
Indiana DNR Division of Forestry, Community and Urban Forestry Program

Addendum A: Tree Planting Project Requirements

The following are minimum standards for tree planting projects funded by DNR CUF grants. Local ordinances or guidelines with more stringent standards should be honored. For more information on proper planting techniques please see “Best Management Practices-Tree Planting” from the International Society of Arboriculture.

1. Planning

- A. The Project Coordinator will monitor and guarantee that all species choices, site selections, tree purchases, inspections, and plantings will adhere to the requirements in this document.
- B. The project will follow the Work Plan submitted in the grant proposal. Any changes to this plan will be reviewed and agreed to by CUF personnel in writing before beginning planting. This Work Plan will also comply with any local detailed tree planting and maintenance plans prepared by a qualified professional and coordinated with local agencies to avoid conflicts.
- C. Utilities must be indicated on the plan if known. The Project Coordinator will use the 811 service to locate and mark all utilities on planting sites before starting to plant. If conflicts arise, and the Work Plan must be changed, the Project Coordinator will consult with CUF as in item A above.
- D. A minimum of one (1) year warranty is required on all planting contracts with landscaping or nursery contractors. **Any contractors used on a CUF grant planting project are REQUIRED to be given a copy of this Addendum A and they are REQUIRED to follow its guidelines as part of their contract with the Subgrantee.**
- E. All trees must pass inspection by CUF personnel within 30 days of planting. Failure to do so will delay or disqualify reimbursements. Make sure to plan for and to contact CUF to schedule timely inspections.

2. Species Selection

- A. Species will be selected to fit the planting sites, taking into consideration soils and rooting space, overhead space, adjacent utilities and buildings, drainage, pollution problems, and other site conditions.
- B. Make sure to plant the largest site appropriate species for each planting location. It is recommended that Project Coordinators seek alternate planting sites in order to accommodate larger trees if the original planting location was only able to accommodate small tree species.
- C. 100% of trees planted will be species native to Indiana; cultivars of native species are acceptable.
 - i. Please view the tree species list at the end of this document. Any tree on this list is approved to plant with this project.
 - ii. If your plan includes the establishment or planting of an urban food forest/community orchard, please contact us as soon as you can in the planning process to discuss acceptable tree species.
 - iii. Additionally, unless a current inventory demonstrates a population under 5% in the genus Acer (maple), no maples are to be planted.
- D. Trees must be a minimum of ½ inch caliper (3-gallon pot size) and up to a maximum of 2.5 inches caliper (measurement of trunk width 6 inches from soil grade). No tree larger than 2.5 inches caliper will be eligible for reimbursement.

