
REPORT NUMBER 065-2024-Infrastructure, Development & Operations-Engineering & Operations

DATE

PREPARED

March 22, 2024

FILE

MEETING DATE

April 8, 2024

SUBJECT

Emerald Ash Borer Management Strategy Update 2021-2023

RECOMMENDATION

For information.

LINK TO STRATEGIC PLAN

This Report directly supports a priority of the City of Thunder Bay 2023-2027 Corporate Strategic Plan, Our Vision: Maamawe, growing together and directly supports the Sustainability Goal:

Take decisive action to respond to the climate emergency.

- Invest in **Green and Climate-Resilient** infrastructure to meet the long-term needs of our community.

EXECUTIVE SUMMARY

This Report provides a status update on the implementation of the Emerald Ash Borer (EAB) Management Strategy, including information related to the management activities completed in 2021, 2022, and 2023. EAB monitoring, tree injection and strategic removals are aligned with the original strategy and subsequent amendments. Targeted removals and financial resources are on track with estimates in the original strategy. In 2022 and 2023, trap monitoring, service requests, and casual observation indicate an accelerated rate of change in the beetle population, consistent with other jurisdictions.

DISCUSSION

At the October 3, 2016, Committee of the Whole Meeting, Corporate Report No. 141/2016 (Infrastructure and Operations - Engineering & Operations) Options for Management of Emerald Ash Borer (EAB) was presented. City Council authorized

Administration to proceed with an Active Management EAB Strategy at a 50% treatment level approach.

Only ash trees are vulnerable to the EAB beetle. The beetles bore into the trunks and branches of ash trees and create extensive tunnels, weakening the nutrient carrying structures of the trees, resulting in the death of the tree. These dead and weakened trees can become a failure hazard.

Active Management consists of treating select mature ash trees to preserve a portion of the City’s ash tree canopy while removing the remaining ash trees over time, as they become a hazard, or as part of strategically planned removals. This helps to spread costs over numerous years and protects the most beneficial portion of the ash tree canopy.

Parks and Open Spaces Forestry & Horticulture unit began implementation of the 50% Active Management Strategy in 2017 continuing through to 2021. At the start of implementation approximately 6300 boulevard and parks trees in the City of Thunder Bay were ash. The strategy planned to inject and preserve 1700 of the mature ash trees and remove the remaining 4600 ash trees.

In 2021, City Council approved changes to the Emerald Ash Borer Management Strategy, effectively reducing the number of trees to be injected with preventative pesticide to 850 trees and extending the plan by an additional 4 years to 2030.

Monitoring of the Infestation

Emerald Ash Borer beetle-trap monitoring results in the past 8 years of the program provided the following Table 1:

Table 1 - Positive EAB Trap Summary

Year	Number of Traps	Positive Locations	Total Positive Locations / Total Traps (%)
2016	116	5	4%
2017	100	10	10%
2018	99	14	14%
2019	54	5	9%
2020	53	17	32%
2021	53	21	40%
2022	50	35	70%

Year	Number of Traps	Positive Locations	Total Positive Locations / Total Traps (%)
2023	49	39	80%

Even with half the number of traps, the number of positive locations continues to increase. The percentage in the last column represents the percentage of traps that produced an EAB compared to the total number of traps that were monitored. Examining the last column is an informative method of comparing the spread of the infestation over time.

Visual monitoring of the Ash Tree population, both injected and non-injected, has continued through the reporting period. Signs of beetle infestation (tree bark flecking, D-shaped emergence holes, crown die-back, trees with insect galleries) increased between 2021 and 2023. Significant indicators of beetle infestation were found in Neebing, Westfort and McIntyre Wards. Lower severity decline is being observed across the rest of the City.

The increase in positive EAB finds may have been affected by the following:

- Relatively warmer winters without extended periods of sudden extreme cold in 2021-2023
- Extended fall and spring seasons allowing high reproductive success
- Significantly less rainfall than previous years stressing trees
- The life-cycle of the Emerald Ash Borer beetles including reproductive rate and two-year life cycle

Significant growth of the infestation may develop as was the process in other jurisdictions, which is what the Forestry and Horticulture department have expected and planned for. Signs of EAB-related decline have increased in the southern portion of the City. The pheromone trapping program will be continued in 2024 to capture adult beetles once they emerge from the infested trees.

Tree Assessment and Treatment

As identified in the Strategy update 2021, we continue to maintain 850 injected trees across the City. Substitutions have been made where a tree is lost to natural decline or another form of mortality. Trees require treatment using the biopesticide TreeAzin© every second year; therefore, approximately half the trees are injected every year. Figure 2 illustrates the location of all injected ash trees.

Removals

Since 2016, the Forestry and Horticulture Unit has been strategically removing Ash Trees throughout the City as part of the EAB strategy.

