent of the insect's spread (see *Attachment 1*). This information is key to guide operating plans and communications initiatives.

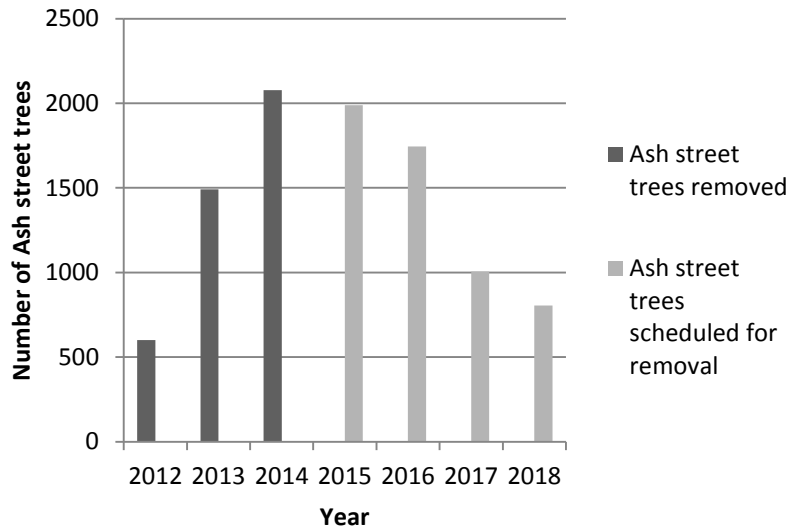
Green prism traps used to detect the Emerald Ash Borer show whether the insect is present or absent in the vicinity of the trap. They cannot assess abundance. However, the number of positive finds in an area can give a reasonable indication of the infestation level. Staff will reassess whether ongoing monitoring using green prism traps will be useful in the coming years.

### **Regional street tree assets are proactively managed by timely removal and replacement of dead and dying ash trees**

Once infested, a 20 cm diameter ash tree can die within two to three years. Declining street trees are hazards to public safety. Removing and replacing street trees are priority actions to mitigate risk and maintain the environmental, health and social benefits street trees provide to our communities. Most ash trees on Regional roads will be dead by 2018.

York Region removed 600 ash street trees in 2012 and 1,500 in 2013. Approximately 2,000 will be removed by the end of 2014. The remaining estimated 4,000 to 5,000 ash street trees will be removed by the end of 2018. Ash street tree removal is progressing as predicted in the November 2013 Emerald Ash Borer Infestation Update report and as shown in Figure 1. Although the number of ash trees scheduled for removal will decrease in 2015, the cost of removing those ash trees will increase because of the greater proportion of larger ash trees on the rural right-of-ways. In accordance with the Emerald Ash Borer Management Plan, ash street trees removed from Regional roads will be replaced on a one-to-one basis with trees of different species by the following year.

**Figure 1**  
Ash Street Tree Removal 2012 to 2018



### **Some large, healthy ash street trees with high landscape value are being protected with the insecticide TreeAzin™**

At a cost to the Region of approximately \$160 per tree, treatment can be cost effective alternative to removal and replacement for large, healthy trees with high landscape value. Insecticide treatments must be repeated every two years at minimum and may need to be applied yearly when infestation pressure peaks. Twenty-five ash street trees on Regional roads were treated in 2013, and 42 trees in 2014. Staff expect to treat trees for the next 10 years, beyond which scientists predict Emerald Ash Borer populations will decline because of a lack of food (un-treated ash trees).

### **Ice storm impacts local municipalities' ash tree removal and treatment programs, but Region's schedules are unchanged**

In December 2013 the Region experienced a major ice storm. The ice storm had a significant impact on trees and forests, particularly in our southern municipalities. Ash trees do not have a strong form or structure and were hit hard (damage, loss of limbs etc.) by the ice storm. Ash tree removal schedules for the City of Vaughan, City of Markham and Town of Richmond Hill may have been impacted by the ice storm due to the high number of municipally-owned large street trees still standing in these jurisdictions. However, the Region's ash tree removal and replacement schedule for Regional roads was not affected because most of the ash street trees in those southern municipalities were proactively removed prior to the storm.