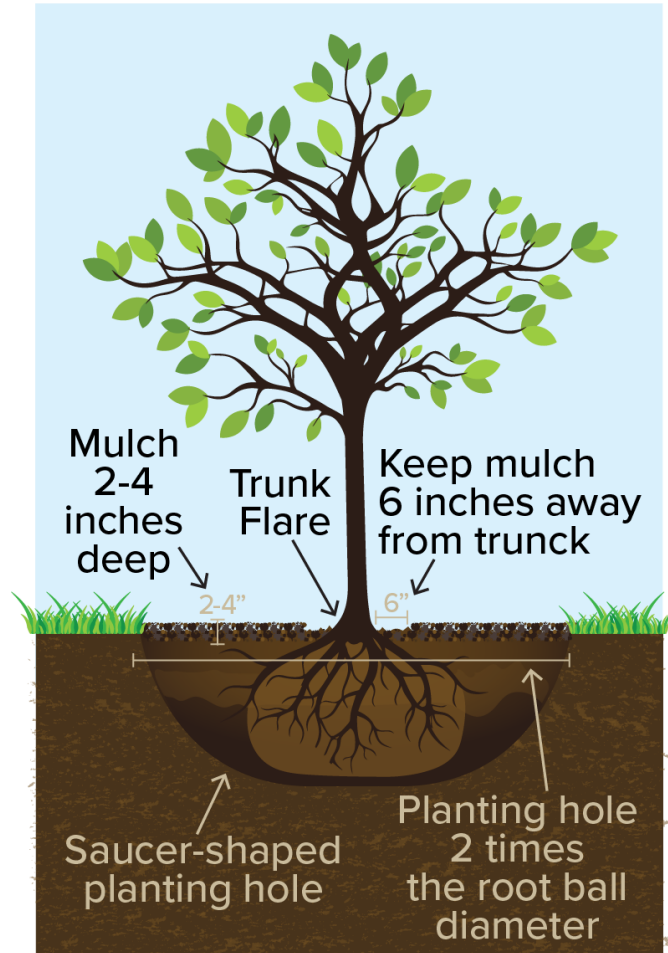
3. Site Selection

- A. Trees will be located so that they do not block infrastructure such as signs and lights and they do not reduce critical visibility.
- B. Utilities must be indicated on the plan if known. The Project Coordinator will use the 811 service to locate and mark all utilities on planting sites before starting to plant. If conflicts arise, and the Work Plan must be changed, the Project Coordinator will consult with CUF as in item A above.

4. Planting Standards - **A qualified professional arborist OR trained volunteer OR the Project Coordinator must be ON SITE to supervise all tree plantings.** The following criteria will be used as a minimum in carrying out and inspecting the projects.

- a. Inspect all trees to be planted upon pickup/delivery. Reject those specimens which present severe health and form limitations or visible damage. Only high-quality nursery stock trees will be eligible for reimbursement. High quality trees will have the following characteristics:
 - i. Single leader or central trunk or well-spaced, multi stemmed trunk that does not show signs of crowding or stem squeeze.
 - ii. Trunk is free of mechanical wounds and wounds from incorrect pruning.
 - iii. Strong form with well-spaced, firmly attached branches along the upper two-thirds of the trunk.
 - iv. Leaves with good color and no obvious insect or disease damage.
 - v. Roots have a healthy appearance, not black and rotten.
- b. Holes dug for planting of trees will be 1.5-2x the diameter of the root system or root ball. Sides of the hole should be gently sloped and slightly less deep than the root ball: more like a saucer than a cylinder in shape.
 - i. Dig the planting hole shallower in areas with wet soil conditions and backfill up to the edge of the root ball. This will allow for "settling" of the tree.
- c. **Trees will be planted with the trunk flare at grade. It is likely that you will need to remove soil on top of the root ball to get to the flare.** In compacted or heavy clay soils, they can be planted slightly higher (no more than 1/8 of the root ball above ground level). Seeing the trunk flare at grade level is crucial. In no case should the first main lateral root emerging from the trunk be more than 1 inch below the soil level. If the trunk flare is not at grade level at the time of inspection corrections will be required before full reimbursement will be issued.
- d. Cut/correct any circling, girdling, or adventitious roots before planting the tree.
- e. Strings, twine, netting, and any other packaging materials will be removed from the trunks, branches, and roots of trees. It is a **REQUIREMENT** that the burlap and wire basket be completely removed from the upper 1/3 - 1/2 of the root ball after the root flare has been found and exposed, or as needed to prevent obstruction of the primary structural roots of the tree. If you remove the entire basket and burlap then stakes and ties are recommended. These stakes and ties should stay in place no more than 6–12 months and be removed when the trees' root systems have been established. If the burlap and wire basket are not removed from the upper portion of the root ball and the root flare has not been found and exposed at the time of the inspection, then corrections will need to be made before plantings will be approved. **All plantings must be approved in order for you to receive reimbursement.**
- f. Backfill with existing site soil. Large rocks and debris are to be removed. Excess soil from the hole will be removed from the site; leftover soil should never be placed over the root zone. This changes the grade of the landscape and plants the tree too deeply.
- g. Trunk wrap is not necessary; however, a freestanding wrap/screen tube may be used when sensitive species are exposed to direct sun or to animal damage. The wrap should allow some light to pass through, and it should not be in direct contact with the trunk.
- h. A layer of mulch, 2 to 4 inches thick, and a minimum of 6 inches away from the trunk, will be applied around the tree in a circle 36 inches wide or twice the diameter of the root ball, whichever is larger. Under no circumstances should trees be volcano mulched: Do not pile mulch directly against the tree trunk.

