Agenda – Standing Policy Committee on Protection, Community Services and Parks – March 8, 2019

BUDGET ITEM

Item No. 2 Emerald Ash Borer Preparedness, Response and Management Options

STANDING COMMITTEE DECISION:

On February 5, 2018, the Standing Policy Committee on Protection, Community Services and Parks concurred in the recommendation of the Winnipeg Public Service:

2. That a new Supervisor of Urban Forestry Technical Services permanent position (at an additional cost of $92,771) be referred to the 2019 Operating Budget process.

DECISION MAKING HISTORY:

STANDING COMMITTEE DECISION:

On February 5, 2018, the Standing Policy Committee on Protection, Community Services and Parks concurred in the recommendation of the Winnipeg Public Service:

1. That up to $1.3 million be reallocated from the 2018 Urban Forest Enhancement Program (tree pruning) to the Emerald Ash Borer Emergency Response Plan.

2. That a new Supervisor of Urban Forestry Technical Services permanent position (at an additional cost of $92,771) be referred to the 2019 Operating Budget process.

3. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

ADMINISTRATIVE REPORT

Title: Emerald Ash Borer Preparedness, Response and Management Options

Critical Path: Standing Policy Committee on Protection, Community Services and Parks

AUTHORIZATION

Author	Department Head	CFO	CAO
M. Barwinsky	D. Domke Acting Director of Public Works	M. Ruta	D. McNeil

EXECUTIVE SUMMARY

Emerald ash borer (EAB) is an invasive wood-boring insect introduced to North America from eastern Asia in the late 1990's. It attacks and kills all species of ash trees. EAB has been discovered in Winnipeg.

EAB cannot be eradicated once it is detected. The City of Winnipeg is at risk of losing all of its ash trees due to EAB. There are approximately 101,000 ash trees on boulevards and in parks in Winnipeg, representing over 30% of our street and park tree population and valued at approximately $437 million. Ash tree inventory on private properties and natural areas has been completed identifying approximately 256,385 ash trees in these areas. The total value of all ash trees in the City of Winnipeg is estimated to be over $1.5 billion.

Costs for managing the mortality of boulevard and park ash trees due to EAB are estimated to be $90 million over a 10-year period. An additional estimated $15 million would be required to manage the wood waste from ash tree removals. These costs do not include management of ash trees on private property.

The Emerald Ash Borer Emergency Response Plan for the City of Winnipeg is estimated to cost up to $1.3 million in 2018. This plan includes a survey to determine the current extent of the infestation, creation of a temporary Supervisor of Forestry Technical Services position to plan and implement the response, removal and disposal of infested ash trees on public property, treatment of public ash trees, expanded EAB monitoring, and public awareness and education.

RECOMMENDATIONS

1. That up to $1.3 million be reallocated from the 2018 Urban Forest Enhancement Program (tree pruning) to the Emerald Ash Borer Emergency Response Plan.
2. That a new Supervisor of Urban Forestry Technical Services permanent position (at an additional cost of $92,771) be referred to the 2019 Operating Budget process.
3. That the proper officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

EAB has been discovered in Winnipeg. The impacts of EAB are significant to the City of Winnipeg.

IMPLICATIONS OF THE RECOMMENDATIONS

Prevention, response to and management of EAB are regulated federally by the Canadian Food Inspection Agency (CFIA) under the authority of the Plant Protection Act and Regulations, and provincially under the authority of the Forest Health Protection Act and Regulations. The City of Winnipeg will be mandated to manage EAB in accordance with federal and provincial legislation.

The City of Winnipeg is at high risk to lose all of its ash trees within a 10-year period, resulting in a loss of at least 30% of our boulevard and park tree assets alone, valued at approximately $437 million. The City would also experience significant losses of environmental, economic, public health, and social benefits as the entire ash population in our urban forest is impacted.

Current funding for DED management will be maintained at a minimum by both the City and the Province. The reallocation of funds for EAB Emergency Response Plan are not recommended to come from those funds allocated to DED management in the 2018 Urban Forest Enhancement Capital Program approved by Council.

Unlike DED, EAB is very difficult to detect as an ash tree can be infected for up to five years before it dies or symptoms are evident. Once EAB is detected, EAB management costs span over a 10-year period based on current research and other communities managing EAB. Trees infected with EAB must be removed as they pose a high risk to public safety as the trees fall down within two years of dying.

