Appendix B

Recommended Native Trees
RECOMMENDED URBAN TREES
WILMINGTON, DE AREA (USDA HARDINESS ZONE 7)

BEFORE PLANTING: THINGS TO REMEMBER!

- Street trees provide many benefits beyond beautification of our neighborhoods and city. They can reduce cooling costs in summer, improve property values, attract residents and businesses, and revitalize communities. Contact the Delaware Center for Horticulture to learn more about the many benefits of urban trees and to get involved with your own neighborhood street tree project, for further recommendations, or to request a new Wilmington street tree through the DCH Tree Program.

- The approval of a Wilmington Street Tree Permit is required before planting any tree in the public right-of-way (generally determined as between the sidewalk and the curb, in a tree lawn, grass strip or tree pit in sidewalk). According to the Wilmington City Code, Chapter 46 (Vegetation), street tree maintenance is the responsibility of the respective property owner. Contact the Delaware Center for Horticulture or the Wilmington Department of Parks & Recreation for a permit form or for more information.

- The selection of an appropriate street tree is essential to its success. Criteria such as soil space, underground or overhead utilities, sidewalk and curbing considerations, ultimate size, tolerance of urban conditions, and general species information must be considered before selecting a street tree for planting. Proper care during establishment of a young tree is also crucial and can reduce the need for costly maintenance in the future.

- Many popular trees do not appear on this list for a variety of reasons. The Delaware Center for Horticulture does NOT recommend nor approve the planting of Callery pear cultivars (Pyrus calleryana, e.g. Bradford) due to overuse, fruit litter, and structural problems. Other popular trees do not appear on this list due to the propensity for insect and disease problems (purple-leaf plum, Prunus cerasifera), or due to intolerance of urban conditions (Japanese maple, Acer palmatum, and flowering dogwood, Cornus florida). Some recommendations of this list are based on information specific to the City of Wilmington based on a street tree inventory completed in 2002.

- DCH receives many complaints about tree roots damaging sidewalks. By planting an appropriate tree for a given space, this can be greatly reduced. No tree is guaranteed to avoid conflicts with surrounding areas; in fact, the roots of most trees grow solely within the top 12-18” of surface soil. Watering deeply and maximizing soil space can discourage surface roots.
**SMALL TREES — SUITABLE NEAR OVERHEAD UTILITY WIRES (>10’)**

*Acer buergerianum*  
**Trident Maple**  
Spring or Fall Planting  
20-25 ft., rounded. Withstands drought and infertile soils and various temperatures. Exfoliating bark is quite striking, coloring gray, orange and brown. Yellow to red fall color.

*Acer campestre*  
**Hedge Maple**  
Spring or Fall Planting  
25-35 ft., rounded. Tolerates wide range of conditions including high soil pH and drought (once established). Relatively pest-free. Moderate road salt tolerance. Yellowish fall foliage drops late in season. Close spacing will create dense shade.

*Acer ginnala*  
**Amur Maple**  
Spring or Fall Planting  
15-20 ft., rounded. Excellent tolerance to dry and alkaline soils. One of the most cold-hardy and highly adaptable maples. Variable fall color. Has shown invasive tendencies in some areas.

*Acer griseum*  
**Paperbark Maple**  
Spring or Fall Planting  

*Acer triflorum*  
**Three-flower Maple**  
Spring or Fall Planting  
20-30 ft., rounded. Prefers moist, acidic, well-drained soil in sun to part shade. Outstanding yellow to red fall color and exfoliating bark.

*Acer truncatum*  
**Shantung Maple**  
Spring or Fall Planting  

? *Aesculus X carnea*  
**Red Horsechestnut**  
Spring or Fall Planting  
30-50 ft., rounded. Prefers moist, deep, well-drained soils, but is widely adaptable to soil types. Susceptible to a fungal disease that may cause browning of leaves. Spectacular rose-red flower.

? ✓ *Carpinus caroliniana*  
**American Hornbeam**  
Spring Planting  
25-35 ft., rounded to spreading. Prefers shaded, moist soils but will tolerate some intermittent drought as well as high pH soil once established. Good orange-red fall color and ornamental, muscle-like bark.