- i. Dead, damaged, or poorly located branches will be removed using proper pruning techniques.
 - j. When staking, use flat tree support strapping or grommated straps rather than ropes, wires, or hose segments against the trunk. The straps spread the pressure over a wider area, reducing the potential for bark damage. Straps should lie flat against the trunk and should not be bunched up or twisted. Two or three straps are routinely used in tree staking.
 - k. Thoroughly water the tree and the entire mulch area to collapse any air pockets introduced during planting.
 - l. **It is a requirement that every tree that is planted be recorded on the work summary.**
5. **Tree Maintenance** - Trees should be maintained for a minimum of **three years** to ensure survival. Tree maintenance is particularly important throughout the growing season, generally April through October. Watering is especially important and must be scheduled. Newly planted trees require more frequent watering schedules than mature trees. **A maintenance plan is required to be submitted with your application. The maintenance plan shall include how you plan to care for the trees following planting.**
- A. Trees should be inspected regularly to evaluate general health and disease and insect problems.
 - B. Treat disease and insect problems as needed to maintain tree health.
 - C. Water during the growing season. A long slow soak is best. Water should be applied weekly or as needed when natural precipitation is not enough. A good rule is to provide water at the rate of 5 gallons for every caliper inch. Keep the area under the tree canopy properly mulched. Check soil with a soil probe, if available, for dampness and drainage. Overwatering can be just as lethal as underwatering. Most importantly, a consistent watering regimen in the fall before the ground freezes is recommended to help ensure a healthy plant in the spring.
 - D. Trees will be pruned as needed to remove dead, damaged, or poorly located limbs using accepted practices of industry (ANSI A300 – 2017 Pruning for Tree Care Operations – Tree, Shrub, and other Woody Plant Maintenance Standard Practices).



Tree Species List

Welcome to the Indiana Tree Species List, created by the Indiana DNR's Community & Urban Forestry Team. This list only includes species that are native to Indiana. For more information about why we recommend planting native and how to select the best species for your planting site, please see our Species Selection Guide.

Growth Information

SIZE

Size	Mature Height	Minimum Site Width
Small	< 30 ft.	4 ft.
Medium	30-45 ft.	5 ft.
Large	> 45 ft.	6 ft.

Species are sorted into three categories based on their average height at maturity. Bigger trees need more space in all directions, so site size considerations should include site width, soil volume, vertical space, and spacing from buildings and other trees.

GROWTH RATE

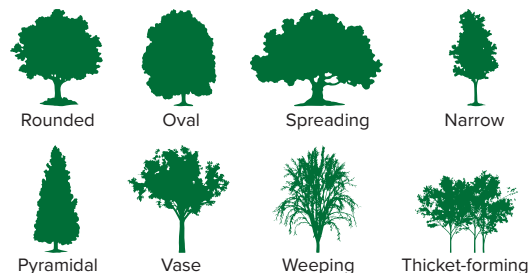
Species are categorized as slow-, moderate-, or fast-growing. Generally, species that grow faster have shorter lifespans and vice versa. Fast-growing species can quickly provide privacy and fill in landscapes rapidly, while slower species produce stronger wood with better defense mechanisms against pests and disease.

EVERGREEN OR DECIDUOUS

Evergreen trees have foliage that remains green and functional throughout the year. Deciduous trees lose their foliage annually. Evergreens offer year-round privacy and wind protection while deciduous trees provide shade and seasonal interest.

FORM

Trees vary in height, width, and branching pattern, and it is important to match form to the site and the intended function. Consider visibility requirements and aesthetics when selecting a species.