Total estimated cost to manage the impacts of EAB over 10 years is $90 million for ash trees on public property only. It is estimated 72,100 ash trees would be removed from boulevards and parks, approximately 28,830 ash trees would be treated, and approximately 64,900 trees would be replanted. Costs would not be equally distributed each year over the 10 year period and would potentially peak in year five of management. After the 10-year period of active management, a low level of EAB will remain in our urban forest as long as there are ash trees. Treatment of ash trees would continue past the 10-year period but with a lower volume of trees.

Two significant limiting factors related to EAB management are listed below:

1. the current lack of capacity in the arboriculture industry to complete the necessary removals and replacements when EAB populations increase resulting in over 14,000 removals on average per year over four years when ash mortality is at its peak, and,
2. the current lack of availability of a high volume of suitable nursery stock in the prairies required to replace the ash trees lost to EAB over the 10-year period.

Using up to $1.3 million of the Urban Forest Enhancement Capital Fund for the EAB Emergency Response Plan will cause a significant rise in the tree pruning cycle to once every 39 years (from once every 26 years).

The most efficient means of handling and managing the wood waste from the ash tree removals is by chipping the wood and utilizing the woodchips in the composting programs managed by the Water and Waste Department. A Class 5 estimate for managing wood waste due to EAB is approximately $15 million over the 10-year period. This cost is in addition to the removal and treatment options described above.

Estimated costs presented herein do not include managing ash on private properties to protect public safety.

HISTORY/DISCUSSION

EAB is an invasive pest introduced to North America from eastern Asia. EAB is a wood-boring insect that attacks and kills all species of ash trees (*Fraxinus sp*), whether healthy or stressed. EAB was first discovered in North America in 2002 near Detroit, Michigan and Windsor, Ontario. Since that time, EAB has decimated millions of ash trees as it has spread throughout 28 states in the northeastern and central United States, and in Quebec and Ontario.

The longer EAB is undetected upon initial infestation, the lower the success of containing the pest and slowing the spread. The most common method of spreading the pest is by human-assisted movement of infected ash wood, such a firewood and nursery stock.

EAB has been recently detected in Winnipeg. The closest established infestations are near Duluth, Minnesota (500 kms away, detected in 2015) and Thunder Bay, Ontario (600 kms away, recently detected in June, 2016). EAB is expected to survive in Manitoba's climate. This pest is very difficult to detect. At the time EAB is detected in an ash tree, the tree has already been infected for a few years and the insect has already spread to surrounding ash trees.

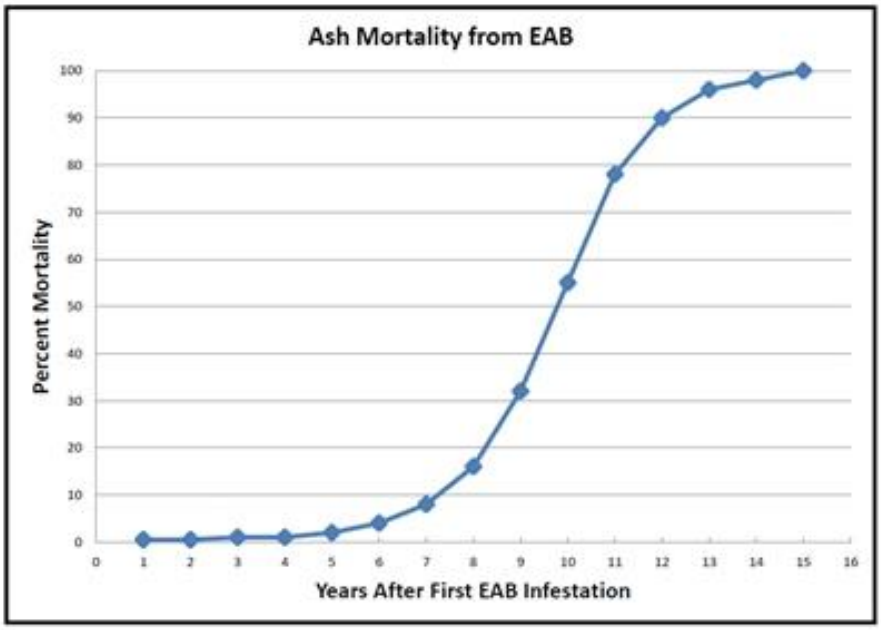


Figure 1. Ash Mortality Curve

The Ash Mortality Curve in Figure 1 demonstrates the amount of dying ash trees increasing exponentially with an EAB infestation. Most recent infestations in other cities have been detected at years 3 to 4 on average. Ash tree death occurs at a slow rate in the first 2 to 5 years of the infestation and increases exponentially thereafter over 5 to 10 years. From the initial detection at year 4, all ash trees die over an approximate 10-year period without any intervention. Insecticide treatment is available for ash trees in good condition and is used to strategically preserve a portion of the ash population and to slow ash mortality over time, hence spreading out costs and logistics of removal and replacements over time. Dead ash trees located in areas where public safety is at risk must be removed as trees fall over within two years of dying.