Treatments and removals for this reporting period are outlined in Table 2 and Figure 3.

Table 2 – Ash Tree Removals, Trimming, Injections and Tree Plant

Year	Inventoried Tree Removal	Non-Inventoried Tree Removal	Number of Tree Trims	Number of Trees Injected	Number of Trees Planted
2021	72	34	200	603	1000
2022	295	83	133	281	850
2023	322	128	145	641	850

The historic strategy has been to remove declining trees as they are identified through service requests, identified by citizens. To achieve the target number of removals (approximately 5500 trees) by 2030, additional removals are focused on neighbourhoods with high Ash Tree densities. Individual tree removals (within those neighbourhoods) are focused on trees with poor form or under electrical lines. The intent of staged removal (some each year) is to have a young established canopy when the final trees are removed.

Where possible, trees have been planted in the same calendar year, or the following year, to both replace and diversify the canopy through these neighbourhoods. Where trees cannot be immediately established at the same address, they are planted in other more suitable areas within the Ward. The location of all remaining inventoried ash trees is shown in Figure 1.

Resolute Biomass Agreement

The agreement between the City of Thunder Bay and Resolute Forest Products to purchase wood chips from the City continued in 2021-2023. All contractors trimming or removing municipal trees, and all City Forestry crews, disposed of wood chips generated by operations at the Resolute Mill site on Broadway Avenue. This diverts hundreds of cubic metres of wood chips from the landfill annually.

Thunder Bay Pulp and Paper continued the previous agreement when the mill was sold in 2023, and it is anticipated Ash Trees will continue to be used as hog fuel by the facility. With Ash removal numbers increasing, this disposal mechanism remains an excellent cost savings and revenue-generation option.

2024 Implementation

All tree related requests will continue to be assessed and those that require immediate attention (for safety) will be dealt with expediently. With early indications that the insect

population growth may intensify in 2024 area-based removals may be escalated according to the original EAB Strategy.

Due to the prevalence of decline indicators (bark flecking, branch decline, D-shaped exit-holes, increased woodpecker activity) in early 2024, work is currently underway to develop a public awareness campaign, plan tree-plant immediately following removals, and potentially plant many smaller trees in parks to accelerate canopy replacement.

Community Education

Anticipated community education includes promoting available information resources (currently available on the website) as significant work was undertaken at the outset of the EAB Infestation. Some materials may be publicized in other formats (e.g. other media mechanisms) to notify the public of escalated removals. The Canadian Food Inspection Agency quarantine zone (no movement of firewood) continues to exist, and the public should be reminded of that, to contain the spread of the beetles.

A proactive information campaign would also include further description of responsibilities for private trees, especially where they impact public safety. Signs may also be required to notify the public that green spaces follow natural biological processes (such as tree decline including mortality) and that overhead hazards (dead branches, tops, and trunks) may be present in unmaintained green spaces. These natural processes serve important biological functions (production of habitat characteristics) for wildlife and should be maintained.

LINK TO EARTHCARE SUSTAINABILITY PLAN

This Report supports Goal 9 of the EarthCare Sustainability Plan 2014-2020 to “protect, maintain, and improve the biodiversity, ecosystems and the well-being of the green infrastructure of Thunder Bay”.

FINANCIAL IMPLICATION

There are no financial implications associated with this information report. The EAB Management Strategy continues to be funded through Parks & Open Spaces capital as per the approved plan.

CONCLUSION

Steps continue to be taken in order to manage and track the EAB infestation while limiting the City’s risk going forward. Administration continues to base ash tree treatment, removal and replacement decisions on the Active Management Strategy at 6% treatment level as referenced in Report No. 72/2021.

BACKGROUND

Report No.122/2016 confirmed the Parks & Open Spaces Division (Forestry & Horticulture Section) will provide Council with annual updates on the state of EAB infestation, monitoring, and activities in Thunder Bay and region, beginning in the fall of 2016.

Report No.141/2016 - Options for Management of Emerald Ash Borer (EAB) directed current EAB management strategy.

Report No. 53/2018 – Emerald Ash Borer (EAB) Management Update

Report No. 57/2019 – Emerald Ash Borer 2018 Update

Report No. 94/2020 – Emerald Ash Borer 2019 Update

Report No. 72/2021 – Emerald Ash Borer 2020 Update

REFERENCE MATERIAL ATTACHED

Figure 1 – Remaining Ash Trees - Proximity to Overhead Wires

Figure 2 – EAB Tree Injection Sites by Year

Figure 3 – Strategic Ash Tree Removals by Year

REPORT PREPARED BY

Dan Corbett, Urban Forester- Parks & Open Spaces
Cory Halvorsen, C.E.T. - Manager Parks & Open Spaces

REPORT SIGNED AND VERIFIED BY

Kerri Marshall, General Manager – Infrastructure, Development & Operations

Date (03/28/2024)