### **Sustainable forestry practices help manage the impact of Emerald Ash Borer in the York Regional Forest**

Sustainable forestry practises including harvesting, planting, seeding and invasive plant control will be continue to be employed to increase the diversity of the York Regional Forest and ensure it can recover from the loss of ash trees. To minimize risk to the public due to declining ash trees near trails and parking lots, hazard tree inspections and removals will increase in frequency in the coming years. Staff selected 130 large healthy ash trees in York Regional Forest properties to treat with TreeAzin™ so they can provide seeds to regenerate ash trees in the future. These trees will require treatment for at least the next 10 years.

### **Extensive public outreach educates residents, providing tools and options to help manage the Emerald Ash Borer and other invasive species**

The Region hosted 20 public education and outreach events over the past three years, engaging approximately 700 residents. Events have included invasive plant and Emerald Ash Borer management workshops for woodlot owners and information sessions for urban residents. Emerald Ash Borer information is available at [www.york.ca/eab](http://www.york.ca/eab) and is updated regularly, and invasive species awareness and education are integrated into

Environmental Services public outreach programs. Through a partnership with LEAF (Local Enhancement and Appreciation of Forests), the Region provides a subsidized tree-planting program for residents to offset the impact of losing ash trees from the urban forest and an Emerald Ash Borer Ambassador Program to empower residents to become experts on Emerald Ash Borer and help spread awareness in their communities.

## **MANAGING PRIORITY INVASIVE SPECIES**

### **Region keeps informed of emerging invasive species threats**

Other invasive insects and plants continue to emerge as potential threats to our urban and natural areas. Many of these species have potential direct and indirect impacts on our residents. Staff attend meetings and liaise with the Canadian Food Inspection Agency, the Ontario Ministry of Natural Resources and Forestry, the Ontario Invasive Plant Council, Ontario Invasive Species Centre, conservation authorities, universities, and other municipal governments to keep informed of the status of invasive species in Ontario. The Region's Invasive Species Specialist keeps informed of current research and best practices to ensure the Region remains proactive in its approach to preventing and mitigating the impacts of invasive species and assessing the threat of any emerging species.

### **New Asian long-horned beetle Regulated Area established by the federal government in 2013 close to York Region border**

In 2003 the Asian long-horned beetle, an invasive wood-boring beetle from Asia that attacks and kills many species of hardwood trees including maple, birch, poplar and elm, was detected in York Region. A Regulated Area was established that included parts of the Cities of Vaughan and Toronto. In spring 2013, following extensive tree removal, the Canadian Food Inspection Agency declared the Asian long-horned beetle eradicated from York Region and the Regulated Area designation was removed.

In fall 2013 a new Asian long-horned beetle infestation was confirmed in the City of Mississauga near Pearson International Airport. A regulated area encompassing parts of the Cities of Toronto and Mississauga was established, bordered in the north by Finch Avenue, in the east by Martin Grove Road, in the south by Highway 401 and in the west by Dixie Road. The regulated area does not extend into York Region. By fall 2013, 20 trees had been removed from the regulated area by the Canadian Food Inspection Agency. Inspections are underway for 2014. Staff continue to communicate with the Canadian Food Inspection Agency on the status of the infestation.

### **Invasive plants continue to threaten natural landscapes in York Region**

Invasive plants including giant hogweed, dog-strangling vine, European buckthorn and garlic mustard impact natural and agricultural areas throughout York Region. Communication initiatives provide timely information to the public on emerging and current threats through a variety of mechanisms (e.g. website, information sessions, publications etc.). As the population of York Region has increased, the numbers and spread of invasive plants have increased. People are a key agent in the direct and indirect spread of invasive plants. Invasive plants such as dog-strangling vine and European buckthorn have colonized many properties, including portions of the York Regional Forest.