The City of Winnipeg is at risk of losing all of its ash trees due to EAB over a 10-year period. The City has approximately 101,000 ash trees growing on right-of-ways and in parks which represents over thirty percent (30%) of the City's boulevard and park tree inventory. The current value of Winnipeg's public ash inventory only is estimated to be $437 million. The Urban Forestry Branch has completed an inventory of all ash trees on private properties and in natural areas identifying approximately 256,385 ash trees on private properties and in natural areas potentially valued at an estimated $1.1 billion. The total value of the City of Winnipeg ash population is estimated to be over $1.5 billion.

EAB infestations are resulting in significant costs to remove and replace dead ash trees, and in significant losses of benefits shade trees provide in urban communities. The risks associated with EAB to Winnipeg are listed below:

- reduce Winnipeg's ability to maintain a diverse urban forest, leaving it at higher risk of more significant losses of canopy cover due to other species-specific invasive pests,
- loss of ecological services provided by trees including environmental, economic, and social benefits and quality of life,
- negative impacts on human health – research in the United States estimates that a loss of trees due to EAB increases rates of cardiovascular and lower-respiratory illnesses and subsequent mortality,
- costs of removal – estimated to range from $20.3 million to be $30.5 million over 10 years,
- costs of replacement – estimated to range from $48 million to replace 64,900 trees to $67.2 million to replace 90,800 trees over 10 years,
- costs of treatment – $19.1 million over 10 years,
- loss of valuable asset – estimated current value of $437 million for boulevard and park ash trees alone.

In 2007, the City of Winnipeg began preparing for EAB. The activities undertaken by the City and its partners in preparation for EAB are described in Appendix 2.

EAB Management Approach

The recommended EAB management approach is referred to as "Slow Ash Mortality", or SLAM, approach which is being applied in most Canadian cities dealing with EAB. The SLAM approach includes injecting a percentage of eligible trees with a botanical pesticide registered for use in Canada, the remaining trees are removed as they die, and these trees are subsequently replaced. Generally, trees eligible for injections are those that are greater than 20 cm in trunk diameter, in good condition, and of high value. Treatment occurs on a two-year cycle, hence, half of the trees are treated each year over the 10-year period.

The objective of the SLAM approach is to limit the spread of the EAB population, spread out the mortality of ash trees over time to allow more proactive management of the overwhelming

number of removals and replacements required with an EAB infestation, and preserve our healthy ash trees for as long as possible. Considering the significant population of ash trees and the limitations for tree diversity in Winnipeg, the SLAM approach is recommended for the City of Winnipeg.

Figure 2 below shows the estimated annual loss of ash trees from boulevards and parks over 10 years. These figures represent untreated trees.

