ENVIRONMENTAL COMMISSION AGENDA:

March 4, 2026

Municipal Building 15 South College Ave. Oxford, Ohio 45056 First Floor Conference Room

7:00 PM

Jason Bracken, Chair, Planning Commission Representative and City Council Member; Jim Vinch, Vice-Chair and City Council Representative; Peggy Branstrator; Michael Vanni; Ken Vincent; Becky Mathers; Barbara Smyth

Reena Murphy, Sustainability Coordinator

Approval of Agenda

Approval of Minutes

1. Approval of the February 4th 2026 Minutes

Old Business

New Business

1. Earth Day Proclamation
2. Arbor Day Proclamation
3. Changes to the Approved Street Tree List
4. Member Updates

    - City Council
    - OPTAB
    - Planning Commission
    - OCASC

5. Staff Updates

    - No meeting April 1st
    - Upcoming events:
        - OCAC Art Opening March 13th 6-9pm
        - Bee Fest April 18th 1-8pm
        - WWTP Ground Breaking April 22 (Earth Day)
        - Earthfest April 25th 11am-2pm

City of Oxford OHIO
HOME OF MIAMI UNIVERSITY

Adjournment

MINUTES
OXFORD ENVIRONMENTAL COMMISSION

Municipal Building 15 South College Ave. Oxford, Ohio 45056 First Floor Conference Room

WEDNESDAY, FEBRUARY 4, 2026 AT 7:00 PM

Approval of Agenda

Members present were: Jason Bracken, Chair, Planning Commission Representative and City Council Member; Jim Vinch, Vice-Chair and City Council Member; Peggy Branstrator; Michael Vanni; Ken Vincent; Becky Mathers; Barbara Smyth. A quorum was present
Staff present: Reena Murphy, Sustainability Coordinator
Members of the public present: Caitlin O'Brien, The Miami Student and Oxford Free Press

The meeting began at 7:05pm. Motion to approve the agenda: Ms. Branstrator
2nd: Mr. Vinch
Vote: Unanimous approval

Approval of Minutes

1. Minutes from the December 3rd 2025 Environmental Commission meeting

Motion: Ms. Branstrator
2nd: Mr. Vinch
Vote: Unanimous approval

2. Minutes from the January 16th Work Session with OCASC

Motion: Ms. Branstrator
2nd: Mr. Vincent
Vote: Unanimous approval

Old Business

New Business

1. Appointment of representatives to other boards:

- OPTAB
- OCASC

Ms. Smyth nominated Mr. Vincent to OPTAB. Seconded by Mr. Vanni. Mr. Vincent accepted. Vote: Unanimous approval.

Mr. Vincent nominated Ms. Branstator to OCASC. Seconded by Ms. Smyth. Ms. Branstator accepted. Vote: Unanimous approval

2. Electric Aggregation Program

Ms. Murphy provided a presentation regarding the city's aggregation program. The slides are attached.

Ms. O'Brein asked how students get on the program. Staff shared that there are sweep dates for all eligible Duke accounts. Students who live off campus have the same rights and options as permanent residents. Eligible account holders can call to enroll before the sweep date if they would like.

Ms. Branstrator shared that one of the benefits of SOPEC is the timing of the aggregation sweeps and "refreshes", allowing more students to be included in the program for more of the year.

The commission discussed renewable energy credits and asked if there is a different quality of renewable energy certificates (RECs). Mr. Bracken shared more information about REC standards. Staff shared that the aggregation program uses Green-e Energy Certified RECs. The supplier buys the RECs, the City of Oxford does not purchase RECs for the aggregation program.

3. Member Updates

- City Council
- Planning Commission
- OPTAB
- OCASC

Mr. Bracken shared that there will be a ribbon cutting for the WWTP solar array in April. Mr. Vinch shared that the one of the Council Retreat outcomes was to pause the mandatory recycling effort until 2027 or later. Mr. Bracken shared lots of kudos and thanks to staff following the retreat and felt heard during the project prioritization process.
Mr. Bracken shared that the Planning Commission subcommittee is still working on the UDO and considering environmental impacts.
Mr. Vinch shared that OPTAB is working on a bike and pedestrian safety plan.
No updates from OCASC, as their last meeting was the joint work session with EC.

4. Staff Update

- Deer Program
- Tree City USA
- Callery Pear Tree Replacements

Staff shared an update regarding the deer management program. Changes to the local bow-hunting program were effective and resulted in the highest harvest since the 2013-2014 season. 16 deer were harvested. Contracting with White Buffalo for professional population control was effective at culling 117 deer in 4 nights. 98 deer were sent to processing for donation, resulting in 4,558 lbs going to 4 different food pantries. The remaining 20 deer were picked up by residents and processed at their own expense. The City was limited to 117 deer due to processing costs and our ODNR permit.

Oxford was recertified by the Arbor Day Foundation as a Tree City USA.

In December 2025, the city replaced 20 callery pear trees in the Uptown Business District. The trees were replaced with non-invasive species. 19 more callery trees will be replaced at the end of 2026.

Adjournment

Motion to adjourn: Mr. Vincent
2nd: Ms. Smyth
Vote: Unanimous approval

The meeting adjourned at 8:30pm

Office of the Mayor

Proclamation

Whereas: On April 22, 1970, United States Senator Gaylord Nelson of Wisconsin and Denis Hayes organized the first nation-wide day devoted to environmental awareness and education that was celebrated by an estimated 20 million Americans; and

WHEREAS, this day of environmental awareness and education is celebrated world-wide in some 180 countries, with the participation of over 4,000 separate organizations; and

WHEREAS, individuals and institutions have a mutual responsibility to seek ecological, economical and ethical choices that enable the world, as well as our individual communities, to establish and maintain sustainable societies.

NOW, THEREFORE, I, Michael Smith, Mayor of the City of Oxford, Ohio, do hereby proclaim that on Wednesday, April 22, 2026, the City of Oxford will recognize and participate in the national and international celebration of:

"EARTH DAY"

I urge all citizens to celebrate Earth Day and to remind each person of their right and responsibility to the wise use of this global home, to heal, preserve and improve the Earth and the quality of life for this and future generations, and to approach every day as an Earth Day.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the Oxford to be affixed this ***XX day of March/April, 2026***.

(NOTE: appropriate date will be added above by the Clerk of Council)

_____

MICHAEL SMITH, MAYOR

Office of the Mayor

Proclamation

Whereas, in 1872, J. Sterling Morton proposed to the Nebraska Board of Agriculture that a special day be set aside for the planting of trees; and

WHEREAS, this holiday, called Arbor Day, was first observed with the planting of more than one million trees in Nebraska; and

WHEREAS, trees can produce oxygen, provide habitat for wildlife, reduce the erosion of our precious top-soil by wind and water, cut heating and cooling costs, moderate the temperatures, clean the air, and help to absorb rainwater and slow the velocity of storm water runoff; and

WHEREAS, trees are a resource providing us with wood for our homes, fuel for our fires, paper, and countless other wood products**,** and

WHEREAS, associated with the management of some 3,695 street, park, and public trees in the community, the City of Oxford has fulfilled the national Arbor Day Foundation's requirements for "Tree City USA" for thirty consecutive years.