In 2013 an invasive plant inventory and threat assessment was completed for the York Regional Forest to determine the distribution of invasive plants and to prioritize prevention and control activities. In 2014 some pilot scale control and restoration activities were initiated, and a partnership is in place to work with the Ontario Invasive Plant Council to develop a pilot Invasive Plant Strategy for the Region. The pilot strategy will outline the best options for preventing and mitigating the impacts of invasive plants in York Region through monitoring, control, outreach and education using existing resources and partners and will enable a better understanding of potential financial implications of invasive plant management.

### **York Region participates in hemlock woolly adelgid (invasive insect) working group**

Staff participate in a newly-formed working group to assess the threat of the hemlock woolly adelgid, an invasive insect that attacks and kills hemlock trees. The working group brings municipal and county forest managers, staff from conservation authorities and private forest management companies and representatives from the Ministry of Natural Resources and Forestry and Canadian Food Inspection Agency together to gather and share information on the threat of hemlock woolly adelgid to southern Ontario forests and how best to prevent and detect the insect before an infestation establishes in Ontario. Hemlock woolly adelgid has killed billions of hemlock in the north-Eastern United States over the past few decades. Effective pesticides exist, however the widespread application of pesticides in a forest setting is often logistically and financially difficult. Biological control in the form of beetles that eat hemlock woolly adelgid is being studied in the United States, and early results are encouraging. Hemlock woolly adelgid was found in one tree in a ravine in Niagara in 2013 by the Canadian Food Inspection Agency. The Canadian Food Inspection Agency destroyed the tree and continues to survey the area annually. It is reasonable to expect that hemlock woolly adelgid will eventually spread to the Region, potentially within 10 years. Hemlock is a common and ecologically important tree in southern Ontario forests. Though Hemlock is not planted as a street tree, it is found in forests throughout York Region and is present in 13 per cent (290 hectares) of the York Regional Forest.

## **5. FINANCIAL IMPLICATIONS**

### **10 year budget investment primarily targeting removal and replacement of ash street trees**

Impacts of invasive species, particularly Emerald Ash Borer, will continue to have significant financial implications for the Region and its residents. Currently, the majority of costs are related to managing assets and protecting public safety by removing and replacing ash trees. The overall 10 year budget forecast (2012-2021) for Emerald Ash Borer management remains unchanged at \$10 million, with the highest expenditures occurring in the first five years when large numbers of ash trees are dying. The majority of cost is for removing and replacing ash street trees. The accelerated pace of ash tree mortality was reported in the November 2013 Emerald Ash Borer update to Council, and removal and replacement of ash trees on Regional roads is on track. From 2012 to the present, including 2014 expenditures, approximately \$2.3 million has been spent.

### **Budget forecast for 2015 remains unchanged**

For 2015, \$1.6 million in operating and capital funding is required to complete invasive species management activities including ash street tree removal and replacement, Emerald Ash Borer impact mitigation and restoration in the York Regional Forest, as well as public outreach and education activities including invasive plant information. The 2015 funding requirement is unchanged from what was forecast in the November 2013 Emerald Ash Borer update to council.

The forecast expenditures for 2015 include \$593,000 for ash tree removal, \$671,000 for tree planting to replace removed ash trees, \$50,000 for Emerald Ash Borer mitigation in the York Regional Forest, \$15,000 to treat ash trees in the Regional Forest and on Regional Roads, \$20,000 for the Emerald Ash Borer monitoring survey, \$50,000 for tree-planting incentives for residents, \$30,000 for public outreach and salary and operating expenses.

### **Invasive species budget forecasts will be updated annually to provide more accurate insights into expected expenditures**

To date, efforts focussed on other invasive species (e.g. plants) have mostly involved collaboration with all levels of government and non-profit organizations, monitoring and information gathering, pilot scale removal projects and communication and outreach to residents. In the future, detection, prevention and control efforts for invasive species including dog-strangling vine, giant hogweed and hemlock woolly adelgid may be required and could have budget implications. Updates will be reported to Council as



necessary. Invasive species budget forecasts will be updated annually to provide more accurate insights into expected expenditures.