Planting Locations

GOOD FOR PARKS

These trees are suitable for large, open spaces that are well-maintained, such as parks, yards, and commercial and industrial campuses. Trees with heavier litter can be used here, as well as those suitable for right-of-way and median plantings.

GOOD FOR STREETS

These species are suitable street trees. Street trees are those located in the public right-of-way (ROW), including:

- Treelawn – the grassy strip between the sidewalk and the street
- Non-treelawn – ROW extends into the front yard where no treelawn is present
- Medians and parkways – grassy strips either in the center of roadways or adjacent to them

These areas vary in width, so make selections in conjunction with the size column. These trees are generally low-litter species, and they have a high tolerance to extreme urban conditions like pollution and compacted soils.

Street trees are also exposed to de-icing salts that are applied to sidewalks and roads. Salt tolerance was factored into this category, but you may want to do additional research about salt spray and saline soil if relevant for your community.

RIPARIAN

These trees are known for thriving along various bodies of water and like to have “wet feet.” Consider planting species from this category in areas that tend to have standing water after heavy rain events.

NATURAL AREAS ONLY

Trees in this category are best suited for unmaintained natural areas, particularly those that do not get mowed. This includes “messy” trees that produce excessive litter (i.e., leaves, fruits, nuts), species with sharp thorns, and trees that are aggressive or prone to weedy growth. Additionally, trees that are difficult to find in nurseries are marked here.

Preference

DRAINAGE

D = Dry
WD = Well-drained
M = Moist
W = Wet

LIGHT

☉ = Full sun
◐ = Partial shade
● = Full shade

Trees Not Recommended

The following native species are currently **not recommended** for planting anywhere in Indiana:

Scientific Name	Common Name	Reasoning
<i>Acer negundo</i>	Boxelder (ash-leaved maple)	overplanted
<i>Acer nigrum</i>	Black maple	overplanted
<i>Acer rubrum</i>	Red maple	overplanted
<i>Acer saccharinum</i>	Silver maple	overplanted
<i>Acer saccharum</i>	Sugar maple	overplanted
<i>Castanea dentata</i>	American chestnut	Chestnut blight
<i>Fraxinus americana</i>	White ash	Emerald ash borer
<i>Fraxinus nigra</i>	Black ash	Emerald ash borer
<i>Fraxinus pennsylvanica</i>	Green (red) ash	Emerald ash borer
<i>Fraxinus profunda</i>	Pumpkin ash	Emerald ash borer
<i>Fraxinus quadrangulata</i>	Blue ash	Emerald ash borer
<i>Juglans cinerea</i>	White walnut, Butternut	Butternut canker
<i>Ulmus alata</i>	Winged elm	Dutch elm disease
<i>Ulmus americana</i>	American (white) elm	Dutch elm disease*
<i>Ulmus rubra</i>	Slippery (red) elm	Dutch elm disease
<i>Ulmus thomasii</i>	Rock elm	Dutch elm disease

*Contact CUF with questions about DED-resistant cultivars.

Questions?

Email urbanforestry@dnr.IN.gov
or call 317-234-6568.