*Chionanthus retusus*  
**Chinese Fringe Tree**  
Spring or Fall Planting  
15-25 ft., rounded. Extremely easy to grow. Withstands acid or alkaline, sandy loam or clay soils. Prospers in sun, but withstands part shade. Early summer white flower clusters.

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✓ Example of species planted at DCH gardens/grounds  
✓ Native to Delaware or Eastern U.S.  
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SMALL TREES – SUITABLE NEAR OVERHEAD UTILITY WIRES (>10’)

Cornus mas  Cornelian cherry Dogwood  Spring or Fall Planting
20-25 ft., oval-rounded. Tolerates acid and alkaline soils, as well as heavy clay, better than any other dogwood. Bright yellow flowers in March turn to cherry-red fruit in June and July.

Cornus officinalis  Japanese Cornel Dogwood  Spring or Fall Planting
20-25 ft., oval. Similar to Cornus mas, although it flowers earlier and the fruit ripen later. Exfoliating bark in gray, orange and brown.

Cotinus obovatus  American Smoketree  Spring or Fall Planting
20-30 ft., oval-rounded. Scaly gray-black bark, cloud-like flower panicles and outstanding fall color. Limited availability in tree-form but may be limbed up or pruned.

Crataegus viridis  ‘Winter King’ Hawthorne  Spring Planting
20-30 ft., oval. White flowers, red fruit persistent through winter. Tolerant of wide range of soil types. Exfoliating bark in gray, green, orange and brown.

Koelreuteria paniculata  Goldenrain Tree  Spring Planting
30-40 ft., rounded. Tolerates drought, heat, wind, alkaline soil, salt and air pollution. Fast-growing in moist, well-drained soil. Mid-summer yellow flower clusters mature to attractive brown, papery capsules. Choose good branch structure at the nursery. Water well to recover from transplanting.

Maackia amurensis  Amur Maackia  Spring or Fall Planting

Magnolia ‘Galaxy’  ‘Galaxy’ Hybrid Magnolia  Spring or Fall Planting

Malus ‘Donald Wyman’  Flowering Crabapples  Spring Planting
25 ft., rounded. High disease resistance. Red buds that unfurl to while flowers. Glossy bright red fruit persist into winter. There are many disease-resistant crabapple cultivars to choose from with varying bud, flower, fruit colors, and growth habits.

Ostrya virginiana  American Hophornbeam  Spring Planting
25-40 ft., pyramidal to rounded. Tolerates dry, acid and high pH soils. Prospers in full sun and is also an excellent understory tree. Grayish-brown exfoliating bark, hop-shaped seed nutlet is prized by many song birds. May be sensitive to air pollutants and road salts.

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**SMALL TREES – SUITABLE NEAR OVERHEAD UTILITY WIRES (>10’)**

- **Parrotia persica**  
  Persian Parrotia  
  Spring or Fall Planting  
  20-35 ft., upright to rounded. Fantastic exfoliating gray, green white and brown bark. Reddish foliage when emerging changes to dark green in summer and brilliant yellow, orange and scarlet in autumn. Select a single-stem form for street tree use. Highly adaptable and tolerant of urban stresses once established.

- **Prunus X incam ‘Okame’**  
  ‘Okame’ Cherry  
  Spring Planting  
  20-30 ft., vase-shaped to rounded at maturity. Excellent heat and cold tolerance. One of the first trees to flower in spring; rich pink flowers appear before the leaves. Excellent bronze-red fall color.

- **Prunus subhirtella**  
  ‘Autumnalis’ Cherry  
  Spring Planting  
  20-40 ft., upright to rounded. Tolerant of urban heat. Pinkish-white flowers appear in fall and spring. One of the longest-lived cherries. Excellent yellow-orange fall color.

- **Syringa reticulata**  
  Japanese Tree Lilac  
  Spring or Fall Planting  
  20-30 ft., oval to rounded. Summer white flower clusters. Easily transplanted and adaptable. Pest-free, although powdery mildew, a common lilac problem, can occur during moist seasons.