### **York Region's multiple funding requests to the federal and provincial governments for Emerald Ash Borer management have been denied**

Managing the Emerald Ash Borer is a federal and provincial responsibility. York Region has repeatedly requested financial support to assist with managing the impact of the Emerald Ash Borer. To date these requests have been denied, and no financial support has been offered. In summer 2014 the Region received responses from the Federal Minister of Agriculture and Agri-Food, Natural Resources Canada's Canadian Forest Service, and the Provincial Minister of Natural Resources to the Region's most recent funding request. The following provides a chronology of the Region's requests for funding from the federal and provincial governments:

- June 2003 – following the initial finding of the insect in Ontario
- June 2008 – after the initial finding in York Region
- June 2011 – following an Emerald Ash Borer update Council report
- March 2012 – Regional Council support for the proclamation put forward by the Ontario Urban Forest Council that the federal and provincial authorities provide a more active role in urban forestry including a response to the Emerald Ash Borer
- December 2013 – following an Emerald Ash Borer infestation update Council report

## **6. LOCAL MUNICIPAL IMPACT**

Emerald Ash Borer continues to affect all local municipalities in York Region. Together with the Region, local municipalities are projected to spend more than \$7 million managing Emerald Ash Borer in 2014, and more than \$55 million is forecast to be collectively spent over the ten-year horizon (2012-21).

All local municipalities are either actively managing the impact of Emerald Ash Borer or are developing a strategy to manage it. Most local municipalities are removing and replacing trees, and some are protecting select trees with insecticide. The infestation is currently most advanced in the City of Markham, where 6,000 trees are scheduled for removal in 2014, the City of Vaughan, where 5,000 trees are scheduled for removal, and the Town of Richmond Hill where 5,000 trees are also scheduled for removal.

The Emerald Ash Borer Technical Working Group provides a forum for sharing knowledge about Emerald Ash Borer as well as other invasive species such as Asian long-horned beetle, giant hogweed and dog-strangling vine. York Region staff will continue to collaborate in monitoring, prevention, education and outreach activities related to invasive species with local municipalities and share the latest knowledge and best management practices.

## **7. CONCLUSION**

Emerald Ash Borer is present throughout York Region and will kill millions of ash trees in urban and natural landscapes. Ash tree mortality will continue to spread northward throughout 2015. Efforts to manage and mitigate Emerald Ash Borer's impacts will continue by implementing the Emerald Ash Borer Management Plan, including monitoring the infestation, removing and replacing street trees and mitigating the impact on the York Regional Forest.