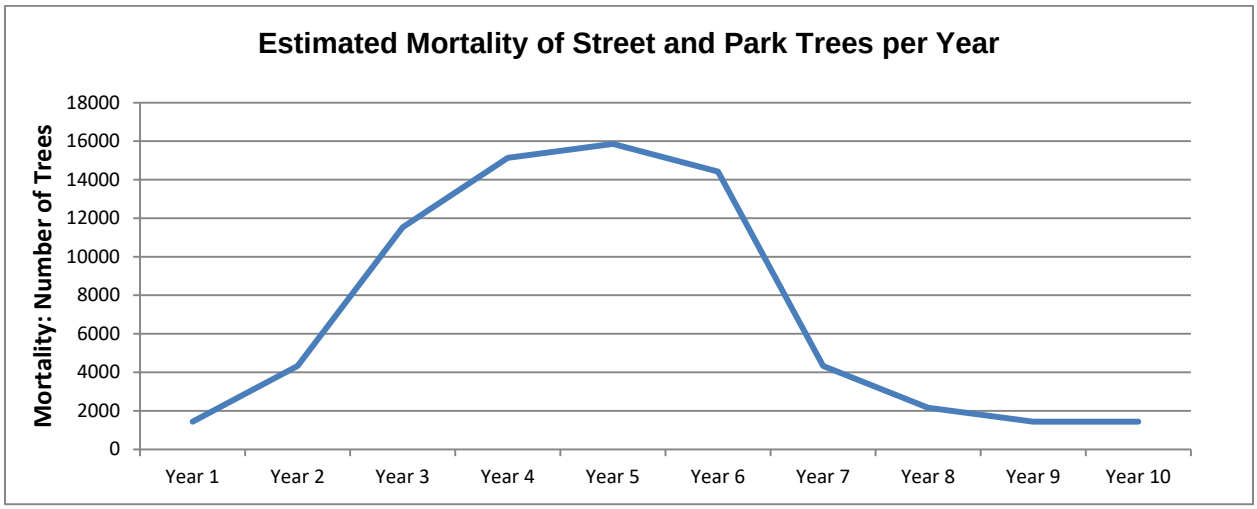


Figure 2. Estimated annual mortality of untreated ash trees on boulevards and in parks.

Treatments are a long term commitment. After the main infestation of EAB has gone through its 10-year cycle, the pest will remain as long as there are ash trees in the City of Winnipeg. In order to continue to preserve a portion of the ash population and to maintain diversity in our urban forest, at this time it is anticipated treatments would continue past the 10-year period of most active EAB management. However, the treatments are anticipated to continue at a smaller scale. Experience in other cities has shown that some treated trees still succumb to the pest over time or die for other reasons.

The percentage of tree replacements is estimated to be 90% which represents the fact that not all sites where ash had been growing previously are suitable for replacements. This percentage also factors in available planting sites as identified in the City's public tree inventory database.

Due to the large, complex, timely and costly nature of the impact EAB will have on the City's urban forest assets and public safety, the City must have the resources to plan the response to and the management of this pest. There is currently a lack of staff resources to plan and implement a detailed response and management plan, and to effectively plan and coordinate information and services with the numerous stakeholders involved in the management of this pest. A temporary position, Supervisor of Urban Forestry Technical Services, will be hired in March of 2018 to continue to plan for this invasive pest and to coordinate the complex response. In the 2019 budget, an additional $92,771 in funding will be requested in the 2019 operating budget to make this position permanent.

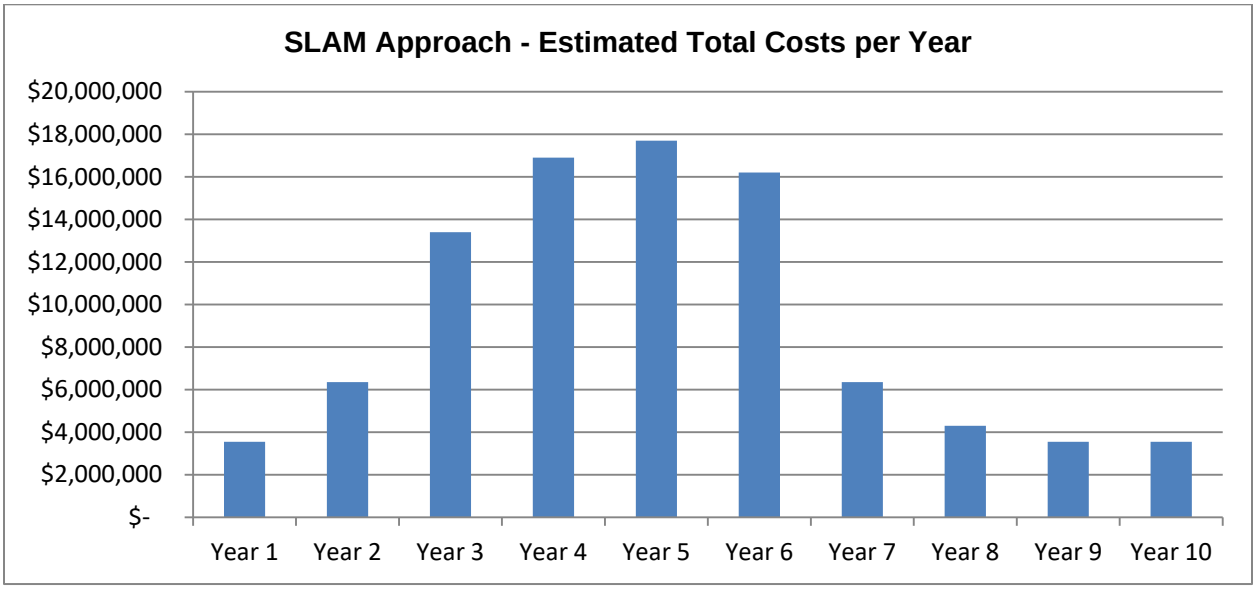
The City will need to engage the Province in discussion regarding the management of EAB and associated costs with the intent of establishing a formal agreement between the City and the Province to partner in EAB management in the City of Winnipeg.

