

A decorative graphic at the top of the slide consisting of several overlapping, wavy, horizontal bands in various shades of green, creating a sense of movement and depth.

Preamble to the Reader

- The slideshow “**Developing a Municipal Emerald Ash Borer Management Strategy: Operational Guidelines and Recommendations for Ontario Municipalities**” was developed to assist government and non-government organizations who are developing management plans and communications strategies for emerald ash borer (EAB).
- It is highly-recommended that before this slideshow is shown, the companion video entitled “**Emerald Ash Borer: Facts & Tactics for Urban Residents & Municipal Officials**” be viewed to provide background on emerald ash borer in the urban context.
- Visit www.eomf.on.ca/eab to download the video and this slideshow.
- Municipal circumstances vary depending on size, budgets, forest/ash tree coverage, whether EAB has arrived or not, etc. The Seven Step Strategy can be used in whole or in part and adapted to the specific situation faced by a municipality.



Preamble – cont'd

- Some municipalities may wish to do a more detailed Pest Risk Analysis. Such analyses have three components: an assessment of the risk of pest establishment, spread, and impacts; a description of the management response options and recommendations; and a plan for internal and external communications. The attached slideshow addresses the management plan and associated public communications efforts.

To find out more about conducting detailed Pest Risk Analyses for invasive species including EAB, please contact :

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Developing a Municipal Emerald Ash Borer Management Strategy

Operational Guidelines and Recommendations for Ontario Municipalities

Produced by the Eastern Ontario Model Forest in collaboration with partners from the Regional Forest Health Network and the Ontario Ministry of Natural Resources with funding from the Ontario Invasive Species Centre.

Photo: Ed Czerwinski



General Recommendations

- Become informed about EAB; watch the companion video: “Emerald Ash Borer: Facts & Tactics for Urban Residents & Municipal Officials” (visit eomf.on.ca/eab to download)
- Use this Seven Step Strategy as a guide to develop or review EAB management goals, objectives and plans based on your local circumstances
- Consider adopting the following Ash Canopy Conservation Statement as your overall goal; this statement, which is increasingly endorsed by many organizations, recognizes that EAB can be effectively managed to reduce the ecological and economic impacts on residents and municipalities



General Recommendations

“We the undersigned strongly endorse ash tree conservation as a fundamental component of integrated programs to manage emerald ash borer (EAB) in residential and municipal landscapes. Cost-effective, environmentally sound EAB treatment protocols are now available that can preserve ash trees through peak EAB outbreaks with healthy canopy intact. Used in association with tree inventories and strategic removal / replacement of unhealthy ash, tree conservation will help retain maximum integrity and value of urban forests. This integrated approach to urban EAB management is supported by university scientists with expertise in EAB management, commercial arborists, municipal foresters, public works officials, and non-governmental organizations (NGOs).”

¹ *Endorsed by Tree Canada, the Faculty of Forestry at the University of Toronto, the Society of Municipal Arborists, and many American organizations as listed in this source document: http://www.emeraldashborer.info/files/conserve_ash.pdf*



General Recommendations

- Set clear, measurable objectives (e.g. % ash canopy preserved, protection of high value trees, infrastructure protection, landfill management, etc.); include continual program evaluation and adaptation
- Understand and assess the risks of the EAB threat given your context, and chosen management approach
- Evaluate required and available resources, and devise options where needed
- Think in terms of a ten-year EAB management strategy, and update it annually



General Recommendations – cont'd

- Estimate budget requirements for each step of your strategy
- Consider the informed advice outlined in this EAB Benefit Cost model that shows treatment is less costly than removal + replacement: www.isaontario.com/content/economics-fate-ash-trees
- Collaborate and encourage local partnerships
- Publicize and promote your strategy
- Amend existing tree by-laws/exemptions as necessary
- If your municipal boundaries include rural areas with private woodlots, or large community forests that contain ash stands then add an eighth step as outlined



Overview of the Seven Step Strategy

1. Local Forest/Tree Inventory
2. Detection & Monitoring
3. Tree Planting
4. Tree Protection
5. Tree Removal
6. Wood Movement, Disposal, Processing
7. Public Awareness & Outreach



Step 1. Local Forest /Tree Inventory

Rationale: Know your forest cover and what percentage is ash. Knowing where the ash are enables you to estimate EAB impacts, and set management priorities and objectives.

- What forest and ash tree inventory is available or needed
- Create a map of ash density and current infestations
- Consult the inventory to determine:
 - Impacts from loss of tree canopy, biodiversity and benefits
 - Threats to public safety/infrastructure from hazardous trees
 - Locations of high-value ash trees/stands needing protection
 - The priority and type of specific management action (eg. planting, tree removal)
 - Resource requirements over the term of the plan



Step 2. Detection & Monitoring

Rationale: To detect infestations early, to delineate the areas infested, and to estimate severity of infestations.

- Visual – aerial and ground surveys of crown die-back and other signs and symptoms of EAB attack
- Trapping – June to August using green prism sticky-traps baited with green-leaf-volatiles; EAB pheromone can be added to increase capture
- Branch sampling – finding larval tunnels under the bark to detect low level populations, delineate infested areas, and estimate severity of infestations; visit:
<http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/32127.pdf>
- Site inspection - in response to reports by staff and public



Photo Credits: City of Ottawa; and Dr. Taylor Scarr



Step 3. Tree Planting

Rationale: Proactive and replacement tree planting maintains tree canopy. EAB kills $\geq 99\%$ of untreated ash trees as it spreads through an area; trees decline in 1-3 years after initial EAB attack.