NOW, THEREFORE, I, Michael Smith, Mayor of the City of Oxford, Ohio, Tree City USA, do hereby proclaim that on April 24, 2026, the last Friday in the month of April, the City of Oxford will recognize and participate in the national and international celebration of:

"ARBOR DAY"

I urge all citizens to celebrate Arbor Day and to support efforts to protect our trees and woodlands, and I urge all citizens to plant trees to gladden the heart and promote the well-being of this and future generations.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of Oxford to be affixed this ***XXth day of March/April, 2026.***

(NOTE: Clerk of Council will insert appropriate date above)

_____

MICHAEL SMITH, MAYOR

Sustainable Recommendations for the

City of Oxford's Tree List

Olive Abram, August Daugherty, Devante Harris, Kimmy Kasarcik, and Jules Swope

Sustainability in Practice (IES 474), Miami University

Meet The Team

Report Highlights

Overview

- City of Oxford’s Climate Action Plan
- Include trees that are both:
  - native to North America
  - tolerant of projected climate change
- Expand the urban tree canopy from 35% to 50%

Goals & Objectives

Our main goal is to recommend revisions for the approved tree list to lay the groundwork for the City of Oxford to improve the quality and quantity of the city's urban tree canopy.

Revised Tree List

Suitability Factors of Current Trees

Resources and Tools for Future Expansion of Tree Canopy

Climate Projections

Referencing projected climate data in our region along with traits that can withstand them is a core part of our selection process for tree planting.

- US Forest Service's Tree Atlas and Climate Change Atlas
- Botanical Gardens Conservation International's Climate Assessment Tool
- FirstStreet.org
- Butler County Tornado Database

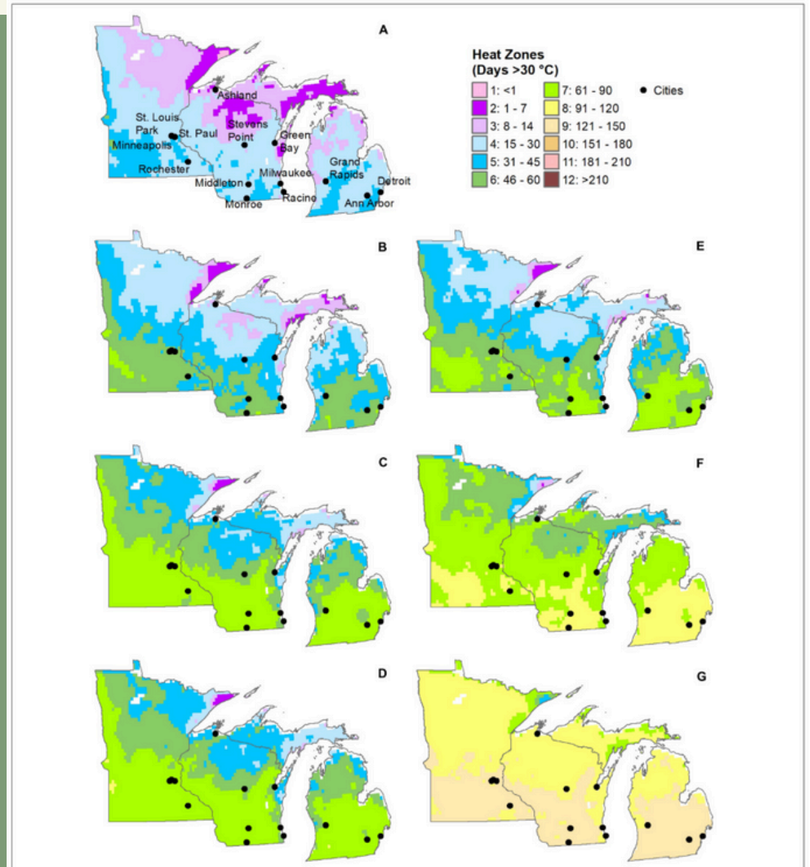

FIGURE 4 | AHS Heat Zones under **(A)** current climate (1980–2009) and future climates under a low emissions pathway (**B–D**, 2010–2039, 2040–2069, 2070–2099) or high emissions pathway (**E–G**, 2010–2039, 2040–2069, 2070–2099). Data from Matthews et al. (2018).

Multiple Variable Tree Species Selection Process

We compiled data on the trees included in the City of Oxford Tree List, as well as recommendations from previous projects. We then ranked and assessed the viability of each of the trees for the City of Oxford's mission.

1	Tree	Urban Survivability	Fruit	Deer Resistance	Climate Tolerance	Threats
4	American Smoketree	Urban, Residential, Rural	Urban, Residential, Rural	Good	Good	Disease
5	Cornelian Cherry Dogwood	Urban, Residential, Rural		Fair	Poor	Drought
6	Crabapple	Urban, Residential, Rural	Rural	Poor	Good	Disease
7	Fringetree (white)	Urban, Residential, Rural		Very P…	Very Poor	Insects
8	Harvest Gold Crabapple	Urban, Residential, Rural	Rural	Fair	Fair	Insects, Disease
9	Osage Orange	Rural	Rural	Good	Good	None
10	Pagoda Dogwood	Residential, Rural	Residential, Rural	Poor	Poor	Drought, Wind, Disease
11	Paperbark Maple	Urban, Residential, Rural	Urban, Residential, Rural	Poor	Good	Drought, Insects, Disease
12	Saucer Magnolia	Urban, Residential, Rural	Rural	Poor	Fair	Drought
13	Shadblow (Downy) Serviceberry	Rural	Urban, Residential, Rural	Poor	Fair	Insects, Disease
14	Star Magnolia	Residential, Rural	Residential, Rural	Poor	Good	Wind, Drought, Competition
15	Sugar Tyme Crabapple	Urban, Residential, Rural	Rural	Very P…	Fair	Disease

Assessment Categories

Accolade Elm

1. Urban Survivability
2. **Fruit Litter**
3. **Deer Resistance**
4. Climate Tolerance
5. Threats
6. Sun/Shade

Assessment Categories

7. Canopy
8. Height
9. Soil Type
10. Native Species
11. Growth Rate
12. **Cost**

Red Oak

Recommended Tree Removal

Norway Maple

Invasives

- Amur Maple
- Black Alder
- Goldenrain Tree
- Hedge Maple
- Japanese Maple
- Japanese Pagoda Tree
- Norway Maple
- Sawtooth Oak
- Tatarian Maple

Photo Northern Virginia Conservation Trust

Recommended Tree Removal

Poor Climate Tolerance

- All Seasons Sugarberry
- Allegheny Serviceberry
- American Beech
- American Hornbeam
- Amur Maackia
- Autumn Breeze Freeman Maple
- Black Tupelo
- Centurion Crabapple Tree
- Cornelian Cherry Dogwood
- Cucumbertree Magnolia
- Dawn Redwood
- Fringetree
- Japanese Tree Lilac
- London Plane Tree
- Pagoda Dogwood
- Sargent Cherry
- Sassafras
- Scarlet Oak
- Shingle Oak
- Tamarack
- Turkish Filbert
- Two-Winged Silverbell

Revisited Recommendations

Our midterm meeting led to some revisions to the initial list, which included retaining a few species

- Zelkova
- Littleleaf Linden
- Bigleaf Linden
- Silver Linden

Zelkova

Medium Tree Additions

The removal of invasive and non-climate-resilient trees has led to a very small number of medium-sized trees remaining. To match the volume of the initial list, we looked at recommendations from the City of Louisville and compared them with the variables previously established.