A breakdown of estimated costs associated with the SLAM approach is presented in Table 1 and Figure 3 below.

Table 1. Summary of Costs for SLAM approach: When EAB is discovered, treat 75% of eligible trees, remove remaining ash as they die, replace 90% over 10 years.

ACTIVITY	TOTAL COST OF ACTIVITY	COMMENTS
Removal of dead ash over 10 years	$22,500,000	Remove 72,100 trees
Tree replacement over 10 years	$48,000,000	Plant 64,900 trees
Treat 75% of eligible ash over 10 years	$19,500,000	28,830 trees preserved
TOTAL ADDITIONAL OVER 10 YEARS	**$90,000,000**	

Figure 3. Estimated total costs per year including treatments, removals and replacements.



Appendix 1 describes the proposed Emerald Ash Borer Emergency Response Plan for the City of Winnipeg at an estimated cost of up to $1.3 million. On December 12, 2017 Council approved a total of $7.1 million for the Urban Forest Enhancement Program and the Reforestation-Improvements Program. A total of $766,000 is dedicated to the Reforestation Program. A total of $4.6 million is dedicated to DED management within the Urban Forest Enhancement Program, while the remaining $1.734 million was dedicated to systematic tree pruning and a Comprehensive Urban Forest Management Plan. Since DED management and reforestation is extremely important given the introduction of EAB in Winnipeg, it is proposed that $1.3 million of the $1.734 million be used for the EAB Emergency Response Plan. Another $150,000 of this funding is intended to be used towards a Comprehensive Urban Forestry Management Plan leaving approximately $284,000 remaining for systematic tree pruning. The reduction of capital funding combined with operating funding will result in a significant increase in the pruning cycle of once every 39 years from once every 26 years.

FINANCIAL IMPACT

Financial Impact Statement

Date: December 21, 2017

Project Name:

Emerald Ash Borer Preparedness, Response and Management Options

First Year of Program **2018**

	2018	2019	2020	2021	2022
Capital					
Capital Expenditures Required	$ 1,300,000	$ -	$ -	$ -	$ -
Less: Existing Budgeted Costs	1,300,000	-	-	-	-
Additional Capital Budget Required	$ -	$ -	$ -	$ -	$ -
Funding Sources:					
Debt - Internal	$ -	$ -	$ -	$ -	$ -
Debt - External	-	-	-	-	-
Grants (Enter Description Here)	-	-	-	-	-
Reserves, Equity, Surplus	-	-	-	-	-
Other - Enter Description Here	-	-	-	-	-
Total Funding	$ -	$ -	$ -	$ -	$ -
Total Additional Capital Budget Required	$ -				
Total Additional Debt Required	$ -				
Current Expenditures/Revenues					
Direct Costs	72,797	115,121	121,915	126,989	132,189
Less: Incremental Revenue/Recovery	72,797	92,771	99,565	104,639	109,839
Net Cost/(Benefit)	-	22,350	22,350	22,350	22,350
Less: Existing Budget Amounts	-	22,350	22,350	22,350	22,350
Net Budget Adjustment Required	-	-	-	-	-

Additional Comments: The total estimated costs of $1,300,000 will be funded by the 2018 Urban Forest Enhancement Program (tree pruning). The Operating Direct costs in 2018 - 2022 represent the salaries and benefits for the Supervisor of Urban Forestry Technical Services position to be recovered from various Parks capital programs, and the 2019 - 2022 Debt and Finance charges on External Debt funding in the amount of $22,350 annually. The 2018 amount assumes the position will be filled March 1, 2018 at a Grade 4, Step 1 of the WAPSO pay scale.

"Original signed by J. Peters CPA, CGA for"
J. Ruby CPA,CA
Manager of Finance & Administration

CONSULTATION

This Report has been prepared in consultation with:
Manitoba Sustainable Development – Forest Health Branch
Trees Winnipeg
City of Thunder Bay
City of Montreal

OURWINNIPEG POLICY ALIGNMENT

The report is in accordance with the OurWinnipeg policy to Protect and Enhance the Urban Forest, 02-2 Environment, and Direction Strategies of 'Complete Communities' and 'A Sustainable City'.