**MEDIUM to LARGE TREES – NOT SUITABLE NEAR OVERHEAD UTILITIES**

- **Acer rubrum**  
  Red maple  
  Spring or Fall Planting  
  40-70 ft. Acid, moist soils a necessity. Sensitive to road salt and drought. Superior cultivars for form (narrow) and fall color are available. Outstanding red fall color. Not recommended for small tree pits, as shallow roots tend to create a mass of roots and possible sidewalk heaving. Somewhat over-used as a street tree in Wilmington.

- **Acer saccharum**  
  Sugar maple  
  Spring or Fall Planting  
  60-80 ft., oval. Sensitive to road salt, urban heat, soil compaction and drought. One of our best native trees for fall color – brilliant yellows, orange and red. Limit use to wide tree lawns and parkways. Many cultivars available, ‘Legacy’ is reported as the toughest.

- **Betula nigra**  
  River birch  
  Spring or Fall Planting  
  40-70 ft., oval. Prefers acid, moist soils, but adaptable. Cultivars such as ‘Heritage’ and ‘Little King’ are resistant to bronze birch borer. Exfoliating pinkish-white bark. Single-stem forms should be sought for street tree use.

- **Carpinus betulus ‘Fastigiata’**  
  European Hornbeam  
  Spring or Fall Planting  
  This upright form in youth becomes pyramidal with maturity, 30-40 ft. Tolerates drought, heavy soil and wide pH range. Water well in spring to overcome road salt intolerance. Clean green foliage turns yellow to brown in autumn.

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 تعالى Example of species planted at DCH gardens/grounds  
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### MEDIUM to LARGE TREES – NOT SUITABLE NEAR OVERHEAD UTILITIES

<table>
<thead>
<tr>
<th><strong>Celtis laevigata</strong></th>
<th>Sugar Hackberry</th>
<th>Spring Planting</th>
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<tbody>
<tr>
<td>40-50 ft., upright. Tolerates full sun or light shade, wet to dry sites, soil compaction, road salt and air pollution. Pest-free. Lemon yellow leaves in fall. Select straight-trunked trees, limited availability.</td>
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<thead>
<tr>
<th>✓ <strong>Celtis occidentalis</strong></th>
<th>Common Hackberry</th>
<th>Spring Planting</th>
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<tbody>
<tr>
<td>40-60 ft., upright. Tolerates light shade, wide range of soils, road salt and air pollution. Susceptible to gall on leaves, powdery mildew and leaf spots. Good choice where few trees of other species will prosper.</td>
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<tr>
<th>✸ <strong>Cercidiphyllum japonicum</strong></th>
<th>Katsura Tree</th>
<th>Spring or Fall Planting</th>
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<tr>
<th>? <strong>Cladastris kentuckea</strong></th>
<th>American Yellowwood</th>
<th>Spring or Fall Planting</th>
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<tbody>
<tr>
<td>30-50 ft., broad-rounded. Best growth occurs in higher pH soils, but adaptable. Pest-free. Attractive, fragrant, early summer cream-colored flowers mature to brown pods that can be a litter problem some years.</td>
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<tr>
<th><strong>Corylus colurna</strong></th>
<th>Turkish Filbert</th>
<th>Spring or Fall Planting</th>
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<tbody>
<tr>
<td>40-60 ft., pyramidal to oval. Grows in a variety of soils and displays excellent drought tolerance once established. Exfoliating bark, clean summer foliage. Widely used as a successful street tree in Europe but limited availability in the U.S.</td>
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<tr>
<th>! ✓ <strong>Fraxinus americana</strong></th>
<th>White Ash</th>
<th>Spring or Fall Planting</th>
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<tbody>
<tr>
<td>50-80 ft., oval. Performs best in deep, moist, well-drained soils of varying pH. Sensitive to drought, requires large area, heavy seed producer. Splendid large shade tree with excellent yellow to purple fall color. Scale insects can be a problem and emerald ash borer (EAB) is a new potential threat.</td>
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<tr>
<th>! ✓ <strong>Fraxinus pennsylvanica</strong></th>
<th>Green Ash</th>
<th>Spring or Fall Planting</th>
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</thead>
<tbody>
<tr>
<td>40-60 ft., oval to rounded. Excellent tolerance of heat and cold, wet and dry soils, acidic to alkaline soils. Yellow fall color. Scale insects can be a problem and emerald ash borer (EAB) is a new potential threat.</td>
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<th>✸ <strong>Ginkgo biloba</strong></th>
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<th>Spring or Fall Planting</th>
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<tr>
<td>50-80 ft., variable and irregular. Limit use to male cultivars to avoid malodorous fruit. Many cultivars available for excellent golden yellow fall foliage (‘Autumn Gold’) or narrow growth habit (‘Princeton Sentry’). Tolerates high soil pH, road salts and drought. Pest-free. Unique fan-shaped leaves. An extremely durable and long-lived urban tree. May be slow to establish.</td>
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춘 | Example of species planted at DCH gardens/grounds