URBAN FORESTRY
Louisville Parks and Recreation

Master Tree List for Louisville, KY

Permitted Species:

Revised July 2022

KEY:
Size Type (height at maturity): A= 50ft+, B= 25+ -50ft C= 10 -25ft
*= size dependent on cultivar
Symbols:
✓= Yes
❍= simple leaf
❖= compund leaf
⅄= Needle or scale-like leaf
❁= trees must be high-branched
△= cone-like structure
◊= nut-like structure
●= fruit
✹= spiky fruit
▬= pod
❀= showy flower

Recommended Final List – Small

SMALL TREES

To be planted no closer than 30 feet apart, in tree lawns or public right-of-way that is at least 3 feet wide. The average 30-year mature tree height is less than 30 feet.

Common Name(s)	*Scientific Name (Family, Genus, Species)*
Paperbark Maple	Aceraceae Acer griseum
American Smoketree N	Anacardiaceae Cotinus obovatus
American Hop-Hornbeam C, N	Betulaceae Ostrya virginiana
Saucer Magnolia	Magnoliaceae Magnolia soulangeana
Star Magnolia	Magnoliaceae Magnolia stellate
Thornless Cockspur Hawthorn C, N, S	Rosaceae Crataegus crusgalli ‘Inermis’
Harvest Gold Crabapple (tree form) Malus is C, N, S	Rosaceae Malus ‘Hargozam’ Prairiefire
Crabapple (tree form) Malus is C, N, S	Rosaceae Malus ‘Prairiefire’
Sugar Tyme Crabapple (tree form) Malus is C, N, S	Rosaceae Malus ‘Sutyzam’
Shadblow Serviceberry	Rosaceae Amelanchier canadensis

Small tree examples

Shadblow Serviceberry

Hindsdale Nurseries

Saucer Magnolia

Garden Goods Direct

American Smoketree

Reflection riding.org

Recommended Final List – Medium

MEDIUM TREES

To be planted no closer than 40 feet apart, in tree lawns or public right-of-way that is at least 5 feet wide. The average 30-year mature tree height less than 45 feet.

Common Name(s)	*Scientific Name (Family, Genus, Species)*
Heritage River Birch C, N, S	Betulaceae Betula nigra
Katsura Tree	Cercidphylaceae Cercidiphyllum japonicum
Hardy Rubber Tree	Eucommiaceae Eucommia ulmoides
Yellowwood N (American or Kentucky Yellowwood)	Fabaceae Cladrastis kentuckea
Thornless Honeylocust C, N, S	Fabaceae Gleditsia triacanthos‘Inermis’
Crimean Linden (Caucasian Lime)	Tiliaceae Tilia x. euchlora
Zelkova (Japanese Elm)	Ulmaceae Zelkova serrata
American Hop Hornbeam	Betulaceae Ostrya virginiana
Blackjack Oak	Fagaceae Quercus marilandica
Carolina Silverbell	Styracaceae Halesia carolina

Recommended Final List – Medium

MEDIUM TREES

To be planted no closer than 40 feet apart, in tree lawns or public right-of-way that is at least 5 feet wide. The average 30-year mature tree height less than 45 feet.

Common Name(s)	*Scientific Name (Family, Genus, Species)*
Chalk Maple	Sapindaceae Acer leucoderme
Chinese Buckeye	Sapindaceae Aesculus chinensis
Chinese Pistache	Anacardiaceae Pistacia chinensis
Green Hawthorn	Rosaceae Crataegus viridis
Henry Maple	Sapindaceae Acer henryi
Nuttall Oak	Fagaceae Quercus texana
Ohio Buckeye	Sapindaceae Aesculus glabra
Osage Orange (‘White Shield’) (male only)	Moraceae Maclura pomifera ‘White Shield’
Persian Ironwood	Hamamelidaceae Parrotia persica
Sourwood	Ericaceae Oxydendrum arboreum
Yoshino Cherry	Rosaceae Prunus x yedoensis
Yulan Magnolia	Magnoliaceae Magnolia denudata

Medium Tree Examples

River Birch
turckstrees.com

Katsura
singtree.com

Osage Orange
gobotany.nativeplanttrust.org

Recommended Final List – Large

LARGE TREES

To be planted no closer than 50 feet apart, in tree lawns or public right-of-way that is at least 8 feet wide. The average 30-year mature tree height greater than 45 feet.

Common Name(s)	*Scientific Name (Family, Genus, Species)*
Red Maple C,N,S	Aceraceae Acer rubrum
Sugar Maple C, N, S	Aceraceae Acer saccharum
Sugarberry (Native to the U.S.)	Betulaceae Celtis laeviggata
Eastern Red Cedar C, N, S	Cupressaceae Juniperus virginiana
Bald Cypress C, N, S	Cupressaceae Taxodium distichum
Kentucky Coffeetree - male only N	Fabaceae Gymnocladus dioica
Attention Oak N	Fagaceae Quercus rubra ‘Attention’
White Oak C, N, S	Fagaceae Quercus alba
English Oak (Pedunculate Oak) C	Fagaceae Quercus robur
Red Oak C, N, S (Northern Red or Champion Oak)	Fagaceae Querecus rubra
Shumard Oak C, N	Fagaceae Quercus shumardii

Recommended Final List – Large

LARGE TREES

To be planted no closer than 50 feet apart, in tree lawns or public right-of-way that is at least 8 feet wide. The average 30-year mature tree height greater than 45 feet.

Common Name(s)	*Scientific Name (Family, Genus, Species)*
Burr Oak (Bur or Mossycup Oak) C, N	Fagaceae Quercus macrocarpa
Chinkapin Oak (Chinquapin Oak) C, N	Fagaceae Quercus muehlenbergii
Ginkgo (Maidenhair tree) - male only	Ginkgoaceae Ginkgo biloba
Sweetgum C, N, S	Hamelidaceae Liquidambar styraciflua
Tulip tree (Tulip Poplar) C, N, S	Magnoliaceae Liriodendron tulipifera
European Larch (Eastern, American, or Black Larch, or Hackmatack) Native to Canada, upper Midwest and NE states	Pinaceae Larix decidua
Prairie Pride Hackberry C, N	Ulmaceae Celtis occidentalis ‘Prairie Pride’
Princeton Elm U. americana is native	Ulmaceae Ulmus americana ‘Princeton’
Valley Forge Elm U. americana is native	Ulmaceae Ulmus americana ‘Valley Forge’

Recommended Final List – Large

LARGE TREES

To be planted no closer than 50 feet apart, in tree lawns or public right-of-way that is at least 8 feet wide. The average 30-year mature tree height greater than 45 feet.

