

CITY OF PORTLAND, MAINE

Standing Committee on Sustainability and Transportation
Councilor Andrew Zarro, District 4, Chair
Councilor Roberto Rodriguez, At-Large
Councilor Victoria Pelletier, District 2

Agenda
April 13, 2022
5:00 PM

This is a virtual meeting using emergency legislation approved by LD 2167; 1 M.R.S. §403A, that authorizes cities and towns to conduct meetings online. This meeting will be conducted remotely using Zoom. Allow your computer to install the free Zoom app to get the best meeting experience. We hope to be able to offer other livestream methods in the future. If you are not able to attend live, we will be posting a recording of the meeting once it has concluded. For public comment, you will need to use the "raise your hand" feature. To raise your hand via

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Or Telephone: 312 626 6799 or +1 929 205 6099 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900
6833 or +1 253 215 8782
Webinar ID: 854 7220 6592
Passcode: 918574

1. Review and approve minutes from March 23
Presenter: Councilor Zarro No Public Comment 5 minutes
 - a. Review and Approve March 23 Minutes
2. Sustainability Program Updates
Presenter: Troy Moon No Public Comment
 - a. Sustainability Program Updates April 13, 2022
3. Presentation and Discussion
 - a. Communication and Update Regarding the Community Composting Program
Presenter: Troy Moon
Public comment will be taken
 - b. Communication Regarding the Impacts of Emerald Ash Borer on City Trees
Presenter: Jeff Tarling, City Arborist
No public comment
 - c. Presentation about the Bird Safe Maine initiative and ways to reduce bird mortality from building strikes
Presenters: Nicholas Lund, Maine Audubon, and Addy Smith-Reiman, Portland Society for

Architecture
No public comment

4. Other Business

CITY OF PORTLAND, MAINE
Committee on Sustainability and Transportation
Councilor Andrew Zarro (D4), Chair
Councilor Victoria Pelletier (D2)
Councilor Roberto Rodriguez (At-Large)

Draft Minutes March 23, 2022

Members Present: Councilor Zarro, Councilor Pelletier, Councilor Rodriguez

Staff Present: Troy Moon, Ethan Hipple, Alex Marshall, Erin Ferrell

Meeting called to order.

March 9 Minutes

Councilor Pelletier moves to approve the January meeting minutes. Councilor Zarro seconds the motion. January minutes passed unanimously, 3-0.

Sustainability Update

Presented by Troy Moon

Electrify Everything! Is off to a good start with over 30 people signing up on our website and we are working on making the material accessible in multiple languages. Troy joined a workshop with Maine DEP to update rules governing maintenance of the fuel storage facilities in South Portland. There is a composting survey requesting feedback on the food waste drop off program with over 100 responses so far.

Committee Comment on Sustainability Update

Councilors note that Electrify Everything! Is also available to renters.

Councilor Zarro asks if a future iteration of Electrify Everything! Can involve business owners. *Yes, this iteration is mainly focused on homeowners but future iterations could focus heavily on renters and business owners.*

Councilor Pelletier asks about the role of Natural Helpers and OEO in Electrify Everything! *We are still deciding how to move forward with getting Natural Helpers involved.*

Presentation by the Center for Climate Integrity

Presented by Lyla Shornstein, Will Sedlack, and Anthony Moffa

Center for Climate Integrity's mission is to empower communities and elected officials with the knowledge and tools they need to hold polluters accountable for their contributions to the climate crisis. The cost of climate change in Portland includes: increased cooling costs, increased road damage, increased damage to water/sewer pipes, more cooling centers, financing for A/Cs for low-income communities, increased vector-borne illness, reducing urban heat island effect, protecting drinking water, addressing properties in flood-prone areas, more culverts, retention basins, relief drains, increased bridge inspection and repair, increasing permeability of roads, elevating roads and structures, floodproofing municipal buildings, protecting emergency operations. This causes major cost increase that falls on local

government. Fossil fuel companies are by far the largest polluters leading to climate change. There is evidence that fossil fuel companies knew about their products causing climate change. CCI believes all communities - regardless of size or wealth - can seek justice for the harms perpetrated against them by Big Oil.

Councilor Comment on Presentation by the Center for Climate Integrity

Councilor Zarro emphasizes that we are not all impacted equally and addressing equity in climate justice is important. Why would a municipality take the lead on a case like this instead of the state? *Many times it is due to political will. Many times local communities feel the impacts first and take action first and the state may follow. Municipalities are known to be the first responders of the climate crisis.*

Councilor Pelletier notes that although Portland is not a large city, we are not too small to take action. Where can on the ground activists begin to get involved? *Starting with talking about climate impacts and bringing attention to the issue is a great place to start. There is a role for people to play for organizations that are in tune with how the community feels, be involved in how the money be divided. Talking with city councilors can also help. Maine Conservation Voters is available to help people figure out where to start.*

Pesticide Management Advisory Committee Annual Report

Presented by Karen Snyder

PMAC Chair, Karen Snyder presented the annual report. During the past year, Portland Parks & Recreation reported success in transitioning high-use Fox Field to organic management and in treating the browntail moth infestation using an aerial spray of an organic listed pesticide. The PMAC received 44 applicator reports in 2021, which is more than it received in 2020. A review of 2020 applicator reports conducted in 2021 discovered two violations. There were six pesticide complaints registered on SeeClickFix in 2021, the majority for signage violations. The PMAC makes three recommendations to the City Council: reorganize the PMAC as an LMAC; expand the ordinance to include fertilizers; and continue organic land care educational efforts in conjunction with South Portland and other communities. The PMAC also proposes

Councilor Comment on Pesticide Management Advisory Committee Annual Report

Councilor Zarro notes that pfas is a big conversation. Do we know where pfas is showing up in our municipality? *There are many sludge permitted sites in Maine. This is something the PMAC will continue to look into.*

Councilor Rodriguez asks how we came to the conclusion of the ranked priorities. *There were many exemptions to the pesticide ordinance. There is now enough political interest to implement a fertilizer ordinance.* How can we better track how many applicators are practicing in Portland? *The PMAC would suggest implementing a Portland-specific applicator license.*

Food Truck Management Plan for the Eastern Promenade

Presented by Alex Marshall and Ethan Hipple

The proposal addresses the main concerns that have developed over the last two years related to the increased presence of food trucks on the Eastern Promenade. The presence of the food

trucks at this location activates the park and provides a great service to the public, and the Parks & Recreation Department goal is to develop guidelines that help facilitate their continued success at this site, while mitigating the negative impacts to the park. This proposal was designed in collaboration with the Department of Public Works and all feedback has been incorporated. Four major issues that have come forward are: pedestrian safety, carbon emissions, root zone compaction, and excessive litter/trash removal needs.

Parks and Recreation Dept put forward 2 options to move forward. Option 1 includes a shift in the roadway travel lanes. The house side of the Eastern Promenade Rd would be stripped of parking and the two travel lanes will shift towards that same curb line. Shifting lanes allows food trucks to be moved off the park side curb line. This creates a 6' pedestrian pathway. This option eliminates 30 parking spaces seasonally.

Parks and Rec will install 4 in-ground trash receptacles with a capacity of 300 gallons each for a total of 1,200 gallons. Food Trucks will be required to provide a trash barrel at their vehicle that is a minimum of 30 gallons.

There is an electrical power source below the Cleeve Monument and the Dept plans to bury conduit from these utility boxes down the back of the curblane and along the entire stretch of the Food Truck Block.

Option 2 includes moving the Food Trucks to space between Turner and Quebec Streets. This option would also modify the mid-lot on Cutter St to also accommodate Food Trucks.

Public Comment on Food Truck Management Plan for the Eastern Promenade

Many residents were concerned about noise pollution, visual disruptions to the park, litter, the removal of parking spaces, and the possible smell of the large trash receptacles. Many residents thanked the Parks and Rec Department's for their work. Many residents expressed appreciation for the food trucks. The public was interested in both options presented.

Councilor Comment on Food Truck Management Plan for the Eastern Promenade

Councilor Pelletier notes that Portland is becoming a city and we will continuously have this dilemma of holding onto the large town feel and morphing into a bustling city. The Eastern Prom is a large attraction in Portland. The food truck scene has the opportunity to bring people together and experience the water views. The electrical power sources are necessary and pushing for compostable materials is important. Councilor Pelletier recommends moving forward with Option 1. Does the Cutter St option include the hybrid option of only moving some food trucks? *There are 3 options: Option 1, moving some trucks to Cutter st or moving all trucks to Cutter st.* Will there be a smell to the large trash receptacles? *They are designed with smell in mind and there should not be a smell.* Can you speak on bike traffic if going forward with Option 1? *The bike traffic would be the same as existing with more visibility.*

Councilor Rodriguez asks if historical preservation was taken into consideration when proposing the tree protection areas. *The long term goal would be to install metal tree barriers to align more with the historical preservation standard.* Councilor Rodriguez is in favor of the trash receptacles. What other use is there for the electrical hookups in that area? *They would be primarily for the food trucks.* This could be the reason for the food trucks to pay for the electrical

installation. Councilor Rodriguez asks if removing the parking spaces is more car-centered thinking than pedestrian-centered. Councilor notes that one of the reasons there have not been accidents could be because the congestion slows traffic.

Councilor Zarro notes in the last year there were 10-15 trucks. This year would limit it to 5-7 trucks. Are there plans to allow for all the food trucks to be able to access the spaces? *There are a few options including: allowing trucks to sign up for spots or set up a lottery system. Both options could allow for more than 5 food trucks. There is more flexibility with the mid-level parking lot option.* Councilor Zarro suggests adding electric hookup capabilities in both locations to allow for more vendors while addressing the negative impacts. Food truck business model is all takeout and the materials are important. It would be important to incentivize compostable/biodegradable options. *Troy Moon suggests following up with a mandate similar to the straw ban.* Councilor Zarro would like to revisit the topic. Would we be able to stripe for bike lanes? *Not in that section with the food trucks - currently or within the proposal.*

The Committee notes that with all public comment and councilor comment, the committee would be interested in pursuing option 1.

Councilor Recommendation of Food Truck Management Plan

Councilor Pelletier Motions to Recommend Option 1 to the Council. Approves unanimously.