SUBMITTED BY

Department:	Public Works
Division:	Parks and Open Space
Prepared by:	Martha Barwinsky, City Forester
	David Domke, Manager of Parks and Open Space
Date:	January 10, 2018

Attachments:
Appendix 1 - Emerald Ash Borer Response Plan
Appendix 2 – Background of The City of Winnipeg Emerald Ash Borer Preparedness

Appendix 1
Emerald Ash Borer Emergency Response Plan

On November 30, 2017, the Canadian Food Inspection Agency (CFIA) confirmed emerald ash borer (EAB) has been discovered in Winnipeg. This initial detection is in the Archwood neighbourhood of St. Boniface. The City of Winnipeg, CFIA, Province of Manitoba, and Trees Winnipeg are working together to coordinate a plan for emergency response to this initial detection. A proposed response plan including Class 5 estimates of resources required in 2018 is outlined below and includes the items listed below:

1. Delimiting survey
2. Supervisor of Forestry Technical Services
3. Removal of public ash tree, wood disposal, and tree replacements
4. Treatment of public ash trees
5. Monitoring
6. Communications, public education, and support for private properties

1. Delimiting Survey
   City of Winnipeg, CFIA, Province of Manitoba, and Trees Winnipeg are conducting a delimiting survey from December, 2017 to March, 2018 to identify the extent of EAB infection in ash trees within a 500 m radius of the initial find. The Canadian Forest Service (CFS) is assisting in the design of the delimiting survey and is providing training assistance. If another infected ash tree falls within the initial 500 m radius, another 500 m survey radius is established and so on until no EAB is detected. Estimated cost of initial delimiting survey is $100,000.00.

2. Supervisor of Forestry Technical Services
   The City currently does not have the staff resources to coordinate the complex response to this invasive pest. A Supervisor of Urban Forestry Technical Services is required immediately to plan and coordinate the EAB response at an additional salary cost of $72,797 assuming a start date of March 1, 2018. Although this position will be posted as a temporary positon in 2018, it is recommended this position become permanent through approval in the 2019 operating budget at an additional cost of $92,771. This position would be needed in subsequent years as the first cycle of EAB runs through the city's ash population over an approximate 10-year period. This supervisor is also needed to oversee the impacts to the City's tree inventory as a result of EAB.

3. Removal of Infected Public Ash Trees, Wood Disposal, and Tree Replacements
   Once the delimiting survey is completed, selective public ash tree removals will occur on boulevards and in parks. The City will not be removing ash trees from private property and natural areas. It is estimated approximately 800 public ash trees could be removed within a 1 km radius of the initial detection site at an estimated cost of $680,000. The majority of the wood debris would be chipped but some large debris would be disposed of at Brady Landfill at an estimated cost of $150,000. Planting costs to replace the trees lost is estimated at $600,000; however this activity would not be performed in 2018 as the primary focus in 2018 is to coordinate the first year of response and address the removals and treatments necessary in Year 1.

4. Treatment of Public Ash trees
   A component of slowing the mortality of ash trees (SLAM approach) and preserving a portion of the ash population involves injecting selected healthy ash trees greater than 20 cm trunk diameter with an approved insecticide to protect them from EAB. It is estimated 1,000 ash trees on boulevards and in parks would be treated in summer 2018 at an estimated cost of $225,000.

5. Monitoring
   EAB monitoring with the use of green sticky prism traps will be expanded throughout the City in 2018 in cooperation with the City's Insect Control Branch and Trees Winnipeg at an estimated cost of $40,000.

6. Communications, Public Education and Support for Private Properties
   Trees Winnipeg is a non-profit organization with which the City of Winnipeg has had a long-standing agreement for public awareness and education of urban forestry issues, including Dutch elm disease. It is recommended the grant funding to Trees Winnipeg be increased by an additional $20,000 for Trees Winnipeg to expand their public education programming and coordinate support for private property owners who have ash trees on their properties and whose properties will be impacted by EAB.

Summary of estimated costs for 2018 for EAB Response

Activity	**Estimated Cost for 2018**
Delimiting survey	$100,000
Supervisor of Forestry Technical Services	$72,797
Tree Removals	$830,000
Treatments	$225,000
Monitoring	$40,000
Public Education and Support for Private Properties	$20,000
TOTAL	**$1,287,797**

Appendix 2
Background of the City of Winnipeg Emerald Ash Borer Preparedness

In 2007, the City of Winnipeg began preparing for EAB and has undertaken the activities listed below in relation to preparation and developing a strategy for managing EAB:

1. Training

Since 2007, the City of Winnipeg has trained all Urban Forestry staff and other staff in Public Works in the detection of EAB. Training is ongoing as new staff are recruited and new information is available.