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MEDIUM to LARGE TREES – NOT SUITABLE NEAR OVERHEAD UTILITIES

✓ Gleditsia triacanthos ‘inermis’  Thornless Honey Locust  Spring or Fall Planting
30-70 ft., broad oval. Very adaptable to soils, displays excellent road salt tolerance. Select a cultivar to avoid pods. Rich golden yellow fall color, compound leaf canopy produces pleasing dappled shade. Water deeply to avoid surface roots. Somewhat overused as a street tree.

Gymnocladus dioica  Kentucky Coffeetree  Spring or Fall Planting

Liquidambar styraciflua  American Sweetgum  Spring or Fall Planting
50-75 ft., pyramidal to oval. Best on moist, sunny sites, does not tolerate higher pH soils. Brilliant fall colors include yellow, orange, reds, and purples to almost black. ‘Rotundiloba’ is reportedly seedless. Limit use to areas with plenty of soil space.

Metasequoia glyptostroboides  Dawn Redwood  Spring or Fall Planting
65-90 ft., pyramidal. Deciduous conifer. Prefers full sun and acid soil. Lower branches need to be removed for street tree use as tree matures. Requires large area. Orange-brown fall needle color.

Nyssa sylvatica  Black Gum  Spring Planting
30-50 ft., pyramidal in youth to spreading with maturity. Lustrous green summer foliage changes to fantastic yellows and oranges to scarlet and purple in autumn. Bluish berry-like fruit is eaten by many bird species and as a result is not usually a litter problem. One of the best, most consistent native trees for fall foliage. Limit use to large areas, wide tree lawns or parkways. Not for heavy road salt use, polluted areas or high pH soils. Pest-free.

Pistacea chinensis  Chinese Pistache  Spring or Fall Planting
30-50 ft., oval-rounded. Scaly gray bark flakes off to expose orange inner bark. Dark green leaves become brilliant orange-red in fall. Withstands poor, droughty soils and is highly adaptable. Pest-free. Under-used street tree that has great potential.

Platanus X acerifolia  London Planetree  Spring or Fall Planting
70-90 ft., broad oval. Tolerates compacted soils, drought, road salts and varying pH. Resistant to anthracnose, but cankerstain is a very serious disease potential. Requires large area and is extremely tolerant of urban conditions and heavy pruning. Over-used as a street tree in Wilmington and many other areas. Cream to olive and brown bark can be a litter problem, as can early leaf drop some seasons.

Prunus sargentii  Sargeant Cherry  Spring Planting
25-40 ft., vase-shaped. ‘Columnaris’ is considered one of the best flowering cherries for street tree use. Pink flowers and bronze-red fall color. Prefers acid soil and full sun.

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! *Quercus acutissima*  
Sawtooth Oak  
Spring Planting  
40-50 ft., pyramidal to broad-rounded. Tolerates city conditions, including dry soils. Reasonably pest-free. Transplants more readily than most oaks. Acorn production can be heavy some years. Possibly invasive near open areas.