Councilor Rodriguez motions to adjourn the meeting. Meeting Adjourned.



CITY OF PORTLAND

Sustainability Office

Troy Moon

Sustainability Director

Sustainability Updates

April 11, 2022

Energy:

Erin conducted two training sessions for property owners who are required to submit their energy data as part of our Energy Benchmarking program. They were well attended and participants had many good questions. Erin continues to work with property owners to help them complete their reports with the help of PCAT members.

Electrify Everything continues to make progress. We have made contact with 33 people through our form and residents have also been reaching out to ReVision directly.

Waste Reduction

Efforts have focused on composting. We'll have a larger discussion as part of the agenda.

Education and Outreach:

Since the March 23 Sustainability and Transportation Committee meeting we have participated in several events:

March 24 – Troy was a guest at the Friends of Woodford Corner meeting discussing waste reduction and composting.

March 29 – We hosted a webinar with Efficiency Maine and talked about ways residents can access rebates and incentives to weatherize and electrify their homes..

April 1 – We hosted our Earth Month Kick Off in Post Office Park along with ecomaine and Window Dressers. The weather was cold and rainy so attendance wasn't what we hoped. We're planning to do tabling again, probably in June.

April 8 – Coffee and Climate featured our Parks crew talking about how they are using electric mowers and trimmers to maintain playgrounds. A representative from E-GO tools also attended to share advances in battery technology in the yard and power tool market.

Climate and Coffee events are community conversations that happen on the 2nd Friday of the month at 9 AM. We record sessions with guest speakers and post them on www.oneclimatefuture.org, along with other information about our work. You can also follow us on social media. Instagram @sustainableportlandme / Twitter @SustainPortME / FB @SustainablePortlandME

The next Coffee and Climate will be held on May 13th and the topic is Food Waste.

Sustainability Office

Troy Moon

Sustainability Director

April 8, 2022



Subject: Communication Regarding the Community Compost Program
From: Troy Moon, Sustainability Director

On Earth Day, 2021 the City launched a pilot program to demonstrate the effectiveness of community compost sites in Portland. The program launched with five drop off locations:

- North Street Garden
- Boyd Street Garden
- Clark Street Garden
- Libbytown Garden
- Riverside Recycling Facility

As the one year anniversary of the program approaches, the Sustainability Office has been evaluating the success of the program, the appropriateness of the current locations, and ways to improve opportunities for Portland residents to reduce their food waste by participating in a compost collection program.

During the meeting City staff will share with the Committee the steps we will be taking to expand the program and the adjustments we are making to address feedback we have received from members of the public. We will also share the preliminary results of the Civil Space campaign we have been conducting to solicit public input about the program. Over 400 residents have completed our survey so far and have offered valuable recommendations about potential drop off locations, feedback about the drop off locations, and input about how much they have come to value the composting program.

Anyone wishing to participate in the [survey](#) may do so until the end of the day on April 15.

Sustainability Office

Troy Moon

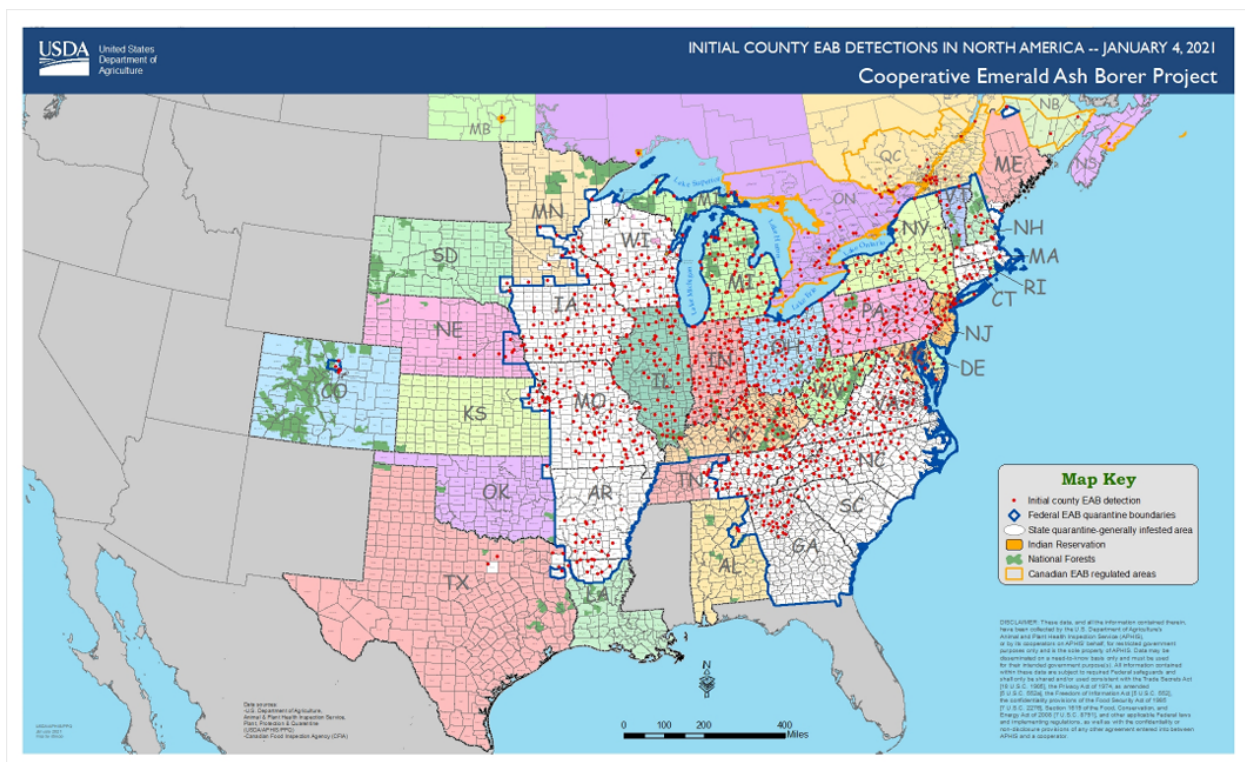
Sustainability Director

March 7, 2022



Subject: Emerald Ash Borer
From: Troy Moon, Sustainability Director

Over the past decade the Emerald Ash Borer has devastated ash tree populations across many parts of the eastern part of the country. States such as Indiana, Ohio, and Illinois have been particularly affected. Federal, State, and local foresters have been tracking the spread of this invasive pest and have recently discovered them in Maine.



The Parks, Recreation, and Facilities Department has been working closely with the Maine Department of Agriculture, Conservation and Forestry to develop a strategy to address this situation. City Arborist, Jeff Tarling, will make a presentation to the Committee describing the threat posed by the Emerald Ash Borer and discuss the City's strategy to manage the impacts on our tree canopy.

The City's tree inventory has documented over 600 ash trees along the street or in parks:

Portland's Street & Public Grounds Ash trees

2" to 12" - 441

13" to 23" - 135

24"+ - 27

Unknown dbh - 6

Total - 609

Damage to these trees will be a significant blow to the tree canopy.

For further information please refer to the following references:

<https://www.maine.gov/dacf/php/caps/EAB/index.shtml>

<http://www.emeraldashborer.info/>

[https://www.maine.gov/dacf/php/caps/EAB/presentations/Siegert-Houlton-Winter-Ag-School-talk-\(EAB\)-Apr-2019.pdf](https://www.maine.gov/dacf/php/caps/EAB/presentations/Siegert-Houlton-Winter-Ag-School-talk-(EAB)-Apr-2019.pdf)

This is an informational presentation to inform the City Council and the public of the threat posed to the City's tree canopy.

City of Portland Emerald Ash Borer Management Plan 2021



Acknowledgements

This report was made possible with funding from the USDA Forest Service.

About Project Canopy

Project Canopy is Maine's urban and community forest program, a program of the Maine Forest Service under Maine's Department of Agriculture, Conservation and Forestry. It educates people about the benefits trees provide, and how trees make people's lives better. It connects people who have a particular expertise to people who need that expertise. It helps build bridges with town and city governments, and it knows how to communicate in a local, political environment. And just as important, Project Canopy helps people talk about success stories, so that they can find the motivation --- and inspiration --- that is crucial for developing creative, long-term community forestry programs.

The Maine Forest Service has an incredible reservoir of knowledge and expertise. The challenge for us is to get that knowledge to the people who can use it. Any long-term community forestry program needs commitment and understanding from many different corners. Project Canopy's role is to get people in different corners talking to each other, so that awareness about trees can grow by leaps and bounds. We do that by using down-to-earth strategies and deploying technical experts into the field to lend hands-on assistance.

For example:

- Helping recruit and organize volunteers;
- Providing model community tree ordinances;
- Assisting in fund-raising efforts;
- Training tree stewards;
- Providing street tree inventory software;
- Helping communities appoint/elect a community tree warden;
- Linking communities to other Maine communities with successful tree programs;
- Providing lists of local foresters and arborists;
- Building bridges to national community tree organizations;
- Assisting in development of a long-term community tree plan;

And much more.

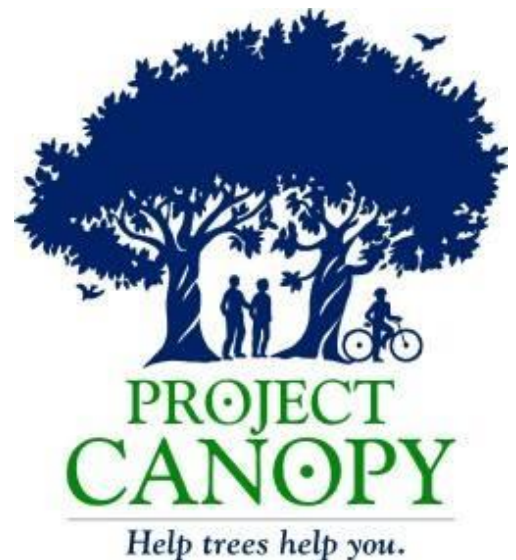


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Executive Summary

The *Agrilus planipennis*, commonly known as the Emerald Ash Borer or EAB, is an exotic wood-boring beetle that was discovered in southeastern Michigan in 2002 and feeds exclusively on trees in the genus *Fraxinus* (there is evidence to support EAB also feeds on *Chionanthus virginicus* (white fringetree), which is also in the *Oleaceae* Family with ash.). Native to Asia and Eastern Russia, this tiny green beetle has killed hundreds of millions of ash trees in 35 states and 5 Canadian provinces, causing devastation rivaling that of Dutch Elm Disease and Chestnut Blight. This insect will inevitably destroy most ash trees left untreated by insecticides and will pose significant human health and safety risks.