Common Name(s)	*Scientific Name (Family, Genus, Species)*
Homestead Elm	Ulmaceae Ulmus ‘Homestead’
Pioneer Elm	Ulmaceae Ulmus ‘Pioneer’
Regal Elm	Ulmaceae Ulmus ‘Regal’
Accolade (trademarked) Elm	Ulmaceae Ulmus davidian var. japonica
Bitternut Hickory	**Juglandaceae Carya cordiformis**
Honeylocust	**Fabaceae Gleditsia triacanthos**

Large Tree Examples

Red Maple
plantingtree.com

Ginkgo Biloba
tnnursery.net

Pioneer Elm
University of Arkansas System





Data Access

We would like to make the data we compiled from our research available to you for future reference and examination.
Our raw data contains specific information about each tree, such as height in feet or which USDA Plant Hardiness Zones it thrives in.

We also have a codified form of this raw data that has been sorted into subcategories for ease of analysis.

The raw and refined data is provided with our deliverables in a variety of formats, including Excel, Google Sheets, and an ArcGIS attribute table.

	Tree *	Name	UrbSurv	Fruit	RecZone	Deer	ClimTol
1	1	Accolade Elm	Urban, Residential, Rural	Urban, Residential, Rural	Urban, Residential, Rural	Fair	Good
2	5	American Hop-Hornbea...	Urban, Residential, Rural	Residential, Rural	Residential, Rural	Fair	Fair
3	7	American Linden (Bass...	Residential, Rural	Urban, Residential, Rural	Residential, Rural	Poor	Good
4	8	American Smoketree	Urban, Residential, Rural	Urban, Residential, Rural	Urban, Residential, Rural	Good	Good
5	11	Bald Cypress	Urban, Residential, Rural	Rural	Rural	Good	Fair
6	67	Bigleaf Linden	Urban, Residential, Rural	Urban, Residential, Rural	Urban, Residential, Rural	Poor	Poor
7	68	Bitternut Hickory	Urban, Residential, Rural	Residential, Rural	Residential, Rural	Fair	Very Good
8	69	Blackjack Oak	Residential, Rural	Urban, Residential, Rural	Residential, Rural	Very Poor	Very Good
9	14	Burr Oak	Urban, Residential, Rural	Rural	Rural	Poor	Fair
10	70	Carolina Silverbell	Residential, Rural	Urban, Residential, Rural	Residential, Rural	Fair	Very Good
11	71	Chalk Maple	Urban, Residential, Rural	Urban, Residential, Rural	Urban, Residential, Rural	Poor	Fair
12	72	Chinese Buckeye	Urban, Residential, Rural	Rural	Rural	Fair	Very Good

Tools

Botanic Gardens Conservation International: Climate Assessment Tool
https://cat.bgci.org/

USDA and US Forest Service Tree Atlas - Climate Change Atlas
https://www.fs.usda.gov/nrs/atlas/tree/

Louisville Metro Government Master Tree List
https://louisvilleky.gov/urban-forestry/document/parks-urban-forestry-master-tree-list

Burr Oak

Sources

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Louisville Metro Government (2022). Urban Forestry: Master Tree List. https://louisvilleky.gov/urban-forestry/document/parks-urban-forestry-master-tree-list

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Sources

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The Morton Arboretum (n.d.). https://mortonarb.org/

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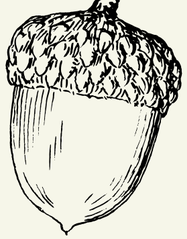
2023 USDA plant hardiness zone map. 2023 USDA Plant Hardiness Zone Map | USDA Plant Hardiness Zone Map. (n.d.). https://planthardiness.ars.usda.gov/

Special thanks to Reena Murphy and Dr. David Gorchov

Thank you to the Oxford Environmental Commission and David Treleaven for this opportunity



Questions?

Contributions

Olive: 1, 2, 3, 4, 5, 6, 7, 14, 15, 16, 17, 18, 19, 20, 22, 25, 26, 28

August: 1, 2, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23

Devante:4,6,10,11,12,15,17,18

Kimmy: 2, 6,7,8,9,10,11,12,14,16,17,19,20,21

Jules: 6, 8, 9, 11, 12, 14, 24, 25, 26, 27, 28, 29

SUSTAINABLE RECOMMENDATIONS FOR THE CITY OF OXFORD'S TREE LIST

Prepared by

Olive Abram, August Daugherty, Devante Harris, Kimmy Kasarcik, Jules Swope

Table of Contents

Overview of the Project

Photo credit August Daugherty 2025

The City of Oxford's current Urban Forestry Program maintains over 3,500 trees on streets, in parks, and in public spaces around the City, not including the trees in the wooded areas of Oxford. Ideally, Oxford plants three trees for every two trees removed, following the Climate Action Plan's 1:1.5 replacement ratio. The City has been designated as a Tree City USA since 1996.

The City of Oxford's Climate Action Plan requires that, by 2025, the Oxford Tree Planting List is revised to include trees that are both non-invasive to Ohio and the surrounding states and tolerant of projected climate change. The Climate Action Plan also encourages the prioritization of equitable tree planting in vulnerable areas of the community. The goal is to expand the City of Oxford's urban tree canopy from 35% to 50% by supporting tree planting and urban forestry programs.

These goals are reaffirmed in the Oxford Tomorrow Comprehensive Plan in recommendation S4-A2. The City also intends to follow the 30:20:10 method for genus, family, and species of all trees planted. Our group's primary goal is to recommend a revised tree list to assist the City in improving the quality and quantity of the City's urban tree canopy. The currently used tree list was last updated in the 1990s and included 76 trees.

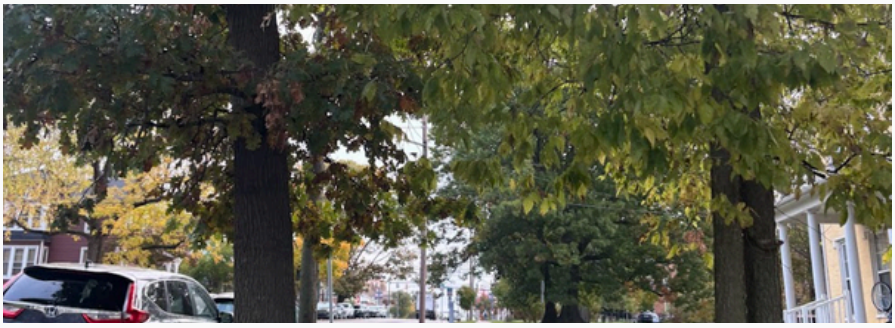


Photo credit Kimmy Kasarcik 2025

"***S4-A2. Expand the city's urban tree canopy by supporting tree planting and urban forestry programs... ...***the City already has an urban forestry program, which aims for a tree replacement ratio of 1:1.5, which can help to gradually increase Oxford's urban tree canopy."