Tree Species List

Scientific Name	Common Name(s)	Growth Information				Planting Locations				Preference	
		Size	Growth Rate	Evergreen or Deciduous	Form	Natural Areas Only	Good for Parks	Good for Streets	Riparian	Drainage	Light
<i>Aesculus flava</i> (octandra)	Yellow buckeye	L	Moderate	D	Oval		✓	✓		WD, M	☉●
<i>Aesculus glabra</i>	Ohio buckeye	M	Moderate	D	Rounded		✓	✓	✓	WD, M	☉●
<i>Amelanchier arborea</i>	Downy serviceberry	S	Moderate	D	Narrow		✓	✓		WD, M	☉●
<i>Amelanchier laevis</i>	Allegheny (smooth) serviceberry	S	Moderate	D	Narrow		✓	✓		WD, M	●
<i>Asimina triloba</i>	Pawpaw	M	Slow	D	Pyramidal		✓		✓	WD, M, W	☉●
<i>Betula alleghaniensis</i>	Yellow birch	L	Moderate	D	Rounded		✓			WD, M	☉●●
<i>Betula nigra</i>	River birch	M	Fast	D	Rounded		✓		✓	WD, M, W	☉
<i>Betula papyrifera</i>	Paper birch	L	Fast	D	Rounded		✓			WD, M	☉
<i>Betula populifolia</i>	Gray birch	M	Moderate	D	Pyramidal		✓	✓		WD, M	☉
<i>Carpinus caroliniana</i>	Hornbeam, blue beech, musclewood	M	Slow	D	Oval		✓	✓		WD, M, W	☉●
<i>Carya cordiformis</i>	Bitternut hickory	L	Slow	D	Oval		✓			WD, M	☉●
<i>Carya glabra</i>	Pignut hickory	L	Slow	D	Oval		✓			any	☉●
<i>Carya illinoensis</i>	Northern pecan	L	Moderate	D	Oval		✓			WD, M, W	☉
<i>Carya laciniosa</i>	Shellbark hickory	L	Moderate	D	Oval		✓		✓	W	☉●
<i>Carya ovalis</i>	Red hickory	L	Slow	D	Rounded		✓			WD, M	☉
<i>Carya ovata</i>	Shagbark hickory	L	Moderate	D	Oval		✓			WD, M, W	☉●
<i>Carya pallida</i>	Pale (sand) hickory	L	Slow	D	Narrow		✓			WD, M	●
<i>Carya tomentosa</i>	Mockernut hickory	L	Slow	D	Oval		✓			WD, M	☉●
<i>Catalpa speciosa</i>	Northern Catalpa	L	Fast	D	Oval		✓	✓	✓	WD, M	☉
<i>Celtis laevigata</i>	Sugarberry	M	Fast	D	Rounded		✓	✓	✓	WD, M, W	☉●
<i>Celtis occidentalis</i>	Hackberry	L	Fast	D	Vase		✓	✓	✓	WD, M	☉●
<i>Cercis canadensis</i>	Eastern redbud	S	Moderate	D	Rounded		✓	✓	✓	WD, M	☉●
<i>Cladrastis kentukea</i>	Yellowwood	M	Moderate	D	Rounded		✓	✓		WD, M	☉
<i>Cornus alternifolia</i>	Pagoda (alternate-leaved) dogwood	S	Moderate	D	Spreading		✓			WD, M	☉●
<i>Cornus florida</i>	Flowering dogwood	S	Slow	D	Rounded		✓	✓		WD	●●
<i>Crataegus crus-galli</i>	Cockspur hawthorn	S	Moderate	D	Thicket-forming		✓			WD, M	☉
<i>Crataegus crus-galli</i> , var. <i>inermis</i>	Cockspur hawthorn 'thornless'	S	Moderate	D	Rounded		✓	✓		WD, M	☉
<i>Crataegus mollis</i>	Downy hawthorn	S	Moderate	D	Spreading		✓			WD, M	●
<i>Crataegus punctata</i>	Dotted hawthorn	S	Moderate	D	Spreading		✓			WD, M	☉
<i>Crataegus viridis</i>	Green hawthorn	M	Moderate	D	Spreading		✓	✓		WD, M	☉●
<i>Diospyros virginiana</i>	Persimmon	L	Moderate	D	Oval		✓			WD, M, W	☉

KEY

SIZE

S = ≤30ft. mature height, 4ft. minimum site width
 M = 30–45ft. mature height, 5ft. minimum site width
 L = ≥45ft. mature height, 6ft. minimum site width

DRAINAGE

D = Dry
 WD = Well-drained
 M = Moist
 W = Wet

LIGHT

☉ = Full sun
 ● = Partial shade
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Tree Species List