Figure 1. Emerald ash borer. USDA photo



Figure 2. Ash tree on the Western Prom tagged for Earth Day. Kim Ballard photo.

Here in Maine, EAB infestations have been confirmed in Aroostook, Cumberland and York Counties. Found in Portland in 2019, we can expect to lose the vast majority of the ash trees in the City within several years. While only 3% of publicly owned trees are ash, Portland, the most populated city in the state, is an area of particular risk as it is home to numerous parks, wooded trails, and neighborhoods nestled among streets hosting towering mature ash trees. Publicly owned trees include those on municipal properties (community parks, cemeteries, etc.), downtown sidewalks, as well as within the right-of-way (ROW) along city streets.

This pest management plan will describe the scope of the threat to public property and provide recommendations to slow the spread and minimize the economic, environmental, and social impacts of EAB on the City of Portland over the next 5 years. By implementing the provisions in this plan, the City is attempting to mitigate the disruption by EAB to its urban and community forest, and the numerous benefits it provides. Taking a proactive and aggressive approach to this invasion will enable the City to address public and private needs in an efficient and effective manner.

The goals of the Portland Emerald Ash Borer Management Plan are to:

- Ensure Public Safety and Minimize Liability
- Mitigate the Loss of Significant High Value Ash Trees
- Maintain the City's Tree Canopy
- Provide Public Education and Awareness

This plan is based on the most recent scientific studies and recommendations from key partners and multiple state and federal agencies. As this is a living document, updates to this plan should be made as new information and recommendations are released – ideally on an annual basis. A comprehensive update that includes achievements, lessons learned, and any additional goals, should be conducted at the end of 5 years.

State and local government, municipal boards and committees, conservation agencies, and private landowners all play an important role in monitoring and maintaining urban forests. **A healthy public tree population is contingent upon proper management, stewardship, and a municipality's commitment to understanding and maintaining its urban forest.**



Figure 3. Western Promenade. Kim Ballard photo.

Goals and Actions Summary

Ensure Public Safety and Minimize Liability

- Identify hazard trees in infested areas
- Remove dead or dying ash trees from roadways and public areas promptly (include private trees as funds allow)
- Detect spread of infestation into new neighborhoods as early as possible and suppress the pest pressure.

Mitigate the Loss of Significant High Value Ash Trees

- Define and identify high value ash trees
- Treat valuable ash trees
- Explore new treatment options and cost saving opportunities on an ongoing basis

Maintain the City's Tree Canopy

- Replant using non-host tree species at locations where ash trees were removed
- Plant two (2) trees for each ash tree removed
- Replant within one (1) year of removal
- Explore sources of funding for removal of trees on private property

Provide Public Education and Awareness

- Communicate with the public through a variety of media outlets, including newspaper, social media, and City blogs and websites
- Provide informational resources on EAB treatments, ash removal, and replanting (including cost-share planting program)
- Engage private land owners on EAB to prevent dying ash trees from becoming hazards to people and property
- Create County Firewood Bank



Introduction

Portland, Maine has earned its spot on numerous top ten lists in recent memory: most livable, happiest city, most learned, prettiest - the lists go on. A revitalized arts district, influx of James Beard Award winning chefs, and the increasing trend in telecommuting has helped to create a population boom in Maine's largest city. The International Jetport, Ocean Gateway and Thompsons' Point bring visitors and businesspeople into the city from all over the world, while multi-lane highways shuttle commuters, students and cargo through rural stretches and over tidal flats, bypassing neighborhoods of historic homes, industrial facilities and sprawling commercial strips.

Invasive pests utilize some of the very same modes of transportation to enter our state, and in the case of the emerald ash borer (EAB), its favorite ride is nestled just under the bark of firewood. While federal and state restrictions on the movement of firewood have been in place for decades, the ban on out-of-state firewood was initiated for Maine in 2010. Ultimately, not every carload of firewood can be intercepted. Statewide officials are left to manage this concern primarily through education to influence behavior change.

EAB was first found in Maine in 2018, and first found in Portland in the fall of 2019.

Project Canopy partnered with the City of Portland in 2020 in a three-year USDA Forest Health and Resilience grant to establish baseline protocols for ash treatment and removal, and subsequent planning and budgeting for treatment or removal of the city's 600+ ash street trees. This report is a key part of that grant.

Incorporating a forest pest management plan as a component of the larger urban forest management plan will establish a baseline and protocol to follow when invasive insects such as EAB and Asian longhorn beetle (ALB) threaten Portland's trees.

City Profile

The City of Portland, in Cumberland County, is located in Southern Maine, part of the Casco Bay Watershed. In 2020 the City's population reached nearly 69,000, making it the state's largest municipality. It is easily accessible from Interstate 95 and 295 and is less than a day's drive from Boston, New York, and parts of Canada. Portland hosts the University of Southern Maine as well as headquarters for Oakhurst Dairy, WEX and TD Bank, and its burgeoning arts, food, and tech scene, coupled with improvements to mass transit will ensure that its population will continue to rise.

Much of Portland lies along two high speed 2-4 lane interstates (95 and 295) and is a major thoroughfare for traffic headed north. Traffic can be very heavy and travel at speeds surpassing 80 mph. Land around these highways are controlled and maintained by Maine DOT and the Maine Turnpike Authority. US Rt 1, the Eastern Promenade and Baxter Blvd carry residents and tourists alike along the coast, while state routes 302, 22 and 25 allow commuters access to the downtown from the west. Small stands of mature eastern white pine and northern red oak dot the landscape along the outer reaches of the main roads, but much of the gateway streetscape is commercial or residential with limited tree canopy.

The "Forest City" boasts 721 acres of open space and public parks, which provide cooling respite from the surrounding hardscape as well as recreational opportunities. Thanks to a long lineage of City Arborists, much of Portland's historic downtown is host to shaded streets lined with mature oaks and maples, hardy ginkgos and crabapples, and fragrant honey locust and lindens. In 2012-2013, the city conducted a complete inventory of its 20,500 public trees which can be viewed at:

<http://portlandme.maps.arcgis.com/apps/webappviewer/index.html?id=8c1f329f45384c1080608df88501bcbe>



Figure 5. Portland City Arborist, Jeff Turling. Kim Ballard photo.

Portland has been recognized by the Arbor Day Foundation as a Tree City USA for over 40 years. The Tree City USA program is designed to recognize those communities that effectively manage their public resources, and to encourage the implementation of community tree management based on four standards. These four standards provide structure for a community forestry program, require that program to demonstrate success based on the judgment of the state forester's office, and provide for an awareness and appreciation of trees among the residents of the community.

Benefits of Urban Trees

Portland boasts a beautiful, bustling downtown, with great local shops and restaurants. Wide sunny sidewalks are a perfect spot to add substantial tree wells, planters and even rain gardens and stormwater catch basins.

A 2005 study determined shoppers in business districts with robust tree canopy will spend 9 to 12% more for products. They will travel greater distance to visit a district having high quality trees and spend more time there once they arriveⁱ.

Trees can calm traffic and reduce vehicle speeds by appearing to narrow the width of the roadway. In an area where streets were widened and trees were *not* present, accidents increased by almost 500% within an 8-year periodⁱⁱ. Tree lined streets and sidewalks encourage visitors and residents to walk and ride bikes, rather than drive personal vehicles due to the reduced urban heat island effect, ultimately reducing the need for increased parking.

The urban forest can help improve air quality by reducing air temperature, directly removing pollutants from the air, and reducing energy consumption in buildings, which consequently reduces air pollutant emissions from power sources. Numerous other studies repeatedly demonstrate the myriad benefits trees have on urban neighborhoods – from reduction in crime, to increased health, reduced energy costs and increase in property values.

Scope

This 5 year plan applies throughout the City of Portland on all public properties (including rights-of-way and sidewalk esplanades) where ash trees are currently growing, as well as on private properties where such trees may negatively impact public rights-of-way or other public properties if they fail. Additional funds may be utilized to assist homeowners in treatment or removal of infested private trees.

Administration

The City Arborist and Forestry Department, through the Parks and Recreation Department, will be responsible for implementing this plan and seeing that its provisions are carried out. The City Arborist will manage all contracted work.



Figure 6. Ash # 54 on Spruce Street. Kim Ballard photo.

State & Federal Quarantine

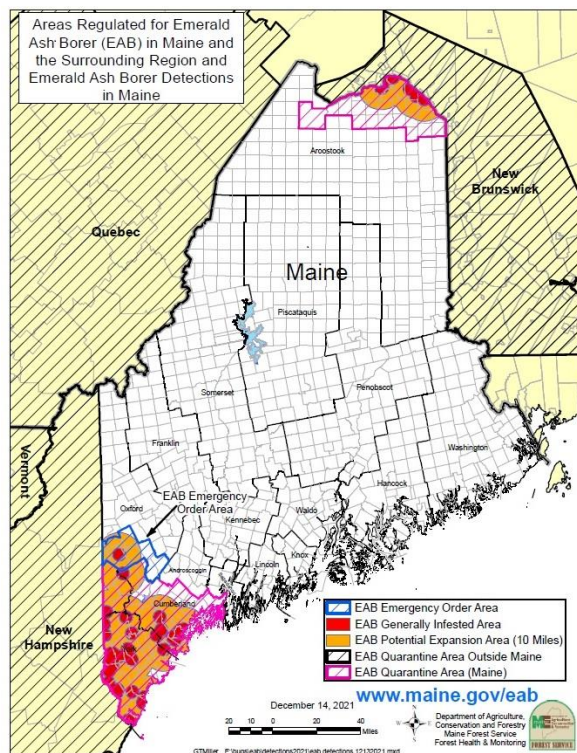


Figure 7. State quarantine for ash as of Dec 14, 2021.