Climate Projections

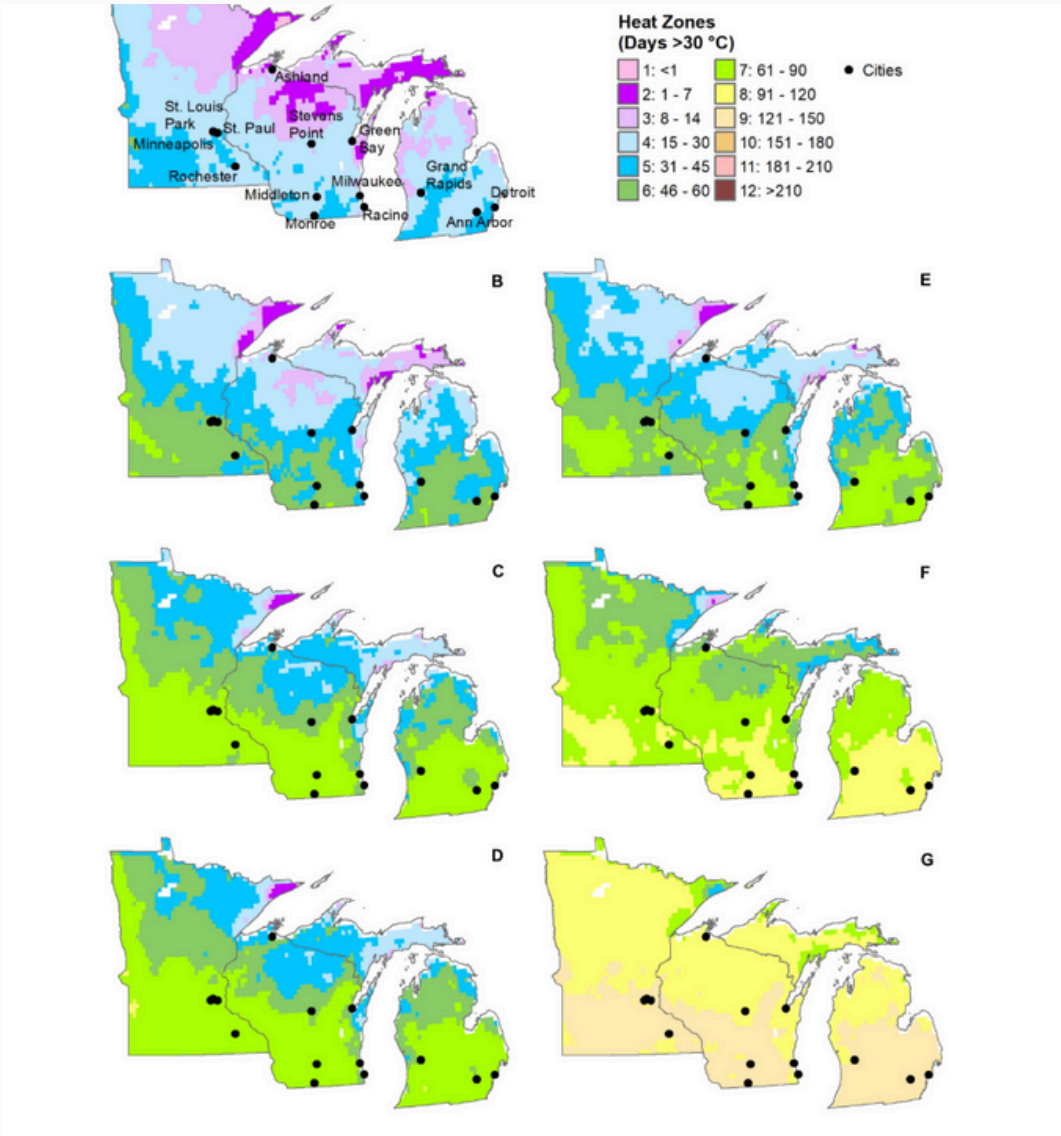


Figure 1 (Brandt)

Collectively we referenced various sources to understand our region's (the Ohio River Valley) climate. We researched the projected change in climate in the next 20-50 years. The main variables we reviewed were changes in heat and cold, extreme weather frequency, flood risk, tornado risk and heavy rain, among others. Currently, Oxford is in a 6a-6b climate zone and we found that this region is expected to shift to an even warmer zone in the next 50 years (Brandt). Figure 1 shows the projected shift in Heat Zones in Minnesota, Wisconsin, and Michigan. Selection of trees is based on how likely they are to survive or thrive in the new climate. Data was not all in one source and required several reference sites from projected AC usage to flooding data going back 80 years.

Multiple Variable Tree Species Selection Process

03

As a group, we ranked the variables by order of importance. As the City of Oxford's climate is projected to evolve in coming years, we collectively decided urban survivability is the most important factor to consider moving forward. We then ranked fruit produced and a new category we created, deer resistance. Our variable ranking next included climate tolerance and threats. We then had sun/shade and canopy size ranked as less important variables. Height and soil were ranked equally less important, as the soil in Oxford can support a wide range of tree species. Then finally support of native species and growth rate were our least important variables as they do not pose current or future threats on our landscape. Figure 2, shown below is a screenshot from our final, cleaned tree coding sheet. In the Appendix, is the table of our variables and descriptions and categories used for the tree species.

A	B	C	D	E	F	G
Tree	Urban Survivability	Fruit	Deer Resistance	Climate Tolerance	Threats	Sun/Shade
Accolade (trademarked) Elm	Urban Residential Rural	Urban Residential Rural	Fair	Good	Insects Disease	Full Sun
American Hop-Hornbeam	Urban Residential Rural	Residential Rural	Fair	Fair	Insects	Full Sun Partial Sun Partial Shade
American Linden (American Basswood)	Residential Rural	Urban Residential Rural	Poor	Good	Insects Disease	Full Sun Partial Sun Partial Shade
American Smoketree	Urban Residential Rural	Urban Residential Rural	Good	Good	Disease	Full Sun
Bald Cypress	Urban Residential Rural	Rural	Good	Fair	Drought	Full Sun
Bigleaf Linden	Urban Residential Rural	Urban Residential Rural	Poor	Poor	Insects	Full Sun Partial Sun Partial Shade
Bitternut Hickory	Urban Residential Rural	Residential Rural	Fair	Very Good	None	Full Sun Partial Sun Partial Shade Full Shade
Blackjack Oak	Residential Rural	Urban Residential Rural	Very Poor	Very Good	Insects Disease Competition	Full Sun
Burr Oak	Urban Residential Rural	Rural	Poor	Fair	Disease	Full Sun
Carolina Silverbell	Residential Rural	Urban Residential Rural	Fair	Very Good	Wind	Full Sun Partial Sun Partial Shade
Chalk Maple	Urban Residential Rural	Urban Residential Rural	Poor	Fair	None	Partial Shade
Chinese Buckeye	Urban Residential Rural	Rural	Fair	Very Good	Insects Disease	Full Sun Partial Sun Partial Shade
Chinese Pistache	Urban Residential Rural	Urban Residential Rural	Good	Good	Disease	Full Sun
Chinkapin Oak	Urban Residential Rural	Urban Residential Rural	Poor	Fair	Insects Disease	Full Sun
Crabapple	Urban Residential Rural	Rural	Poor	Good	Disease	Full Sun
Crimean Linden (Caucasian Lime)	Urban Residential Rural	Urban Residential Rural	Poor	Fair	Disease	Full Sun Partial Sun Partial Shade
Eastern Red Cedar	Urban Residential Rural	Residential Rural	Fair	Very G...	Insects	Full Sun
English Oak (Pedunculate Oak)	Urban Residential Rural	Urban Residential Rural	Poor	Fair	Disease	Full Sun Partial Sun
European Larch	Residential Rural	Residential Rural	Fair	Good	Insects Disease	Full Sun Partial Sun Partial Shade
Ginkgo (Maidenhair tree)	Urban Residential Rural	Urban Residential Rural	Poor	Good	Disease	Full Sun Partial Sun Partial Shade
Green Hawthorn	Urban Residential Rural	Urban Residential Rural	Very Good	Good	Disease	Full Sun Partial Sun Partial Shade
Hardy Rubber						