Scientific Name	Common Name(s)	Growth Information				Planting Locations				Preference	
		Size	Growth Rate	Evergreen or Deciduous	Form	Natural Areas Only	Good for Parks	Good for Streets	Riparian	Drainage	Light
<i>Fagus grandifolia</i>	American Beech	L	Slow	D	Rounded		✓			WD, M	☉
<i>Gleditsia aquatica</i>	Water locust	L	Moderate	D	Spreading	✓			✓	W	☉
<i>Gleditsia triacanthos</i>	Honeylocust	L	Fast	D	Rounded		✓			WD, M	☉
<i>Gleditsia triacanthos</i> , var. <i>inermis</i>	Honeylocust 'thornless'	L	Fast	D	Rounded		✓	✓		WD, M	☉
<i>Gymnocladus dioicus</i>	Kentucky coffeetree	L	Moderate	D	Oval		✓			M, W	☉
<i>Gymnocladus dioicus</i> 'seedless'	Kentucky coffeetree 'seedless'	L	Moderate	D	Oval		✓	✓		WD, M, W	☉
<i>Juglans nigra</i>	Black walnut	L	Moderate	D	Rounded		✓		✓	WD, M	☉
<i>Juniperus virginiana</i>	Eastern red cedar	L	Moderate	E	Pyramidal		✓	✓		any	☉
<i>Larix laricina</i>	Tamarack	L	Fast	D	Pyramidal		✓		✓	W	☉
<i>Liquidambar styraciflua</i>	Sweetgum	L	Fast	D	Pyramidal		✓		✓	WD, M, W	☉
<i>Liquidambar styraciflua</i> 'seedless'	Sweetgum 'seedless'	L	Fast	D	Pyramidal		✓	✓		WD, M, W	☉
<i>Liriodendron tulipifera</i>	Tulip tree, tulip poplar, yellow poplar	L	Fast	D	Oval		✓	✓		WD, M	☉
<i>Magnolia acuminata</i>	Cucumber magnolia	L	Moderate	D	Pyramidal		✓			WD, M	☉
<i>Magnolia tripetala</i>	Umbrella magnolia	S	Moderate	D	Pyramidal		✓			WD, M	☉
<i>Malus coronaria</i>	Sweet crabapple	S	Moderate	D	Rounded		✓	✓		WD, M	☉
<i>Malus ioensis</i>	Prairie crabapple	S	Moderate	D	Rounded		✓	✓		WD, M	☉
<i>Morus rubra</i>	Red mulberry	L	Moderate	D	Rounded	✓				WD, M	☉
<i>Nyssa sylvatica</i>	Black gum, sour gum, tupelo	L	Moderate	D	Pyramidal		✓	✓	✓	any	☉
<i>Ostrya virginiana</i>	American hophornbeam, ironwood	M	Slow	D	Oval		✓	✓		WD, M	☉
<i>Oxydendrum arboreum</i>	Sourwood	M	Slow	D	Pyramidal		✓			WD, M	☉
<i>Pinus banksiana</i>	Jack pine	M	Slow	E	Pyramidal		✓			WD, M	☉
<i>Pinus strobus</i>	Eastern white pine	L	Moderate	E	Pyramidal		✓			WD, M, W	☉
<i>Pinus virginiana</i>	Virginia pine	M	Slow	E	Pyramidal		✓			D, WD	☉
<i>Platanus occidentalis</i>	Sycamore	L	Fast	D	Rounded		✓	✓	✓	WD, M, W	☉
<i>Populus deltoides</i>	Eastern cottonwood	L	Fast	D	Pyramidal	✓			✓	WD, M, W	☉
<i>Populus grandidentata</i>	Bigtooth aspen	L	Fast	D	Pyramidal		✓			WD, M	☉
<i>Populus heterophylla</i>	Swamp cottonwood	L	Fast	D	Rounded	✓			✓	W	☉
<i>Populus tremuloides</i>	Quaking aspen	L	Moderate	D	Pyramidal		✓	✓		WD, M, W	☉
<i>Prunus americana</i>	American (wild) plum	S	Fast	D	Thicket-forming		✓			WD, M	☉
<i>Prunus hortulana</i>	Hortulan (wild goose) plum	S	Moderate	D	Thicket-forming	✓				WD, M	☉
<i>Prunus nigra</i>	Canada plum	S	Moderate	D	Vase		✓			WD, M	☉