- Under plant non-ash trees in areas of high ash density in advance of tree removal
- Plant non-ash trees to replace trees lost to EAB
- Use a mix of species for biodiversity; planting native species is preferred but non-native trees may be appropriate for some urban growing conditions
- Focus on those areas with EAB infestation and high ash component



Photo Credits: City of Ottawa; Ferguson Forest Centre



Step 4. Tree Protection

Rationale: A proven insecticide can protect trees from EAB, keeping them alive to maintain the urban forest, spread tree losses over several years, and save high-value trees.

- Select stands or trees to be protected; consider large shade trees, parks, public spaces, significant sites and streets, tourism destinations, or trees with high removal costs
- Recommend biennial injection using TreeAzin™; registered product that has had success; botanical-insecticide made from neem trees; delivered by licensed service providers
- The tree must be protected at least until the EAB invasion wave is over



Photo Credits: City of Ottawa



Step 5. Tree Removal

Rationale: EAB kills the trees it infests, creating risks to public safety from falling branches and trees. There is a rapid, exponential increase in numbers of infested and dying ash trees after initial attack.

- Tree removals should be prioritized based on management objectives, assessments of infested areas; affected trees must be removed to protect the public, decrease liabilities, and protect infrastructure
- Mark trees for removal (eg. spray paint)
- Schedule tree removals by neighbourhood; consider neighbourhood plans; communicate and work with associations and residents



Photo Credits: City of Ottawa



Step 6. Wood Movement, Disposal, Processing

Rationale: Reduce EAB spread by controlling the handling, transport and disposal of infested ash. Reduce pressures on landfill capacity. Consider wood processing options.

- Designate a disposal facility or marshaling yard with least peripheral impacts from waste processing activities, and include private land wood disposal
- Plan for common transportation corridors
- EAB is a federally regulated pest; follow all CFIA guidelines and regulations for wood movement; consult CFIA for wood movement restrictions in your area
- Explore processing opportunities to create wood products (e.g. portable sawmilling or chippers to produce lumber, pellets, mulch)
- Process or destroy (e.g. burn) logs before EAB summer flight period to reduce populations and avoid spread



Photo Credits: City of Ottawa



Step 7. Public Awareness & Outreach

Rationale: Proactive and regular communications to the public with consistent messaging builds awareness, trust and cooperation and minimizes opposition.

- Develop an EAB Communications Plan as part of your strategy using appropriate tools.; target public awareness and outreach actions in ways that suit your particular area, demographics and available resources; examples include:
 - i. EAB Webpage - on your municipal website (eg. /eab) so residents can access up-to-date local information, and educational materials. Refer to this new webpage in your communication activities. Many educational materials and resources are available online that you can add or link to (see 'Useful Links' at end of this slideshow)



Step 7. Public Awareness & Outreach

- ii. Social Media – create more online presence to further communications and outreach efforts with a community EAB Facebook page and EAB Twitter feed
- iii. Designate an EAB Hotline – many hotlines go directly to municipal forestry departments or an individual
- iv. Host EAB workshops or consultations – show companion video “EAB Facts and Tactics for Urban Residents & Municipal Governments”; provide hard copy educational materials; outline and promote your municipality’s EAB Management Strategy; consider hosting neighbourhood consultations and developing Neighbourhood EAB Management Strategies if appropriate



Step 7. Public Awareness & Outreach

- v. Media Outreach – develop and deliver regular public service announcements or news releases to local papers, radio, television stations; consider advertising
- vi. Network - identify your local and regional partners, regulatory and scientific organizations, and be aware of developments and new resources; collaborate
- vii. Coordinate – with other departments in your organization
- viii. Signage - both road signage and parks/open space signage are proven awareness-building tools



Step 7. Public Awareness & Outreach

Some Key Messages:

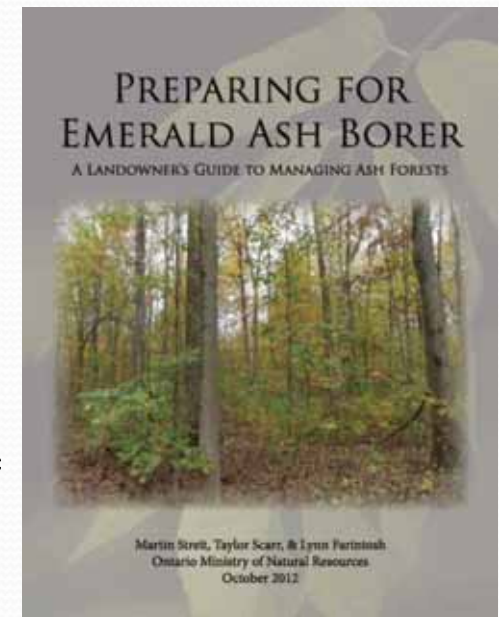
- how to identify an ash tree and EAB
- what to do if your tree has EAB
- treatment vs removal
- homeowner responsibilities
- homeowner role in tree and forest canopy conservation
- plant or replant with preferred species
- benefits and importance of trees
- who to call or where to go for more information
- don't move firewood
- upcoming events



* Step 8. Rural Private Woodlots

* **Rationale:** If you have private woodlot owners within your municipal boundaries who have ash stands, then include additional outreach and messaging for them including a workshop featuring:

- the companion rural video:
Emerald Ash Borer: Facts and Tactics for Woodlot Owners and Forest Managers*
 - the companion guidebook:
**Preparing for Emerald Ash Borer:
A Landowners Guide to Managing Ash Forests***
- * to download rural video and guidebook visit: eomf.on.ca/eab





Other Useful Links

For more information on EAB visit:

- eomf.on.ca/eab
- Society of Municipal Arborists' EAB Position Paper and Toolkit: <http://www.urban-forestry.com/>
- Search for “emerald ash borer” on these sites:
cfs.nrcan.gc.ca
mnr.gov.on.ca
inspection.gc.ca
invadingspecies.com

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*...regional partners working together
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The End