Figure 2

Recommended Removals

04

Photo credit Rowan Arboretum Japanese Zelkova

Photo credit Kimmy Kasarcik 2025 Black Walnut

After assessing the variables for each category, we have come to the conclusion to recommend some trees from the current list to be removed. We recommend removing the Amur Maple, Black Alder, European Beech, Goldenrain Tree, Hedge Maple, Japanese Maple, Japanese Pagoda Tree, Norway Maple, Sawtooth Oak, and Tatarian Maple, due to their invasive nature. While all of these trees are not currently labeled invasive in Ohio, they are increasing in invasiveness in surrounding states. We are recommending removing them on the basis that their invasive qualities will eventually reach our environment.

Furthermore, we also recommend removing All Seasons Sugarberry, Alleghany Serviceberry, American Beech, American Hornbeam, Amur Maackia, Autumn Breeze Freeman Maple, Black Tupelo, Centurion Crabapple Tree, Cornelian Cherry Dogwood, Cucumbertree Magnolia, Dawn Redwood, Fringetree, Japanese Tree Lilac, London Plan Tree, Pagoda Dogwood, Sargent Cherry, Sassafras, Scarlet Oak, Shingle Oak, Tamarack, Turkish Filbert, and Two-Winged Silverbell. All of these trees had scored either poor or very poor climate tolerance based on our future projections. It would not be beneficial to plant trees that will not withstand the future climate in the area.

Recommended Additions

05

Photo credit August Daugherty 2025

Previous IES 474 classes have looked into tree recommendations not included on the current approved tree list. We assessed these recommendations against our chosen criteria to see if they are a good fit for Oxford's mission. We also decided to consult the USDA Tree Atlas for species in our area with a "Good" to "Very good" projected climate tolerance rating to add to our recommendations. If our original recommended removals were accepted, the list of medium-sized trees would shrink to only two species. In order to meet the 10-20-30 planting rule and match the volume of the current list, we looked into finding more medium-sized trees.

Photo credit August Daugherty 2025

A useful resource is the Louisville Metro Government's list of permitted tree species. However, they did not use the same criteria that we decided upon, so we ran each species through the same analysis as those on Oxford's current list. From this, we recommend the additions of Atlas Cedar, Bitternut Hickory, Green Ash, Honeylocust, and Osage Orange. We will also assessed foliage color as a variable, to diversify the aesthetic of Oxford's trees.

Recommended Final List

06

With a combination of resources, we have created the finalized list of trees using a ranking of the various qualities of each species. The most important factor was urban survivability, followed by fruit produced and a new category we created, deer resistance. Below these in rank fell climate tolerance and threats. We addressed deer resistance as Oxford has a larger than ideal deer population, and urban survivability is important to address the urban stressors to which Uptown trees are subjected. We then had sun and shade requirements and canopy size ranked as less important. Height and soil are equal to these. These four factors are lesser concerns because they will not greatly affect the survivability of the tree. They are important to include, however, in the City's consideration of planting sites. Then, finally, support of native species and growth rate were our least important variables as they again do not affect the survivability of the species.

Photo credit August Daugherty 2025

Data Access

07

The research we compiled for each of our recommended tree species is accessible to you in the shared project folder. We have included the raw data, as well as a codified version of our variables. We are providing our data in the Appendix in a variety of formats for user preference and ease of sorting.

Raw Data

Our raw data consists of a sheet containing each of the trees on the current list, along with our recommended additions. Each row contains the specific attributes of each tree, such as height and the exact type of fruit it produces. We are providing this data in both Excel and Google Sheets form.

Tree	Invasive?	Urban Survivability	Climate Tolerance	Canopy	Sun/Shade
Accolade (trademarked) Elm	no	tollerates air pollution	Zones 4-9; drought tolerant	30-40 ft	full sun
All Seasons Sugarberry	no	Successful in areas with pollution	Zones 5B-11	35-55 ft	Part shade, part sun
Allegheny Serviceberry	no	High tolerance for urban environments.	Zones 4-8; can grow in alkaline soil; high heat tolerance	15-20 ft	Partial sun

Tree	Overall Zoning Recommendation	Deer Resistance
Accolade (trademarked) Elm	Urban, Residential, Rural	Fair
American Hop-Hornbeam	Residential, Rural	Fair
American Linden (American Basswood)	Residential, Rural	Poor
American Smoketree	Urban, Residential, Rural	Good
Bald Cypress	Rural	Good
Bigleaf Linden	Urban, Residential, Rural	Poor
Bitternut Hickory	Residential, Rural	Fair
Blackjack Oak	Residential, Rural	Very Poor
Burr Oak	Rural	Poor
Carolina Silverbell	Residential, Rural	Fair
Chalk Maple	Urban, Residential, Rural	Poor
Chinese Buckeye	Rural	Fair
Chinese Pistache	Urban, Residential, Rural	Good

Refined Data

These sheets and tables again feature our decided criteria, but the data is instead sorted into subcategories such as “Fair” or “Rural” for ease of codification. We present this in Excel and Google Sheets form for single-variable sorting. We have also created an attribute table in ArcGIS for multi-variable sorting.

	Tree *	Name	UrbSurv	Fruit	RecZone
1	1	Accolade Elm	Urban, Residential, Rural	Urban, Residential, Rural	Urban, Residential, Rural
2	5	American Hop-Hornbea...	Urban, Residential, Rural	Residential, Rural	Residential, Rural
3	7	American Linden (Bass...	Residential, Rural	Urban, Residential, Rural	Residential, Rural
4	8	American Smoketree	Urban, Residential, Rural	Urban, Residential, Rural	Urban, Residential, Rural
5	11	Bald Cypress	Urban, Residential, Rural	Rural	Rural
6	67	Bigleaf Linden	Urban, Residential, Rural	Urban, Residential, Rural	Urban, Residential, Rural
7	68	Bitternut Hickory	Urban, Residential, Rural	Residential, Rural	Residential, Rural
8	69	Blackjack Oak	Residential, Rural	Urban, Residential, Rural	Residential, Rural
9	14	Burr Oak	Urban, Residential, Rural	Rural	Rural
10	70	Carolina Silverbell	Residential, Rural	Urban, Residential, Rural	Residential, Rural

Conclusion

With the combination of research, meetings, revisions, and the final presentation, we have adjusted our recommended additions and removals to the Oxford City Tree List. Between the five of us, we have sourced information on climate change, soil profiles, extreme weather events, and the cost breakdowns for different tree selections. Potential caveats include the varying impacts of climate change on Southwest Ohio and the Midwest in general. This list has been created in relation to the current projections of climate change, as noted by the USDA and USFS. The unpredictable nature of natural systems also includes risks of blight and disease, regardless of the precautions taken in the recommendations for the list. Data collection and analysis have been completed in a GIS table for ease of access and utilization by future parties.