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<i>Prunus pensylvanica</i>	Pin cherry	S	Fast	D	Thicket-forming	✓				WD, M	○
<i>Prunus serotina</i>	Black cherry	L	Fast	D	Pyramidal		✓			WD, M	○●
<i>Quercus alba</i>	White oak	L	Slow	D	Rounded		✓	✓		WD, M	○
<i>Quercus bicolor</i>	Swamp white oak	L	Slow	D	Rounded		✓	✓	✓	WD, M	○
<i>Quercus coccinea</i>	Scarlet oak	L	Slow	D	Oval		✓			D, WD	○
<i>Quercus ellipsoidalis</i>	Northern pin (Hill's) oak	L	Moderate	D	Oval		✓	✓		WD, M	○
<i>Quercus falcata</i>	Southern red oak	L	Moderate	D	Rounded		✓	✓	✓	any	○
<i>Quercus imbricaria</i>	Shingle oak	L	Slow	D	Pyramidal		✓	✓		WD, M	○●
<i>Quercus lyrata</i>	Overcup oak	L	Slow	D	Rounded		✓	✓	✓	M, W	○
<i>Quercus macrocarpa</i>	Bur oak	L	Moderate	D	Rounded		✓	✓		D, WD, M	○
<i>Quercus marilandica</i>	Blackjack oak	M	Slow	D	Rounded	✓				D, WD	○
<i>Quercus michauxii</i>	Swamp chestnut oak	L	Moderate	D	Oval		✓	✓	✓	WD	○●
<i>Quercus montana</i>	Chestnut oak, rock chestnut oak	L	Slow	D	Rounded		✓	✓		WD, M	○●
<i>Quercus muehlenbergii</i>	Chinquapin oak	L	Slow	D	Oval		✓	✓		D, WD	○
<i>Quercus pagoda</i>	Cherrybark oak	L	Moderate	D	Rounded		✓	✓		WD, M	○●
<i>Quercus palustris</i>	Pin oak	L	Fast	D	Oval		✓	✓		WD, W	○
<i>Quercus phellos</i>	Willow oak	L	Fast	D	Oval		✓	✓	✓	WD, M, W	○●
<i>Quercus rubra</i>	Northern red oak	L	Moderate	D	Rounded		✓	✓		WD, M	○●
<i>Quercus shumardii</i>	Shumard oak	L	Moderate	D	Pyramidal		✓	✓	✓	WD, M	○●
<i>Quercus stellata</i>	Post oak	L	Slow	D	Rounded		✓	✓		any	○
<i>Quercus velutina</i>	Black oak	L	Moderate	D	Rounded		✓	✓		D, WD	○●
<i>Quercus x deamii</i>	Deam oak	L	Slow	D	Pyramidal	✓				D, WD	○
<i>Robinia pseudoacacia</i>	Black locust	M	Fast	D	Oval	✓				WD, M	○●
<i>Salix amygdaloides</i>	Peachleaf willow	L	Fast	D	Weeping		✓		✓	M, W	○●
<i>Salix nigra</i>	Black willow	M	Fast	D	Weeping		✓		✓	M, W	○●
<i>Sassafras albidum</i>	Sassafras	L	Moderate	D	Pyramidal		✓			WD, M	○●
<i>Taxodium distichum</i>	Bald cypress	L	Slow	D	Pyramidal		✓		✓	W	○●
<i>Thuja occidentalis</i>	Northern (eastern) white cedar, arborvitae	L	Slow	E	Pyramidal		✓			WD, M	○
<i>Tilia americana</i>	American basswood, American linden	L	Moderate	D	Rounded		✓	✓		WD, M	○●
<i>Tsuga canadensis</i>	Eastern hemlock	L	Moderate	E	Pyramidal		✓			WD	○●

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