* ✔ *Quercus bicolor*  
Swamp White Oak  
Spring Planting  
50-80 ft., pyramidal to rounded. Easier to transplant than other white oaks. Tolerates drought, road salts and soil compaction in urban areas. Clean green summer foliage changes to yellow and red-purple in autumn. Requires acid soil.

* ✔ *Quercus imbricaria*  
Shingle Oak  
Spring Planting  
40-65 ft., pyramidal to rounded. Copper-tan fall color that persists into winter. Tolerant of urban conditions. A good, Delaware-native substitute for sawtooth oak, willow oak or pin oak.

! ✔ *Quercus palustris*  
Pin Oak  
Spring Planting  
50-70 ft., pyramidal to oval. Tolerates a wide range of soils, but prefers acid soil and full sun. Moderate salt tolerance. Red-brown fall color. Lower branches hang down and can be a clearance problem. Bacterial leaf scorch (BLS) is a recent disease problem that has been found in Wilmington and affects other red oaks. Over-used as a street tree in many areas.

* ✔ *Quercus phellos*  
Willow Oak  
Spring Planting  
55-75 ft., pyramidal to oval. Prefers acid soil and full sun. Withstands temporary flooding and dry soils. Yellow-brown to red fall color. Higher pH soils and road salts may cause chlorosis (yellowing of leaves).

*Quercus robur ‘Fastigiata’*  
Fastigiate English Oak  
Spring Planting  
Distinctly upright, a 50-60’ tree may be only 10-20 ft. wide. Widely used as a street tree in Europe. Tolerant of a wide range of soil conditions. Clean, dark blue-green foliage in summer.

! ✔ *Quercus rubra*  
Northern Red Oak  
Spring Planting  
60-80 ft., rounded. Tolerates urban conditions along streets with heavy traffic. Red to golden-brown fall color. Bacterial leaf scorch (BLS) is a recent disease problem that has been found in Wilmington and affects other red oaks. Many of Wilmington’s largest street trees are red oaks.

* ❏ ✔ ? *Taxodium ascendens*  
Pond Cypress  
Spring Planting  
70-80 ft., more columnar than *T. distichum*, otherwise very similar. Limited availability.

* ✔ *Taxodium distichum*  
Common Baldcypress  
Spring or Fall Planting  

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! *Tilia cordata*  
Littleleaf Linden  
Spring or Fall Planting

60-80 ft., dense pyramidal, many good cultivars. Best on moist, well-drained soils. Poor salt and drought tolerance, and urban heat may cause leaf scorching. Adaptable to wide soil pH range. Will withstand moderate soil compaction. Early summer yellow flowers. Yellow fall color. Over-used as a street tree, and aphid residue may cause litter on cars.

*Tilia tomentosa*  
Silver Linden  
Spring or Fall Planting

60-70 ft., pyramidal. Tolerates drought and heat better than *T. cordata*. Attractive white underside of leaves. Tolerant of high soil pH and less susceptible to Japanese beetles than other lindens.

! *Ulmus americana* hybrids  
American elm hybrids  
Spring or Fall Planting

70-90 ft., upright spreading, vase-shaped. Select ONLY Dutch elm disease-resistant hybrids. High tolerance of urban conditions. Described as “majestic” and “gracefully beautiful.” Yellow fall color. Do not plant in large groupings or entire blocks.

�� *Ulmus parvifolia*  
Lacebark Elm  
Spring or Fall Planting

50-75 ft., rounded. Has proven highly resistant to Dutch elm disease. Attractive exfoliating bark. High degree of urban stress tolerance. Yellow to wine-red fall color.

!�� *Zelkova serrata*  
Japanese Zelkova  
Spring or Fall Planting

50-70 ft., vase-shaped. Adaptable to soil pH, compaction, pollution, partial shade and drought once established. Flaky bark with orange patches. Excellent bronze-red fall color. Widely planted and somewhat over-used as a street tree in Wilmington.

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