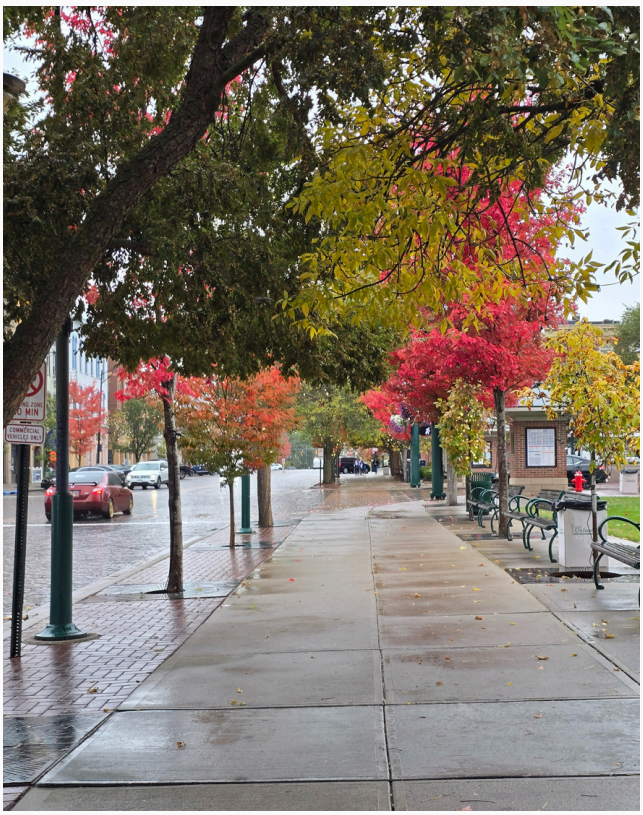


Photo credit August Daugherty 2025

Photo credit August Daugherty 2025

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Appendix

Variable	Explanation of Attributes	Sources
Urban Survivability	Urban, Residential, Rural	City of Oxford Climate Action Plan
Fruit Litter	Urban: fruits that we found to be small enough/ not too annoying for urban setting (Uptown) Residential: medium size/annoyance fruit litter Rural: the largest and most annoying fruit litter	International Society of Arboriculture
Deer Resistance	Very Poor, Poor, Fair, Good, Very Good	City of Oxford Deer Management Program
Climate Tolerance	Very Poor, Poor, Fair, Good, Very Good	City of Oxford Climate Action Plan, Climate Central
Threats	Insects, Disease, Ice, Wind, Heat, Drought, Floods, Competition, and/or None	The Nature Conservancy
Sun/Shade Preference	Full Sun: > 6 hrs direct Partial Sun: 4 - 6 hrs Partial Shade: 2 - 4 hrs Shade: < 2 hrs	Morton Arboretum
Canopy Size	Small: < 26 ft Medium: 27 - 49 ft Large: > 50 ft	The Nature Conservancy
Height	Small: < 30 ft Medium: 31 - 44 ft Large: > 45 ft	Original City of Oxford Tree List
Soil Preference	Dry, Moist, and/or Wet	Soil Explorer
Native Species	Pollinators, Small Birds, Small Mammals, Large Mammals, Insects	North Carolina Extension Gardener's Toolbox
Growth Rate	Slow: < 1ft per year Moderate: 1-2 ft per year High: > 2 ft per year	Morton Arboretum
Cost	$: <$150 $$: $150 - $200 $$$: > $200	Midterm Meeting w/ David Treleaven & Reena Murphy

Thank You!

SMALL TREES

To be planted *no closer than 30 feet apart,* in tree lawns or public right-of-way that is at least 3 feet wide. The average 30-year mature tree height less than 30 feet.

Common Name(s)	Scientific Name (Family, Genus, Species)
~~Hedge Maple (Field Maple)~~	~~*Aceraceae Acer campestre*~~
~~Amur Maple~~	~~*Aceraceae Acer ginnala*~~
Paperbark Maple	*Aceraceae Acer griseum*
~~Tartarian Maple~~	~~*Aceraceae Acer tartaricum*~~
American Smoketree N	*Anacardiaceae Cotinus obovatus*
American Hop-Hornbeam C, N	*Betulaceae Ostrya virginiana*
~~Cornelian Cherry Dogwood (tree form) N~~	~~*Cornaceae Cornus mas*~~
~~Pagoda Dogwood (tree form) C, N, S (Alternate Leaf Dogwood or Green Osier)~~	~~*Cornaceae Cornus alternifolia*~~
~~Amur Maackia~~	~~*Fabaceae Maackia amurensis*~~
Saucer Magnolia	*Magnoliaceae Magnolia soulangeana*
Star Magnolia	*Magnoliaceae Magnolia stellate*
~~Fringetree (white fringetree) SE U.S.~~	~~*Oleaceae Chionanthus virginicus*~~
'Ivory Silk' Japanese Tree Lilac	*Oleaceae Syringa reticulata* 'Ivory Silk'
Thornless Cockspur Hawthorn C, N, S	*Rosaceae Crataegus crusgalli* 'Inermis'
~~Centurion Crabapple (tree form) *Malus* is C, N, S~~	~~*Rosaceae Malus* 'Centzam'~~
Harvest Gold Crabapple (tree form) *Malus* is C, N, S	*Rosaceae Malus* 'Hargozam' Prairiefire
Crabapple (tree form) *Malus* is C, N, S	*Rosaceae Malus* 'Prairiefire'
Sugar Tyme Crabapple (tree form) *Malus* is C, N, S	*Rosaceae Malus* 'Sutyzam'
~~Amur Cork (Chinese Cork), male only~~	~~*Rutaceae Phellodendron amurense*~~
~~Two-Winged Silverbell (Snowdrop Tree) Native to US~~	~~*Sytracaceae Halesia diptera*~~
Shadblow Serviceberry C, N, S	*Rosaceae Amelanchier canadensis*

C: Considered "Common" in Ohio Department of Natural Resources, Division of Forestry (ODNR)" Index of Ohio Trees"

N: Considered a generally "Native" tree species by the ODNR

S: Suggested by ODNR in "Selecting Trees for Your Needs" January, 2009

MEDIUM TREES

To be planted *no closer than 40 feet apart*, in tree lawns or public right-of-way that is at least 5 feet wide. The average 30-year mature tree height less than 45 feet.