In January 2021, the USDA removed the domestic quarantine regulations for the emerald ash borer. These Federal regulations, in place in one form or another since 2003, did not prevent the spread of EAB throughout its geographical range. Funding previously allocated to the implementation and enforcement of these domestic quarantine regulations will instead be directed to nonregulatory options to mitigate and control the pest.

While EAB still poses a significant threat to Maine's approximately 480 million ash trees, we are slowing its impact through continued state quarantines that limit the movement of ash out of infested areas and maintain prohibitions on importing ash into Maine. These quarantines currently include all of York County, all of

Cumberland County, parts of Oxford County, and the northern portions of Aroostook County. Materials covered in this quarantine include nursery stock, green lumber, and other material living, dead, cut, or fallen, including logs, stumps, roots, and branches of the genus *Fraxinus*, as well as firewood of all hardwood species.

Ash Resources

A comprehensive public tree inventory is an important piece of a vibrant community tree program, and provides a snapshot in time of the diversity, condition, and size of a city's urban forest. Portland directed two interns to conduct such an inventory in the summer of 2012. This data has served as the basis for the City Forestry Department's work plan and management strategy over the past near decade.

In the spring and summer of 2021, Project Canopy staff completed a random check/update of approximately 10% of the more than 600 ash trees identified in Portland's 2012 tree inventory. Data noted and updated for each tree potentially included street name/#, species, height, diameter at breast height (DBH), canopy size, condition, a recommendation for maintenance, wire and sidewalk conflicts, building interactions and any pest signs or symptoms. In general, the ash population of Portland is healthy and growing. Of the 87 trees sampled in 2021, 27 grew 3" or more in DBH than when first measured. 32 were found to be declining, and four (4) had been removed altogether. 13 ash trees had one or more symptoms consistent with

EAB infestation, but at the time of this report had not yet been confirmed by an entomologist.

Full Canopy Assessment

Project Canopy partnered with the City and Oakhurst Dairy in the Spring of 2018 to conduct an Urban Tree Canopy (UTC) assessment of the City.

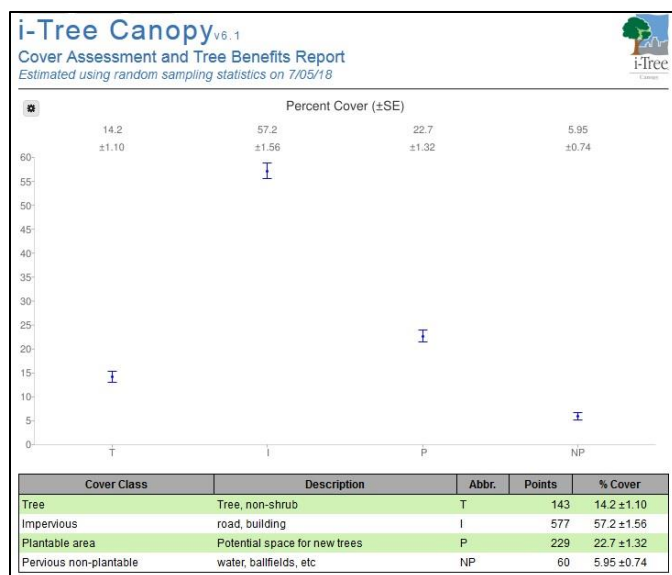


Figure 8. Canopy Cover % for the Portland Peninsula.

Public trees provide a number of benefits to a community, including reducing stormwater runoff, reducing air pollution, reducing energy costs, and sequestering carbon dioxide (CO₂). Many tree benefits equate directly to the amount of healthy leaf surface in the canopy - the larger the tree canopy, the higher the benefit value provided by the tree. The City's canopy cover of 23% provides an estimated **\$874,390 annually in air quality benefits alone as well as an estimated long-term stored CO₂ value of \$15,610,923ⁱⁱⁱ** to the residents and businesses of Portland. **As canopy increases, these benefits and savings will only increase.** It is also noteworthy that larger (mature) and long-lived trees provide substantially more benefits than small and young trees. As mature ash trees are removed, one-for-one replacements with smaller trees will not restore the UTC or benefits lost. **Regular maintenance and care are needed to provide for public tree health, longevity, and maximized urban forest benefits.**

This canopy assessment determined that approximately 23% of the land area is currently occupied by tree canopy. With 50% of the total area occupied by buildings and other non-plantable areas (parking lots, roads and bodies of water - however, some of this could be converted to tree canopy – such as tree islands and buffer strips in parking lots as well as green roofs.), **Portland's canopy cover could potentially increase by more than 27% on open lands of low-lying vegetation and re-engineering of some parking lots.**

Tree Benefit Estimates					
Abbr.	Benefit Description	Value (USD)	±SE	Amount	±SE
CO	Carbon Monoxide removed annually	\$145.20	±11.25	218.54 lb	±16.93
NO2	Nitrogen Dioxide removed annually	\$259.53	±20.11	1.00 T	±0.08
O3	Ozone removed annually	\$12,455.99	±964.99	6.14 T	±0.48
PM2.5	Particulate Matter less than 2.5 microns removed annually	\$32,681.79	±2,531.93	725.70 lb	±56.22
SO2	Sulfur Dioxide removed annually	\$34.39	±2.66	687.62 lb	±53.27
PM10*	Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	\$13,086.95	±1,013.87	2.10 T	±0.16
CO2seq	Carbon Dioxide sequestered annually in trees	\$31,215.85	±2,418.36	885.42 T	±68.60
CO2stor	Carbon Dioxide stored in trees (Note: this benefit is not an annual rate)	\$1,086,198.56	±84,150.09	30,809.44 T	±2,386.87

i-Tree Canopy Annual Tree Benefit Estimates based on these values in lbs/acre/yr and \$/Tyr: CO 0.892 @ \$1,333.50 | NO2 8.175 @ \$259.57 | O3 50.093 @ \$2,036.17 | PM2.5 2.961 @ \$90,389.14 | SO2 2.805 @ \$100.37 | PM10* 17.096 @ \$6,268.44 | CO2seq 7,224.756 @ \$35.38 | CO2stor is a total biomass amount of 251,395.359 @ \$35.38

Note: Currency is in USD

Note: Standard errors of removal amounts and benefits were calculated based on standard errors of sampled and classified points.

About i-Tree Canopy

The concept and prototype of this program were developed by David J. Nowak, Jeffrey T. Walton and Eric J. Greenfield (USDA Forest Service). The current version of this program was developed and adapted to i-Tree by David Ellingsworth, Mike Binkley, and Scott Maco (The Davey Tree Expert Company).

Limitations of i-Tree Canopy

The accuracy of the analysis depends upon the ability of the user to correctly classify each point into its correct class. As the number of points increase, the precision of the estimate will increase as the standard error of the estimate will decrease. If too few points are classified, the standard error will be too high to have any real certainty of the estimate.

A Cooperative Initiative Between:

Figure 9. Benefits provided by Portland's Peninsula Tree Canopy.



Figure 10. Ash tree on Western Promenade in Autumn. Kim Ballard photo.

Portland most recently updated its Comprehensive Plan in 2017. Included in that plan is a goal to “increase the urban tree canopy by 15% above current canopy coverage to benefit air quality, local climate, CO₂ absorption, and aesthetics”. As the ash population continues to decline over the next decade, **Portland will need to ensure adequate funding not only to increase and diversify canopy coverage, but to simply maintain a level of canopy as it loses large, mature trees and replants with much smaller, younger trees.**

Management Plan Elements

The City of Portland needs an aggressive yet effective, responsible, and financially viable approach to managing the spread of EAB. This plan incorporates the following Goals:

- Ensure Public Safety and Minimize Liability
- Mitigate the Loss of Significant High Value Ash Trees
- Maintain the City’s Tree Canopy
- Provide Public Education and Awareness

This plan is structured to preserve and ultimately increase the City’s urban tree canopy, slow down the spread of EAB where possible and allow for the preservation of high value trees in order to allow more time for improved and/or other control measures to be introduced in the future.

The Actions outlined within this plan are:

- Inventory, Monitoring and Assessment
- Treatment of Significant High Value Trees
- Tree and Stump Removal
- Tree Replacement (with a different species of tree)
- Wood Waste Disposal
- Public Education and Communication

To date, communities in North America have not successfully eradicated EAB once detected. Symptoms of EAB are slow to appear, making initial infestations hard to detect and once EAB is found, it is usually estimated that it has been present for 3-5 years. As the pest population builds, EAB eventually infests and kills all varieties of true ash (*Fraxinus* spp) trees in the area. Once ash trees are infested with EAB, they typically decline and die over a period of 2-3 years, at which point they become hazards to property, infrastructure, and to the public.

If not properly planned for, the burden of dealing with this number of trees in such a short period of time can leave a city without the proper finances or manpower to remove them, leaving the streets lined with hundreds of **potentially dangerous trees**. Cutting down already dead trees is more expensive due to the unpredictable nature of dead wood, the added strain on equipment, and added clean-up costs due to splintering.