In fall 2009, representatives of the Urban Forestry Branch traveled to St. Paul, Minnesota with representatives of Manitoba Conservation (now Manitoba Sustainable Development) to research how the City of St. Paul responded to their EAB discovery in summer 2009.

In 2014, a representative of the Urban Forestry Branch traveled to Minneapolis, Minnesota with representatives of Manitoba Conservation (now Manitoba Sustainable Development) to follow up on EAB management in Minnesota and to discuss current research findings on EAB management in Minnesota.

2. Industry and Public Education

In 2007, the City facilitated a workshop with the nursery, arboricultural and landscape industries, and civic, provincial and federal government agencies to increase awareness of the threat of EAB and to develop a cooperative approach to prevent its introduction, reduce its impact, and prepare response and management plans. At this workshop, the City announced updated tree diversity guidelines to increase the diversity of tree species planted on public property in the City of Winnipeg. Since that time, the nursery industry in Western Canada has responded by increasing the diversity of their nursery stock and has reduced the volume of ash trees in production, however availability and diversity of shade trees is still limited.

In 2012, Trees Winnipeg, in partnership with the City of Winnipeg and the federal government, launched the Winnipeg Forest Watch Program to engage the citizens of Winnipeg to increase awareness of the trees in their communities and to educate the general public on EAB.

In 2014, the Urban Forestry Branch completed the installation of twelve (12) signs along right-of-ways on major entry routes into the City of Winnipeg. The goals of this project were to raise public awareness of destructive and invasive pests or diseases that can damage Winnipeg's valuable and unique urban forest, to help reduce the spread of currently established tree diseases such as Dutch elm disease, and to help prevent the introduction and establishment of new pests, such as EAB.

In 2016, the City of Winnipeg implemented the Winnipeg ReLeaf Program with a grant from TD GreenStreets and in partnership with Trees Winnipeg. The goal of this program is to create greater awareness of the importance of tree species diversity in our urban forest, to encourage property owners to replace trees lost to DED and other reasons to preserve and enhance our urban forest, and to create greater awareness of invasive pests that threaten our urban forest – particularly EAB.

The City of Winnipeg and Trees Winnipeg organized an EAB Symposium in March, 2017 and a field workshop in September, 2017 to update prairie communities and industry on the threat of EAB. The City and Trees Winnipeg are also in discussion to augment public education with a "tree ribbon campaign" following a similar campaign initiated in Thunder Bay in 2016.

3. Monitoring

Since 2010, the City of Winnipeg has been using green prism traps to monitor for EAB in partnership with the CFIA, MSD and Trees Winnipeg. These traps have functioned primarily in public education and awareness. The City continues to partner with Trees Winnipeg in the use of traps.

Urban Forestry Branch staff inspects ash trees for signs and symptoms of EAB during the course of their daily tasks when pruning, removing, or inspecting ash trees on streets and in parks.

4. Tree Inventory

In 2008, the Urban Forestry Branch initiated data collection of the City's urban forest asset. In 2012, the Urban Forestry Branch completed data collection for the inventory of trees on streets and in parks throughout the City of Winnipeg. In 2014, the City's tree inventory system went live and became fully operational. In 2015, data collection for an inventory of elm trees on private property and in natural areas was completed to supplement the public tree inventory to update the initial elm tree count that was conducted in the early 1970's for the management of Dutch elm disease. In 2016, an inventory of ash trees on private properties and in natural areas was initiated to supplement the public tree inventory and to provide necessary information to plan for the City's response to EAB and identify the resources that will be required to manage EAB. Data collection for the private ash inventory was completed in 2017.

5. Strategies and Urban Forestry Programs

In 2007, the Urban Forestry Branch drafted an EAB Preparedness and Response Plan, outlining guidelines for preparing and monitoring for EAB, responding to and management of EAB. The City of Winnipeg Public Works Department also began working with the Canadian Food Inspection Agency (CFIA) and the Province of Manitoba Sustainable Development (MSD) (previously Manitoba Conservation) to create a Manitoba EAB Response Plan. An initial plan was drafted in 2011 and the Province has been updating the Plan on a regular basis. The Manitoba plan outlines roles and responsibilities of the various levels of government in the prevention, monitoring for, response to, and management of EAB. Both plans have served as living documents over time and have been revised as more information comes forward from research and other municipalities who have had to respond to EAB.