Common Name(s)	Scientific Name (Family, Genus, Species)
~~Japanese Maple~~	~~*Aceraceae Acer palmatum*~~
~~Black Alder N, S~~	~~*Betulaceae Almus glutinosa*~~
Heritage River Birch C, N, S	*Betulaceae Betula nigra*
~~American Hornbeam N~~	~~*Betulaceae Carpinus caroliniana*~~
~~Turkish Filbert (Hazelnut)~~	~~*Betulaceae Corylus colurna*~~
Katsura Tree	*Cercidphylaceae Cercidiphyllum japonicum*
Hardy Rubber Tree	*Eucommiaceae Eucommia ulmoides*
Yellowwood N (American or Kentucky Yellowwood)	*Fabaceae Cladrastis kentuckea*
Thornless Honeylocust C, N, S	*Fabaceae Gleditsia triacanthos*'Inermis'
~~Japanese Pagoda Tree (Chinese Scholar Tree)~~	~~*Fabaceae Sophora japonica*~~
~~Sassafras C, N~~	~~*Lauraceae Sassafras albidum*~~
~~Shadblow Serviceberry C, N, S~~	~~*Rosaceae Amelanchier arborea*~~
~~Allegheny Serviceberry C, N, S (Smooth Serviceberry)~~	~~*Rosaceae Amelanchier laevis*~~
~~Sargent Cherry~~	~~*Rosaceae Prunus sargentii*~~
~~Goldenrain Tree~~	~~*Spindaceae Koelreuteria paniculata*~~
Crimean Linden (Caucasian Lime)	*Tiliaceae Tilia x. euchlora*
Zelkova (Japanese Elm)	*Ulmaceae Zelkova serrata*
American Hop Hornbeam N	*Betulaceae Ostrya virginiana*
Blackjack Oak N	*Fagaceae Quercus marilandica*
Carolina Silverbell C	*Styracaceae Halesia carolina*

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N: Considered a generally "Native" tree species by the ODNR

S: Suggested by ODNR in "Selecting Trees for Your Needs" January, 2009

Chalk Maple	*Sapindaceae Acer leucoderme*
Chinese Buckeye	*Sapindaceae Aesculus chinensis*
Chinese Pistache	*Anacardiaceae Pistacia chinensis*
Green Hawthorn	*Rosaceae Crataegus viridis*
Henry Maple	*Sapindaceae Acer henryi*
Nuttall Oak	*Fagaceae Quercus texana*
Ohio Buckeye C, N	*Sapindaceae Aesculus glabra*
Osage Orange ('White Shield') C, N (male only)	*Moraceae Maclura pomifera* 'White Shield'
Persian Ironwood	*Hamamelidaceae Parrotia persica*
Sourwood C, N	*Ericaceae Oxydendrum arboreum*
Yoshino Cherry	*Rosaceae Prunus x yedoensis*
Yulan Magnolia	*Magnoliaceae Magnolia denudata*

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S: Suggested by ODNR in "Selecting Trees for Your Needs" January, 2009

LARGE TREES

To be planted *no closer than 50 feet apart,* in tree lawns or public right-of-way that is at least 8 feet wide. The average 30-year mature tree height greater than 45 feet.

Common Name(s)	Scientific Name (Family, Genus, Species)
~~Norway Maple~~	~~*Aceraceae Acer platanoides*~~¶
Red Maple C,N,S	*Aceraceae Acer rubrum*
~~Autumn Blaze Freeman Maple~~	~~*Aceraceae Acer rubrum freemanii* 'Autumn Blaze'~~ ¶
Sugar Maple C, N, S	*Aceraceae Acer saccharum*
Sugarberry (Native to the U.S.)	*Betulaceae Celtis laeviggata*
~~All Seasons Sugarberry (Native to the U.S.)~~	~~*Betulaceae Celtis laeviggata* 'Sugarberry'~~¶
~~Black Tupelo (Blackgum) N~~	~~*Cornaceae Nyssa sylvatica*~~ ¶
Eastern Red Cedar C, N, S	*Cupressaceae Juniperus virginiana*
Dawn Redwood	*Cupressaceae Metasequoia glyptostroboides*
Bald Cypress C, N, S	*Cupressaceae Taxodium distichum*
Kentucky Coffeetree - male only N	*Fabaceae Gymnocladus dioica*
~~American Beech (North American Beech) C, N~~	~~*Fagaceae Fagus grandifolia*~~ ¶
~~European Beech (Common Beech)~~	~~*Fagaceae Fagus sylvatica*~~ ¶
Attention Oak N	*Fagaceae Quercus rubra* 'Attention'
White Oak C, N, S	*Fagaceae Quercus alba*
~~Sawtooth Oak C~~	~~*Fagaceae Quercus acutissima*~~¶
~~Scarlet Oak C, N, S~~	~~*Fagaceae Quercus coccinea*~~¶
~~Shingle Oak (Laurel Oak) C, N, S~~	~~*Fagaceae Quercus imbricaria*~~¶
English Oak (Pedunculate Oak) C	*Fagaceae Quercus robur*
Red Oak C, N, S (Northern Red or Champion Oak)	*Fagaceae Querecus rubra*
Shumard Oak C, N	*Fagaceae Quercus shumardii*
Burr Oak (Bur or Mossycup Oak) C, N	*Fagaceae Quercus macrocarpa*
Chinkapin Oak (Chinquapin Oak) C, N	*Fagaceae Quercus muehlenbergii*
Ginkgo (Maidenhair tree) - male only	G*inkgoaceae Ginkgo biloba*
Sweetgum C, N, S	*Hamelidaceae Liquidambar styraciflua*
Tulip tree (Tulip Poplar) C, N, S	*Magnoliaceae Liriodendron tulipifera*
~~Cucumbertree Magnolia C, N~~	~~*Magnoliaceae Magnolia acuminata*~~¶

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S: Suggested by ODNR in "Selecting Trees for Your Needs" January, 2009

LARGE TREES
(continued)

Common Name(s)	Scientific Name (Family, Genus, Species)
~~Silver Linden~~	~~*Malvaceae Tilia tomentosa* ¶~~
European Larch	*Pinaceae Larix decidua*
~~Tamarack~~	~~*Pinaceae Larix laricina* ¶~~
(Eastern, American, or Black Larch, or Hackmatack) Native to Canada, upper Midwest and NE states	
London Plane Tree (hybrid of native Sycamore)	*Platanaceae Platanus x acerifolia*
America Linden (American Basswood) N	*Tiliaceae Tilia americana*
Littleleaf Linden	*Tiliaceae Tilia cordata*
Bigleaf Linden	
Prairie Pride Hackberry C, N	*Ulmaceae Celtis occidentalis* 'Prairie Pride'
Princeton Elm *U.* a*mericana* is native	*Ulmaceae Ulmus americana* 'Princeton'
Valley Forge Elm *U.* a*mericana* is native	*Ulmaceae Ulmus americana* 'Valley Forge'
Homestead Elm	*Ulmaceae Ulmus* 'Homestead'
Pioneer Elm	*Ulmaceae Ulmus* 'Pioneer'
Regal Elm	*Ulmaceae Ulmus* 'Regal'
Accolade (trademarked) Elm	*Ulmaceae Ulmus davidian* var. *japonica* "Morton'

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N: Considered a generally "Native" tree species by the ODNR

S: Suggested by ODNR in "Selecting Trees for Your Needs" January, 2009