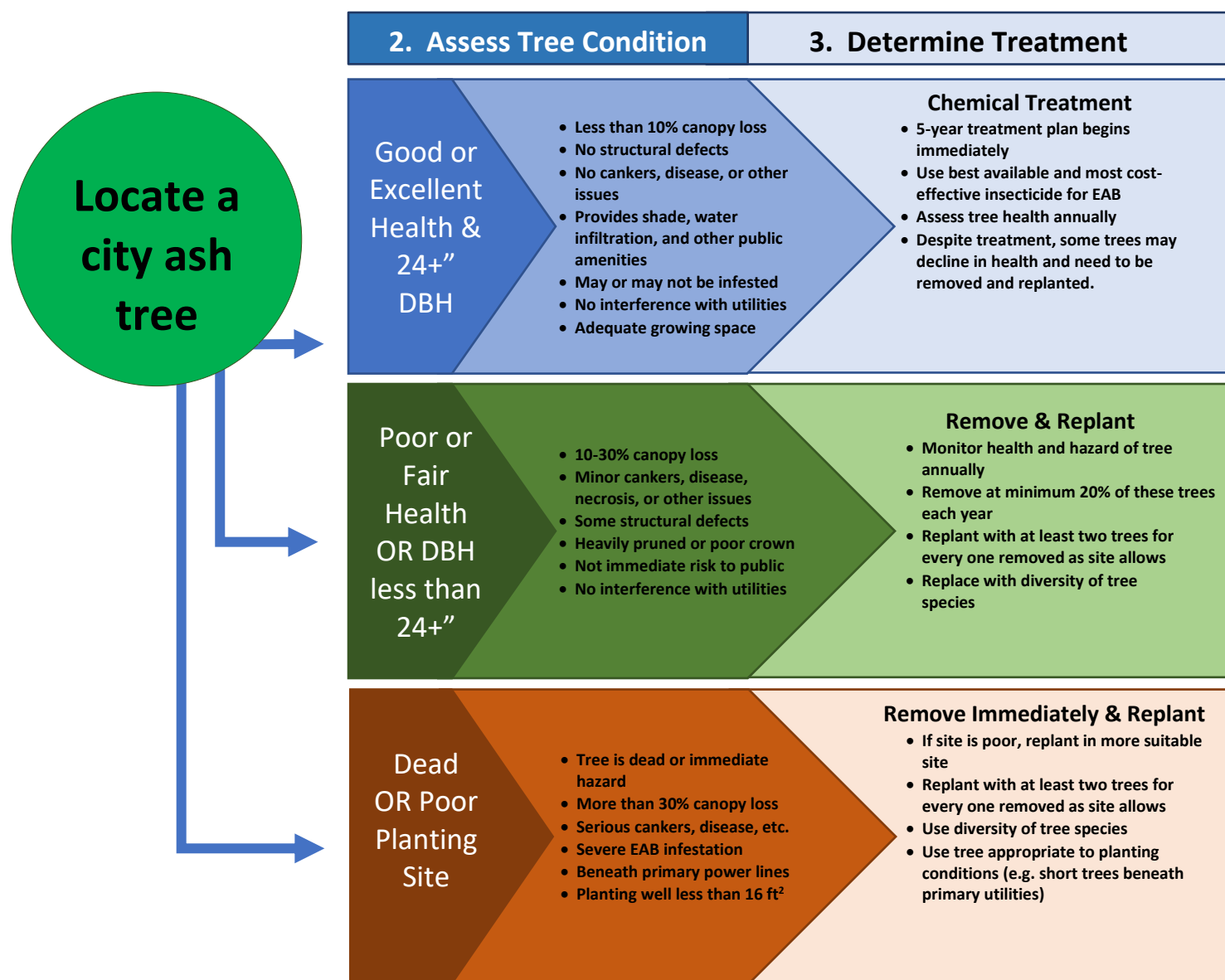


Figure 11. Selective Management Process for individual ash trees.

Inventory, Monitoring and Assessment

The City completed a thorough inventory of its public trees in 2012. Now that it is nearly a decade later, **all ash trees must be re-evaluated by a licensed arborist^{iv} as soon as possible** to determine condition, size, and potential level of EAB infestation. Re-evaluation should begin in neighborhoods with current infestations and then expand radially outward, concentrating on streets and parks with the highest density of ash.

Ash trees in Good or Excellent health with a DBH over 24 inches are candidates for chemical treatment, and those deemed to be Fair, Poor or Dead need to be removed and replanted. Small ash trees less than ten (10) inches DBH cannot be treated with bark injections. Poor growing conditions should be taken into consideration as well.



Figure 12. Inspection of ash in a wooded stand. MFS photo.

If a tree exists in a natural space and it is not dangerous to property or passersby, then it should be left in place; dead trees provide habitat and improve soil, and they are an important part of ecosystems. **There is evidence that some white ash show inherent resistance to EAB, these trees need to exist as seed stock for future populations.**

An estimated budget and timeframe should be generated for the desired treatment and removal regime, based on the new inventory data.

Monitoring of non-infested areas must not be forgotten in the rush to remove hazard trees. **Regular and systematic inspections/surveys radiating from infested areas must be conducted in order to respond swiftly to expanding pest populations.** Determine sources of pest introduction such as campgrounds, nurseries, firewood dealers, and sawmills to include in inspection areas. Strategically located non-asset ash trees should be selected and prepared as girdled trap trees on an annual basis. All ash wood from pruning or removals must be inspected for EAB by looking for D-shaped exit holes and removing the bark to find larval galleries. Any new infestations discovered will then be noted on the inventory, and surrounding areas will then rise in priority for inspections.



Figure 13. TREE-age™ is injected into an ash in Concord, NH. Kim Ballard photo.

Treatment of Significant High Value Trees

High-value ash trees in the city will be treated with emamectin benzoate (TREE-age™). This pesticide has been shown to provide 99% protection against EAB larvae for 2-3 years with a single application. Only trees in excellent and good conditions should be considered for this treatment since they are better positioned to survive the pest onslaught. Large diameter trees are favored over small diameter trees as they typically have higher value and provide greater benefits to the community. Other factors such as cost, location, logistics, and local support should be considered during the process. Be sure to

follow all local ordinances and allow only licensed pesticide applicators to administer treatments.^v On-going treatment will be necessary to protect trees for multiple years.

Biological control – release of parasitic wasps that prey on EAB – is an important component of EAB management, but must be used in conjunction with treatment and removal. It is not robust enough to control the pest on its own in urban settings or prior to high levels of EAB infestation.

Tree and Stump Removal

Based on the degree of infestation and health, ash trees will need to be removed to limit hazardous conditions and minimize the safety risk associated with dead and declining trees. Ash wood infected by EAB decomposes rapidly requiring removals to be carried out within a short period of time after tree death. The removal of decaying and/or dead ash trees in public spaces needs to be done on a risk management basis. Priorities are given to trees in areas where heavy EAB infestations are located, trees posing high risk and trees with small diameters. Trees in areas that do not pose a danger should be left to fall naturally in place and decompose, providing habitat and conserving the ash component of the forests for as long as possible. In fact, it is recommended to release the canopy around female ash located in woodlots to allow young ash to mature and out-compete surrounding shade-loving species such as maple and beech.^{vi}



Figure 14. Biocontrol - parasitic wasps that prey exclusively on EAB. From top to bottom: *Spathius agrili*, *S. galinae*, and *Oobius agrili*. USDA photo.

Tree Replacement

As the budget permits, all removed public ash trees will be replaced on a 2:1 ratio, with non-host species that will enhance the planting site, are appropriate for the planting site, and add to the diversity and general health of the urban forest. Trees will be planted in accordance with ANSI A300 Tree Care Operations: planting, be in the 1 to 2 ½” caliper range and obtained from Maine licensed producers and dealers of nursery stock. Plantings will be prioritized by canopy cover goals. Those areas needing the most trees to reach their goal will be planted first, such as urban residential, central business districts and suburban residential. No plantings will be made that cannot be adequately maintained. All new plantings will conform to the “10-20-30” tree species diversity rule at minimum.^{vii}



Figure 15. Tree planting event at Portland Arts and Technology High School

Wood Waste Disposal

The City must develop a plan to use the wood generated during the removal process. The plan must comply with the Maine Department of Agriculture, Conservation, and Forestry’s (DACF) regulations for handling regulated materials. Wood that cannot be used for lumber, turning, firewood, chips, or mulch will be disposed of according to DACF specifications. Currently, Portland takes all wood waste to Riverside Recycling for chipping, but it is currently unknown if this facility will be able to handle the increase in material.

The City must also plan for the disposal of ash wood from private properties. Consider establishing neighborhood drop-off locations for stumps and branches. These must be regularly monitored and maintained. Be sure to provide public outreach to help property owners understand how to identify and deal with ash tree die-off. Coordinate with County Government and neighboring towns to establish Community Firewood banks where residents can procure firewood at no cost^{viii}.



Figure 16. Some of the many uses for urban wood. MFS photo.

For trees that are felled, but still in good condition, there is new hope for a second life as furniture, art, flooring, and numerous other wood products. The Urban Wood Network^{ix} is a non-profit partnership that provides numerous resources for producers, makers and buyers.



Public Education and Communication

Keep your community informed as much as possible. Increasing communications and transparency regarding management of EAB and the city's urban forests will ensure that the community will help steward and care for this shared resource in the future. Below are a few ways to keep residents informed and engaged in the process of managing EAB and other invasive pests.

Figure 17. Jeff Tarling talks with community members about urban trees. Kim Ballard photo.

- Post information about the plan, including tree removals, treatment and plantings, to the city website.
- Place flyers about EAB, the pest management process, and upcoming meetings in public places.
- Personally contact abutters to properties where trees will be removed. Even door hangers can make a huge difference in attitudes.
- Write articles in the local newspaper and neighborhood newsletters.
- Post information to social media pages.
- Flag ash trees identified for removal or preservation with explanatory signage.
- Post signage on forest trailheads about EAB and proposed plans.
- Invite your District Forester to conduct ash and forest management walks in city forests or as a webinar.

A community that participates in planning, planting, and caring for their urban forest will respect and steward that forest much more than if it happens without their involvement.

Figure 18. Jeff Tarling and Maine Audubon's Sally Stockwell lead a Forest for Maine Birds talk in Evergreen Cemetery



Urban Forest Diversity

An important best management practice in urban forestry is to maintain a diverse range of species. It is recommended that communities work towards a goal of no more than 20% representation of a single genus (for example, *Acer*) in a tree population and no more than 10% of one species (for example, *Acer saccharum*). Resistance to disease and insect infestation is one of the many reasons that diversity of public trees is of particular concern. **A more diverse urban forest is more resistant to environmental stressors, and can therefore remain healthy and resilient in the face of change.** Furthermore, maintaining greater diversity can prevent a rapid loss of tree canopy due to insect and disease issues as well as natural end-of-life.