In 2009, the City of Winnipeg officially implemented tree diversity guidelines whereby, in new developments, no more than 30% of any type of tree (i.e. elm, ash, linden and other) is planted on boulevards and in parks. The Urban Forestry Branch reforestation program has followed more stringent tree diversity guidelines of no more than 25% of any one type of tree. Diversity of tree species is an important principle in the sustainability of our urban forest. By maintaining a diverse composition of tree species in the urban forest, a monoculture effect is prevented, and entire neighbourhoods or areas of the city are less vulnerable to complete loss of tree canopy by species-specific pests such as EAB.

Since 2009, the Urban Forestry Branch has been reducing the percentage of ash being planted via the City's reforestation program. In 2016, with the exception of 25 Mancana ash trees, ash trees have been removed from the City's reforestation program, with the goal of excluding ash trees in all City of Winnipeg tree planting projects and new developments effective 2017.

In 2011, the Urban Forestry Branch met with the Solid Waste Division of the Water and Waste Department to discuss management of diseased elm at Brady Landfill. At that time, the Urban Forestry Branch discussed the impacts of EAB on the landfill due to the high volume of wood waste that would need to be disposed of and processed in accordance with federal and provincial legislation. The Urban Forestry Branch will be resuming discussion with Solid Waste to identify wood waste disposal options and wood waste utilization strategy based on information gained in Thunder Bay.

In 2011, the Executive Policy Committee recommended the City of Winnipeg immediately establish a policy banning the planting of ash trees on public and private property. Council referred the matter to the Winnipeg Public Service to report back to the Standing Policy Committee on Infrastructure Renewal and Public Works. At that time, Public Works recommended continuation of planting ash as there is no replacement for the ash tree, we are limited in the different types of trees we can grow in our harsh prairie climate and on our heavy clay soils, and the nursery industry did not have the volume of stock of other tree species available to replace ash. There was also much to be learned yet from other municipalities and cities responding to EAB and through research to justify implementing an outright ban of ash at the time. The City also does not have jurisdiction over the planting of trees on private properties to ban all ash planting, and the Technical Advisory Committee for EAB, comprised of representatives of city, provincial and federal governments advised against a ban on planting ash at the time.

In 2015, the Canadian Council of Forest Ministers published an Emerald Ash Borer Pest Risk Analysis for Northern Ontario and Manitoba, outlining the risks associated specifically to our region, including Winnipeg. This analysis estimated that Thunder Bay and Winnipeg would be infested with EAB within 10 years by 2025. EAB was found in Thunder Bay last summer (2016) and much sooner than predicted by this risk analysis.

6. Most Recent Activities

Representatives of the City of Winnipeg met with the City of Montreal in September, 2016 to learn from Montreal's experiences so far in managing EAB. In October 2016, representatives from the City of Winnipeg, Province of Manitoba and City of Brandon visited Thunder Bay to experience how the City of Thunder Bay has responded to their EAB infestation.

With the recent discovery of EAB in Thunder Bay in 2016, the City of Winnipeg initiated resumption of discussions and planning for EAB with CFIA, MSD and Trees Winnipeg. The City of Winnipeg Urban Forestry Branch and Manitoba Sustainable Development Forest Health Branch have had preliminary discussions related to the EAB cost-sharing agreement and programming and have identified that an EAB cost-sharing agreement must remain separate from the DED cost-sharing agreement to prevent the loss of DED management. Research and experiences in other cities show the costs of EAB are largely borne by municipal governments and homeowners.

Most recent information from the infestation in Thunder Bay indicates EAB may have a longer life cycle and its overwintering capacity may be somewhat less successful here than in warmer climates, which suggests its natural spread may not occur as rapidly. However, detection of this pest may be more difficult here than in warmer climates as it behaves differently than most of the research has indicated thus far. The Manitoba and City of Winnipeg EAB Response Plans are currently being updated.

In 2017, the Province has implemented restrictions on movement of ash material into Manitoba from the eastern provinces, under the authority of the Manitoba Forest Health Protection Act and Regulations.

Effective January 1, 2017, the City of Winnipeg has excluded all ash (*Fraxinus*) species from the City's reforestation program. Also in 2017, the City of Winnipeg has implemented changes to City's list of acceptable tree species for boulevard plantings in new developments as described below:

- effective June 1, 2017, the City of Winnipeg has removed all ash species from the City's list of acceptable tree species for boulevard plantings,
- for existing development agreements up to May 31, 2017, only Mancana ash (*Fraxinus mandshurica* 'Mancana') will be accepted for boulevard and park plantings up to November 30, 2017 and shall comprise only up to 5% of the total boulevard and park tree plantings for the development, and
- for new development agreements created after May 31, 2017, no ash (*Fraxinus*) will be accepted for boulevard and park plantings effective June 1, 2017.