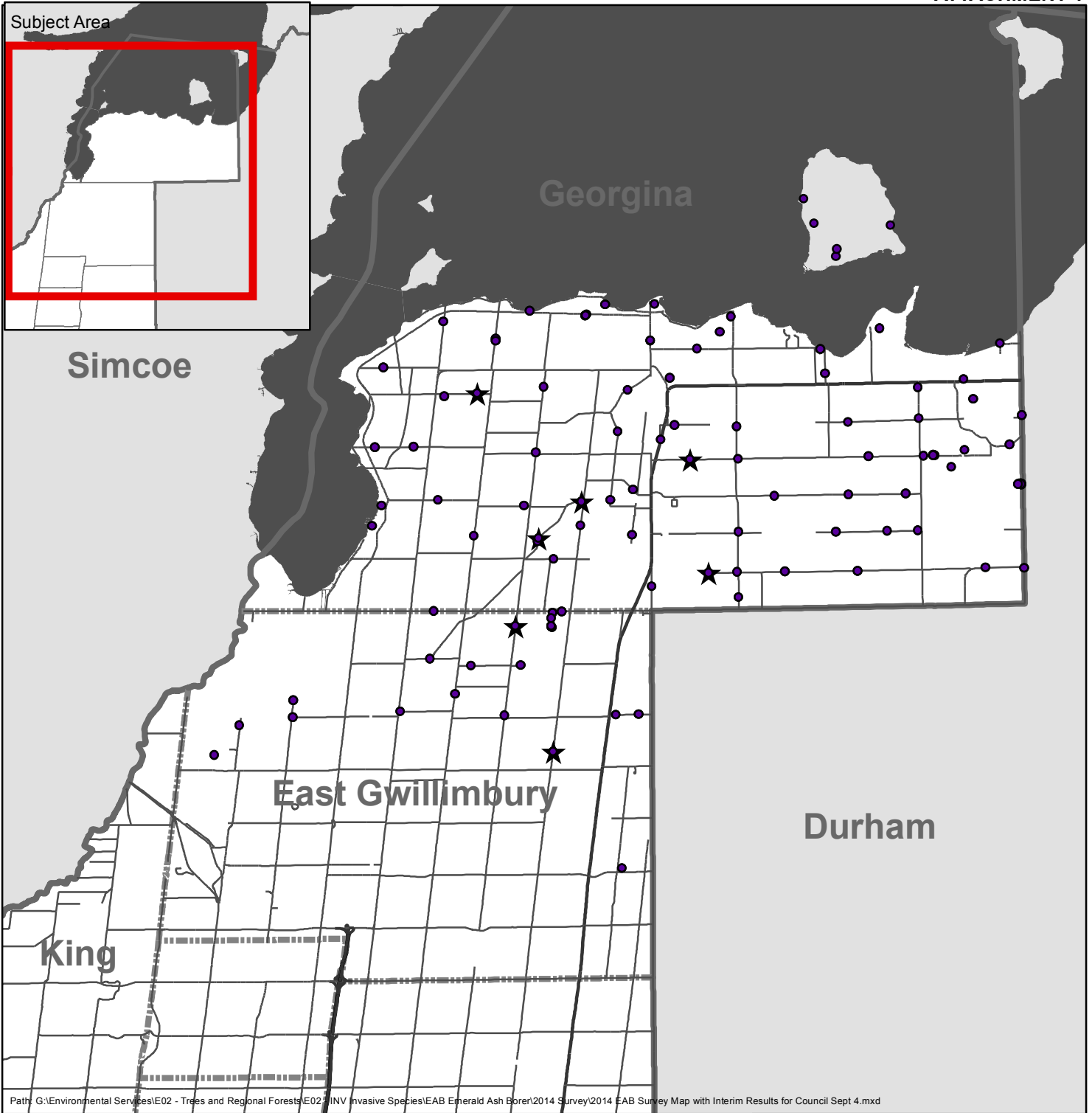
Other invasive insects and plants such as Asian long-horned beetle, hemlock woolly adelgid, dog-strangling vine and giant hogweed continue to emerge as potential threats to our urban and natural areas. Many of these invasive species can have potential direct and indirect impacts on our residents. Staff continue to work with other levels of government and non-profit organizations to review emerging threats and work proactively to prevent and respond to the impacts of invasive species.

A key priority continues to be working with local municipalities to inform and educate residents to mitigate the impact of Emerald Ash Borer and other invasive species. Staff will continue to coordinate the Emerald Ash Borer Technical Working Group, work with local municipalities, Provincial and Federal governments and non-governmental organizations to ensure best practices for invasive species management guide the Region's invasive species programs.

For more information on this report, please contact Ian Buchanan, Manager, Natural Heritage and Forestry Services at 905 830-4444 Ext. 75204 or Laura McDowell, Director Environmental Promotion and Protection at Ext. 75077.

The Senior Management Group has reviewed this report.

*Attachment (1)*



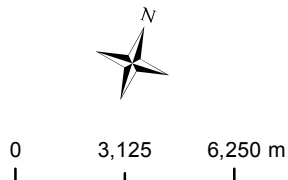
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**2014 Emerald Ash Borer Survey Interim Results**  
 Invasive Species Update, September 4, 2014

Note: Interim results shown here are as of July 20, 2014. Full survey results including the final number of positive traps will be compiled in September.



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**Legend**

- 2014 EAB Trap Locations
- ★ Positive Trap — Emerald Ash Borer detected
- Arterial Road
- Provincial Highway