Ash trees (*Fraxinus*) comprise 3% of Portland's public trees. However, streets such as Danforth, Vaughan and Spring St are lined heavily with ash – the demise of all these trees at once would be devastating for those neighborhoods and the town as a whole. Maple trees count for a much higher percentage – likely close to 50%. Both ash and maple trees are currently threatened by invasive tree pests; EAB and ALB, respectively. While ALB has not been discovered to-date in Maine, a large ALB infestation is just to our south in Worcester, MA. Browntail moth and winter moth prefer to feed on oak foliage as well as that of fruit trees and have ravaged the area's trees over the last few years. While the wet cold spring of 2019 knocked the larval population down substantially, the hot dry spring in 2021 saw browntail moth numbers rebounding.

As a general rule of thumb, street tree populations should consist of no more than 10% of any one species, 20% of any one genus, or 30% of any one family of trees. New tree plantings should continue to support the goal of diversification of the community tree population.

New plantings within Portland's city limits need to represent a diversity of species, and ones that will be able to withstand the harsher conditions expected with climate change: increased temperatures, flooding and more extreme winters. Species to consider are Kentucky coffeetree, shagbark hickory, tuliptree, black gum and London planetree.



Figure 19. Riverton Trolley Park. Kim Ballard photo.

Recommendations

Based on my observations in 2021, taking into account both conditions on the ground and extrapolated inventory data, it is my recommendation that 7% (50) of Portland's inventoried ash trees should be treated, and a minimum of 20% (110) should be removed within the 1st year. Removing 110 trees annually will of course eliminate the most hazardous trees first, but will also spread anticipated costs/labor across the next 5 years. At the end of 5 years, if this plan is followed, all inventoried ash that are not treated will have been removed. These figures are of course dependent on budget allotments, and continued inspections of the city's ash trees.

Conclusion

Trees in our downtowns and commercial landscapes contribute to a thriving economy, promote our sense of community, protect our natural resources, preserve our cultural heritage, and increase our overall well-being. Well-planned and planted trees calm traffic, boost retail sales, reduce stormwater fees, provide cooling shade for parking lots and buildings, and can create a visual gateway welcoming visitors to the destination of Portland. Larger shade trees can also provide heating and cooling savings to homes and businesses.

When a city's urban forest is threatened, such as Portland's is by the emerald ash borer, it must do all it can to mitigate the damage, both to its trees and its community. The burden of dealing with hundreds of dead and dying trees in a short period of time can place an enormous strain on a municipality's budget, personnel, and resources. Having a plan in place can allow for measured and predictable costs, reduced liability, and anticipated staffing levels. The ability to act swiftly and nimbly in an informed and responsible manner can truly make the difference in a community's bottom line – and its treeline. While we will not exterminate the pest, we can lessen its impact and keep Portland's canopy thriving and vibrant for years to come.

This report is one component of an effort by the City of Portland to understand, manage, and steward its public tree population. The recommendations outlined in this report are based on Project Canopy staff's observations and data analysis combined with their experience and evaluation; they should be considered by Portland's leadership based on long-term vision and capacity.



Figure 20. The state champion green ash in Deering Oaks Park

Best Management Practices for Handling Ash Wood

To Reduce the Risk of Spread of Emerald Ash Borer in Maine

WITHIN Regulated Areas



Notice EAB tracks hidden under undamaged bark

You cannot always tell if a piece ash is infested with emerald ash borer (EAB) by looking at it.

Treat all ash as if it is infested.

Most ash trees within regulated areas are not yet infested. Following best management practices (BMPs) will slow the spread of EAB infestations and help protect Maine's ash woodlots, street trees, and forests.

EAB regulations prohibit all hardwood firewood and ash wood products from leaving EAB-regulated areas without a compliance agreement. These products can be moved freely within EAB-regulated areas.

However, follow the BMPs below to reduce the rate of EAB spread to uninfested areas.

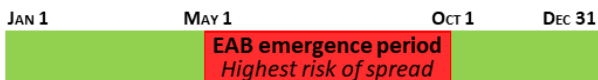
- **GRIND, CHIP, BURN OR COMPOST ASH TREE WASTE MATERIALS;**

OR

- **DELIVER ASH TREE MATERIAL WITHIN 5 MILES OF ITS ORIGIN;**

OR

- **TRANSPORT ASH WOOD AFTER OCTOBER 1. TO BE USED AT ITS DESTINATION BEFORE MAY 1 OF THE FOLLOWING SPRING;**



OR

- **CUT AND SEASON ASH WHERE IT IS CUT FOR 12 MONTHS OR AT LEAST OVER THE SUMMER BEFORE DISTRIBUTION;**

AND IN ALL CASES NOTIFY RECIPIENTS

- **THERE IS A RISK OF EAB INFESTATION FROM THE WOOD;**
- **IT CANNOT BE MOVED FROM THE REGULATED AREA WITHOUT AN AGREEMENT AND**
- **IT SHOULD BE PROCESSED AS SOON AS POSSIBLE.**

More information: maine.gov/eab
foresthealth@maine.gov

207.287.2431



SAVING YOUR HIGH-VALUE ASH

A simple guide for homeowners and municipalities with true ash (*Fraxinus*) trees

Piera Siegert, NH State Entomologist, adapted for Maine.



Emerald ash borer adult
Photo credit: N.W. Siegert

The problem: Emerald ash borer is an introduced and destructive pest of all North American true ash (*Fraxinus*) such as white, green, and black/brown ash. Trees infested with emerald ash borer will die from the infestation within 3-5 years. Management strategies to slow the spread of ash mortality can reduce *overall* emerald ash borer populations, but they may not save the ash tree in front of **your** house or in **your** park. Potential costs associated with emerald ash borer for municipalities and homeowners include:

- Costs to remove/replace/treat infested trees
- Loss of landscaping and community character
- Increased heating/cooling costs
- Reduction in property value
- Potential property damage/personal injury suits



Ash-lined neighborhood in Lebanon, NH.
Photo credit: P.Y. Siegert



Emerald ash borer killed tree in Concord, NH.
Photo credit: P.Y. Siegert

Although you cannot control the arrival of emerald ash borer on your property, you can decide what impact emerald ash borer will have by developing an emerald ash borer plan. This should be done regardless of proximity to known emerald ash borer populations. The first step is to stay informed about known emerald ash borer populations in the state (www.maine.gov/eab). Next, determine if you have ash trees, what size they are, where they are located, and if they add value to your property or community. Determine if your trees are on personal or public property. If public, contact your local municipal office to see if an EAB management plan is in effect. For private trees, use local foresters and arborists, on-line calculators (www.extension.entm.purdue.edu/treecomputer/ and other sites) or smart phone apps (ARBOR-mobile for iphone and ipad and others) to estimate the costs associated with tree removal, replacement or treatment. Once you have determined your investment in ash and considered your budget, you can develop a plan for which trees will be removed, replaced or treated with insecticides when emerald ash borer arrives. Having a plan empowers you to make informed decisions about your property or community. **Don't let the beetle decide what to do with your trees!**

Don't let the beetle decide what to do with your trees!

More information about using insecticides for emerald ash borer on the reverse

WARNING: Insecticides can have health or environmental impacts. If you use insecticides always follow all label instructions or hire a licensed pesticide applicator. **Pollinator impact note:** Some studies have linked systemic insecticides to declines in honeybee populations. The body of evidence is inconclusive, but potential impacts to pollinators should be considered when initiating an insecticide regime. For information on insecticides used for EAB see www.emeraldashborer.info/files/Potential_Side_Effects_of_EAB_Insecticides_FAQ.pdf.

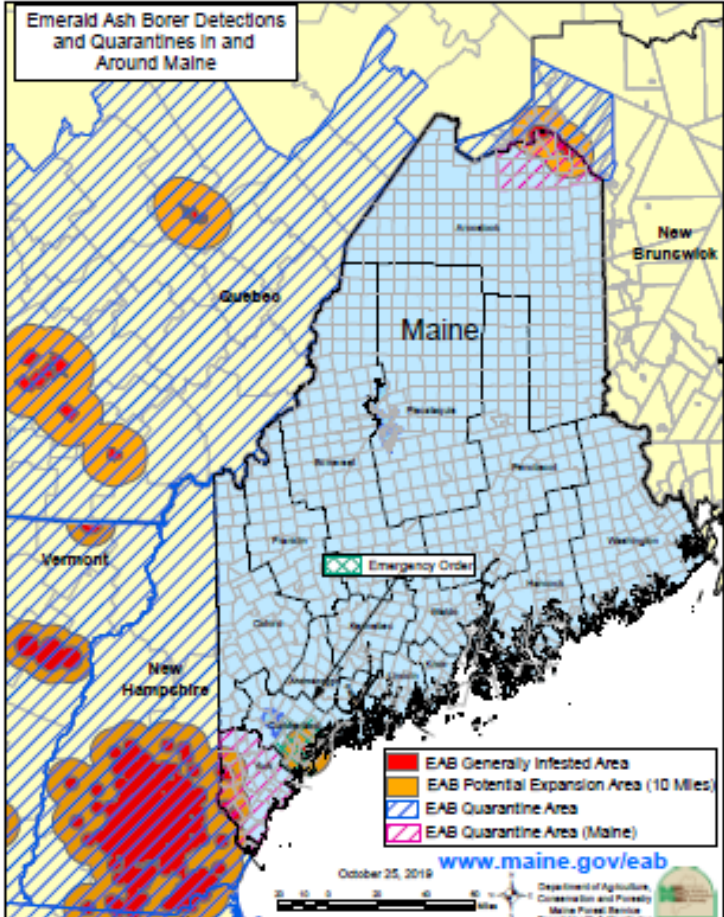
Pesticides can be a useful tool for protecting valued ash trees. There are important considerations to keep in mind, however, when selecting an insecticide regime:

- Proximity to generally infested area—insecticide treatment is only recommended in the red and orange areas (see map left or visit www.maine.gov/eab for the most current information)
- Size of tree—measure the diameter (in inches) at 4.5 feet above the ground with a caliper or tape measure to get Diameter at Breast Height (DBH)
- Health of tree—systemic insecticides are less effective in trees that are already in decline
- Proximity to socially or environmentally sensitive habitats (like school properties, wells, or wetland areas)
- Mode of application of insecticide
- Effectiveness of treatment
- Cost of treatment
- Frequency of treatment

Not all emerald ash borer-approved insecticides are equally effective, nor are they all appropriate in every circumstance. Choosing an ineffective treatment for your conditions may result in product failure and is

not cost-effective. Less effective treatments may prolong the life of an ash tree early in the invasion process but as neighboring untreated ash trees start showing signs of decline, indicating increasing local emerald ash borer populations, a more effective pesticide treatment may be necessary. There are resources available to help you assess the management options and products that are right for you. The table below shows the recommended active ingredients available for use. Most formulations are only available for use by a licensed pesticide applicator. For detailed information about products registered for use in Maine, visit: http://npirspublic.ceris.purdue.edu/state/state_menu.aspx?state=ME.

More resources are also available through www.maine.gov/eab, [www.emeraldashborer.info/files/Multistate EAB Insecticide Fact Sheet.pdf](http://www.emeraldashborer.info/files/Multistate_EAB_Insecticide_Fact_Sheet.pdf) and www.emeraldashborer.info, as well as by contacting an experienced Maine licensed pesticide applicator.



See map above to determine your management zone.		Ash is less than 18” DBH	Ash is greater than 18” DBH
Generally infested	Ash appear healthy	Imidacloprid, dinotefuran, or emamectin benzoate	Emamectin benzoate
	Ash are in decline	Emamectin benzoate	
	Ash are dead or with greater than 50% crown dieback	Tree removal. Insecticides unlikely to be effective.	
Expansion management zone		Imidacloprid, dinotefuran, or emamectin benzoate	Emamectin benzoate
Alert management zone		Treatment not yet warranted. Develop a plan.	

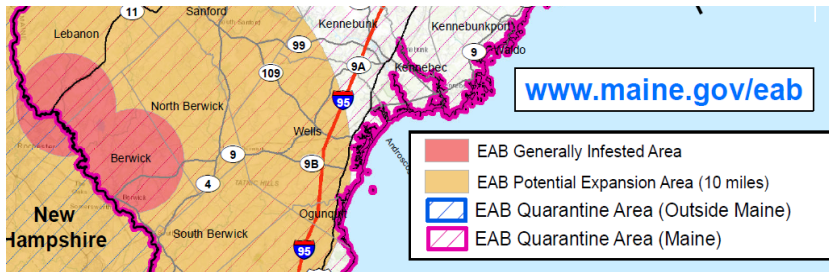
For assistance in developing a municipal emerald ash borer plan, and to find out how your management goals coincide with state management of emerald ash borer, please contact the Maine Forest Service.

Please help SLOW the SPREAD of Emerald Ash Borer: Guidance for Solid Waste Facilities in Maine

Human-assisted movement is the number one cause behind the spread of emerald ash borer (EAB) and frequently results in new infestations. Solid waste facilities that accept yard waste are at high risk of unknowingly accepting infested ash tree debris harboring EAB life stages. Follow these guidelines for handling infested or potentially infested ash material to slow the spread of EAB and help protect your municipality and surrounding forests. For information on what defines a quarantine or order area, please visit our Quarantine FAQ's at www.maine.gov/eab

Are you in the infested area?

Visit www.maine.gov/eab for a map of EAB-regulated areas (quarantine and emergency order) and generally infested areas and to sign up for map updates.



Example Infested Area (small, red shaded circles); and Quarantine Area (pink hatched). For a full map of the EAB regulated areas in Maine visit www.maine.gov/eab.

If Your Facility is INSIDE of the Infested Area

The easiest option is to keep all ash materials inside the EAB-regulated area. Ash material that remains within the regulated area does not require treatment.

Ash or mixed wood debris that may contain ash should be chipped or ground before moving it outside of any generally infested area within a regulated area. Chips must measure less than one inch in two dimensions and be able to pass through a 1.25" sieve to guarantee all life stages of EAB have been killed and the resulting material is safe for transport. If in doubt, Maine Forest Service officials can inspect chips to ensure the materials have been processed to this standard.

Materials larger than chips must undergo another certified treatment, such as heat treatment, to exit the regulated area. Since this is often impractical for solid waste facilities, chipping is often the best option. In some circumstances, coarse ground material can be shipped to facilities with a pre-existing compliance agreement outside of the regulated area during the non-flight season (October 1 through May 1) to be processed or disposed of properly.

If allowed, ash materials may be burned on site to destroy any EAB life stages. Please contact the Maine Department of Environmental Protection's Division of Solid Materials Management at 207-287-7688 to determine whether this is permitted at your facility and obtain a burn permit.

FIREWOOD THAT IS NOT HEAT-TREATED CAN SPREAD DAMAGING INSECTS AND DISEASES AND SHOULD NEVER BE MOVED OUTSIDE THE INFESTED AREA.

If Your Facility is OUTSIDE of the Regulated Area

EAB-regulated areas in Maine are subject to regular change. It is always best to know the relation of your facility to the currently regulated area. Ensure staff can identify ash materials and do not accept unchipped or unground ash material originating from within an infested area. Ask your customers where their wood waste originated, where it has been stored prior to disposal, and if they know whether their waste contains ash materials.

If they have ash material from the infested area, direct them to a facility in the infested area for disposal. Or, follow the treatment recommendations above to treat the material immediately and help slow the spread of EAB.

Contact Information

For questions involving proper handling of regulated ash materials at solid waste facilities, please contact Michael Parisio at the Maine Forest Service: michael.parisio@maine.gov or 207-287-7094





City of Portland

Recommended Tree List

Helpful Info:

“The right tree in the right place” is a common refrain when it comes to tree planting. It is important to match the desired characteristics of the tree to the site where the tree is intended to grow. Important factors to consider when choosing a tree include mature height and canopy spread, shading/screening characteristics, flower and fruit production, as well as soil, sun, and moisture requirements.

Planting Site Guidelines:

- Planting space must be at least 3.5 ft x 4 ft and allow for any existing sidewalk to meet ADA standards (3 ft width)
- Minimum 10 ft from intersections, utility poles, hydrants, driveways, and traffic signs or signals
- Minimum 4 ft from underground utilities
- Setback (lawn) plantings must be visible to the public. Co-op trees will not be planted in side or back yards.

Tree Size Guidelines:

Shade/ornamental trees: 1.5 in – 2 in caliper (trunk diameter)

Coniferous trees: 4 ft - 6 ft height

Helpful Links:

[International Society of Arboriculture \(ISA\) Tree Selections and Placement Guide](#)

[ISA Guide to Avoiding Tree & Utility Conflicts](#)

[Arbor Day Foundation “The Right Tree in the Right Place”](#)

[Cornell University Recommended Urban Trees](#)

[U.S. National Arboretum Tree Fact Sheets](#)

[USDA Plant Hardiness Zone Map](#)

Co-op Nursery Information:

[Skillins Greenhouses](#) – Falmouth – 207-781-3860

[O'Donal's Nursery](#) – Gorham – 207-839-4262

Trees included in this list prove hardy to the local climate, display favorable characteristics, and are generally available in the nursery trade. The list is grouped into categories based on size and appropriate planting site.

Notation Guide:

ST	Street Tree: Planted along the edge of a street and in esplanades between the sidewalk and street. These are often “shade trees” and are chosen based on desired characteristics such as branching height, shape, and hardiness to grow in urban conditions.
LT	Lawn Tree: Set back away from the esplanade or street. These trees can be multi-stemmed, lower branched, and don't need to be as tolerant of urban conditions. This includes shade, ornamental, conifer, and fruit/nut trees.
*	Especially recommended and generally readily available

Small Trees (15 ft – 25 ft): Those labeled “ST” can be planted under wires

Hedge Maple (*Acer campestre*) **ST / LT**

Grows slowly to a height of 25 ft according to reference materials, however, we have several trees that are approaching 15 ft tall after 10 years.

Three-flowered Maple* (*Acer triflorum*) **ST / LT**

A unique small specimen tree with exfoliating bark and trifoliate leaves that turn yellowish-red in fall. See example at Longfellow Arboretum in Payson Park. Expensive due to slow grow rate.

Shadbush* (*Amelanchier, tree form*) **ST / LT**

Native tree with white or pink flowers in the spring. Prefers moist areas with light shade. Better suited for setback lawn planting and not dry compacted spaces like esplanades. ‘Robin Hill’ is single-stem variety with pink flowers. Good alternative to Callery Pear.

Hawthorn* (*Crataegus*) **ST / LT**

Flowers in June and is noted for its red berries in the winter. Our favorite variety, ‘crus-galli’, has glossy foliage and no thorns. ‘Winter King’ is better for setback lawn planting.

Flowering Crabapple (*Malus*) **ST / LT**

Many varieties with different shape, flower, foliage, and fruit. Varieties with larger fruit are not recommended as street trees.

For lawn planting: ‘Adirondack’, ‘Spring Snow’ (fruitless), ‘Snowdrift’, ‘Donald Wyman’, and ‘Sargent’

For street/narrow planting: ‘Pink Spire’ and ‘Sentinel’

Cherry* (*Prunus*) **ST / LT**

‘Accolade’ & ‘Pink Flair’ varieties produce clouds of pink flowers in early spring and can be planted as street or lawn trees. Upright forms should be used for narrow areas. ‘Amur chokecherry’ has pink/white flowers and interesting bark, and is only suitable for setback lawn planting.

Tree Lilac (*Syringa reticulata*) **ST / LT**

Tree form lilac with white flowers. Requires ample, non-compacted growing space. (Note: this tree is starting to be overplanted and we have some concerns about invasive tendencies).

Paperbark Maple (*Acer griseum*) **LT Only**

A beautiful small specimen tree with exfoliating bark and good fall color. Hard to find, may want to use a smaller size. Grows best in sheltered areas. See example at Longfellow Arboretum in Payson Park.

Korean Maple (*Acer sieboldianum*) **LT Only**

Small ornamental maple with good fall color, trees are often multi-stem & low branched. See examples in Longfellow Square.

Dogwood (*Cornus kousa*) **LT Only**

Kousa and the new Rutgers Hybrids, *C. kousa* x *C. florida*, are recommended specimen trees for lawn areas, white or pink flowers.

White Fringetree (*Chionanthus virginicus*) **LT Only**

Beautiful small tree/shrub with white flowers in June. Available only in multi-stem shrub form.

Magnolias (*Magnolia*) **LT Only**

Check with your co-op nursery for availability. Single stem types are more rare than multi-stem plants.

American Hophornbeam* (*Ostrya virginiana*) **LT Only**

Native understory tree that tolerates shade. Interesting bark.

Sourwood* (*Oxydendrum arboretum*) **LT Only**

Excellent small specimen tree with late summer bloom. Scarce, available in small sizes.

Stewartia (*Stewartia pseudocamellia* and *koreana*) **LT Only**

Flowers in July and has beautiful exfoliating bark. Longfellow Arboretum in Payson Park has a beautiful specimen planted in 1976.

Medium Trees (25 ft – 45 ft):

River Birch* (*Betula nigra*) **LT Only**

Fast growing tree with creamy white to brownish bark. Less insect & disease problems than Paper Birch. See grove of River Birch at the Longfellow Arboretum. Available in single & multi-stem. Yellow Birch are also a great option though hard to find.

Hornbeam, American or European* (*Carpinus caroliniana* and *betulus*) **ST / LT**

A nice small to medium sized, compact tree. The bark and leaves are similar to beech trees. Upright forms are useful for screening or hedges. Best planted in non-compacted lawn & esplanade areas. Avoid planting in tree wells.

Katsura* (*Cercidiphyllum japonicum*) **LT Only**

This is a unique tree with heart shaped leaves that open as reddish purple, turn green, with yellow-orange Fall color. This interesting tree can be seen at the Longfellow Arboretum in Payson Park.

American Yellowwood (*Cladrastis kentukea*) **ST / LT**

Compound leaves and white flowers blossoming bi-yearly in June. Locations Deering Oaks Park, State Street at Park Avenue on the left. Street planting only with ample room.

Turkish Filbert (*Corylus colurna*) **ST / LT**

Hardy with interesting bark. Should grow to 30'. We have been planting Filbert's for over 10 years with good results.

Honey Locust (*Gleditsia triacanthos*) **ST / LT**

Tough street tree able to grow in difficult sites. Small compound leaves cast a filtered shade. Branching habit can allow for planting closer to utility lines than most medium or large trees. 'Skyline' and 'Halka' are recommended varieties.

Tupelo* (*Nyssa sylvatica*) **ST / LT**

Native, rare shade tree that can tolerate damp sites and is slow growing. Fall foliage is bright red. Maine's largest is near O'Donal's Nurseries. Ferry Beach State Park in Saco has a beautiful stand of Tupelo as well. Not suitable for tree wells.

Korean Mountainash (*Sorbus alnifolia*) **ST / LT**

This is a beautiful tree which has a different appearance than the common European Mountainash. The Korean Mountainash has beech-like foliage and bark, white flowers in June, and pinkish-red berries in fall and winter.

Large Trees (45+ ft): should not be planted close to utility lines

Red Maple (*Acer rubrum*) ST / LT

Native maple with red leaves in the fall. Tolerates wet sites. More salt tolerant than sugar maples, so they are preferred for tree well and esplanade planting. We really like the upright shape cultivars.

'Armstrong' - upright cultivar can be seen in the Old Port area

'Karpick'* - more open with an upright/oval form

'Bowhall'* - more open with an upright/oval form

'Redpointe' - oval to round shape

'Red Sunset' - oval to round shape

Sugar Maple (*Acer saccharum*) LT Only

Native maple with yellow-orange fall foliage. Upright cultivars are available for narrow spaces. Not salt tolerant so avoid planting in tree wells and esplanades. 'Green Mountain' and 'Majesty' are recommended varieties.

Catalpa / Indian Bean Tree (*Catalpa*) LT Only

White flowers bloom in June and seedpods develop in the Fall. Interesting Winter form.

Beech, American or European (*Fagus grandifolia* and *sylvatica*) LT Only

Many leaf shapes with color ranging from green to purple. Standard beeches are best planted in lawn areas or behind sidewalks because they need plenty of room to grow. Interesting cultivars include *s. riversii* with purple leaves, and *s. asplenifolia* with fern-like leaves.

Ginkgo* (*Ginkgo biloba*) ST / LT

Unique with fan-shaped leaves and an interesting history. Slow growing after transplanting, but grow well in difficult sites. Cultivars: 'Autumn Gold'* has broad, conical form with good fall color; 'Magyar' is an upright form. Plant non-fruiting.

Tulip Tree (*Liriodendron tulipifera*) ST / LT

Tulip shaped leaves with an interesting flower blooming at the top of the tree. Large, fast growing tree that needs room. Maine's largest tulip tree is on Munjoy Hill. Upright cultivar available.

Cucumber Magnolia (*Magnolia acuminata*) LT Only

An interesting, large shade tree that does not have the showy spring flowers of other Magnolias. See a beautiful specimen at Brackett & Walker St.

Oak (*Quercus*) ST / LT

There are many varieties of native oak including the Red Oak, Pin Oak, Chestnut Oak, White Oak, and Swamp White Oak*. The Swamp White Oak has beautiful glossy foliage, exfoliating bark and transplants well. Consider upright varieties for small, narrow spaces. Only plant as street trees with ample space.

Elm, American or Chinese (*Ulmus americana* and *parvifolia*) ST / LT

Dutch Elm Disease (DED) has greatly impacted the population. New DED-resistant varieties have shown promise; 'Patriot', 'Princeton', 'Pioneer', and 'Lacebark'. Limited availability. Different sizes and shapes. Fast growing.

Zelkova (*Zelkova*) ST / LT

Was promoted as an American Elm replacement. Vase-shaped but smaller than elms. Difficult branching angles can cause some problems later on if not pruned correctly. Many beautiful specimens exist in the West End near Danforth Street.

Conifers: planted as setback Lawn Trees only

Please note, many evergreens can quickly outgrow a small space. Review growth rates and mature sizes. Nurseries now offer many compact selections.

Pine (*Pinus*) LT Only

Swiss Stone Pine* (*P. cembra*), small, 15-20', slow growing, with soft blue green needles. See nice specimen at the Shoreway Arboretum in South Portland.

'Vanderwolf's Pyramid' Pine* (*P. flexilis*), upright with soft blue-green needles.

Spruce (*Picea*) LT Only

Serbian Spruce* (narrow upright form), pendulous branching.

White Spruce is a good native option.

Blue Spruce are not recommended due to insect and disease problems.

Fir (*Abies*) LT Only

Moderate growth rate and large mature size. Firs have soft needles. Concolor Fir has blueish needles. Balsam and Fraser Fir are used as Christmas trees.

Deciduous Conifers LT Only

Evergreens that lose needles in fall. Offer the shape and screening of an evergreen while allowing sunlight in winter months. Great for lawn areas, naturalized damp sites, or as specimens. Great fall color and texture.

Dawn Redwood* (*Metasequoia*)

Eastern Larch (*Larix laricina*)

Japanese Larch (*Larix kaempferi*)

Fruit & Nut Trees: planted as setback Lawn Trees only

Maximum size 2" caliper / 6 ft. height / #7 Pot

There are many fruit and nut trees available at our Co-op nurseries. *Malus* 'Liberty' and 'Freedom' are two apple varieties with good pest resistance.

Citations

ⁱ K.L. Wolf, Business District Streetscapes, Trees and Consumer Response. *Journal of Forestry*

ⁱⁱ Swift et al, Residential Street Typology and Injury Accident Frequency. 2006

ⁱⁱⁱ Figures 8 & 9 illustrate data only for the Portland Peninsula. Data totals for the entire city also include data from the NW region of Portland:

Benefit	Peninsula		NW		Total	
	value	amt (lb)	value	amt (lb)	value	amt (lb)
CO	\$145.20	218.54	\$1,941.75	2,920.00	\$2,086.95	3,138.54
NO2	\$259.53	2,000.00	\$3,470.69	26,800.00	\$3,730.22	28,800.00
O3	\$12,455.99	12,280.00	\$166,573.88	164,200.00	\$179,029.87	176,480.00
PM2.5	\$32,681.79	725.70	\$437,053.32	9,700.00	\$469,735.11	10,425.70
SO2	\$34.39	687.52	\$459.84	9,200.00	\$494.23	9,887.52
PM10	\$13,085.95	4,200.00	\$175,011.64	56,040.00	\$188,097.59	60,240.00
CO2Seq	\$31,215.85	1,770,840.00	\$417,449.29	23,681,460.00	\$31,215.85	25,452,300.00
CO2Store*	\$1,085,198.56	61,618,880.00	\$14,525,724.45	824,028,900.00	\$15,610,923.01	885,647,780.00
					\$874,389.82	25,741,271.76

^{iv} To find a licensed arborist, visit: <https://www.maine.gov/dacf/php/arborist/ArboristList.shtml>

^v To find a licensed pesticide applicator, visit: <https://www.maine.gov/dacf/php/pesticides/licensed-commercial-applicators.shtml>

^{vi} D'Amato, 2021

^{vii} F. Santamour, Trees For Urban Planting: Diversity, Uniformity, And Common Sense. 1999

^{viii} For more information on Community Wood Banks, visit:
https://digitalcommons.library.umaine.edu/sfr_studentpub/1/

^{ix} <https://urbanwoodnetwork.org/>

Sustainability Office

Troy Moon

Sustainability Director

April 8, 2022



Subject: Bird Safe Maine presentation
From: Troy Moon, Sustainability Director

Maine Audubon and the Portland Society for Architecture have collaborated in recent years to document increased bird mortality in Portland, particularly along the waterfront where we have seen construction of buildings with large walls of glass. They have presented a number of educational forums in which they discussed the reasons birds strike buildings and have brought in glass manufacturers to discuss window and glass products that can mitigate bird strikes. Nicholas Lund from Maine Audubon and Addy Smith-Reiman from Portland Society for Architecture will make a presentation to the Sustainability and Transportation to share their findings about the number of bird deaths related to building strikes and discuss potential solutions to this problem.

For additional background prior to the meeting, please refer to the following websites:

<https://maineaudubon.org/advocacy/birdsafe/>

<https://abcbirds.org/glass-collisions/>

This is an informational meeting. Following the presentation the Committee members may ask questions of the presenters and staff. They may request further action at a future meeting.