Following is a list of trees that may serve to introduce replacements for Fraxinus sp (ash) in some areas where the Emerald Ash Borer has been very active. This list was compiled by members of the Michigan Nursery and Landscape Association and was presented at their annual Great Lakes Trade Expo in January, 2003. This list came about as a result of extensive deliberation which not only included characteristics of the various tree species but also the very important criterium - what tree the nurseries can supply to the public in sufficient quantities to meet demand. Please note the introduction by Dr. Robert Schutzki, MSU Horticulture Prof. Please also consider that the best way to avoid major catastrophes such as Dutch Elm Disease or the Emerald Ash Borer, is to avoid "mono cultures" or excessive plantings of a particular genus or species of trees by utilizing DIVERSITY!

Stay tuned for any other updates on replacements, which will surely come in the future.

(Fig.1) Ash trunk with widespread woodpecker activity.
Alternative Selections for Problems in Tree Species  Feb-03
Great Lakes Trade Exposition
Michigan Nursery and Landscape Association

Our industry is continually faced with **pest and environmental problems** that cause us to reevaluate our plant use. Some problems are larger than others, some are isolated, and others cross many boundaries. Such is the case with our most recent and troublesome problem on Ash species, **Emerald Ash Borer**. With the apparent loss of ash species/cultivars in eastern Michigan, Landscape Architects, Landscape Contractors, Arborists, and Nurserymen must revisit their product mix. The search is on for suitable alternatives to help overcome and minimize this and similar problems in the future. The following list offers several species/cultivars to consider. It is by no means complete, omission of a species or cultivar does not reflect its unsuitability. This is a chance to revisit some familiar plants or explore new possibilities; keeping in mind, selection is also based on availability. Thanks to the generosity and assistance of J. Frank Schmidt and Sons Nursery, Carlton Plant, and the Michigan Nursery and Landscape Association, a selected group of these trees will be planted in a research/demonstration plantation at the Michigan State University Tollgate Center in Novi, MI during the spring of 2003. For more information about the plantation or if you wish to contribute to these efforts, please contact Robert Schutzki, Department of Horticulture, Michigan State University (517-353-5487, email schutzki@msu.edu)

**Plant List:**

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Zone</th>
<th>Height</th>
<th>Spread</th>
<th>Ornamental Traits</th>
<th>Site Preference</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer buergerianum</td>
<td>Trident Maple</td>
<td>5-8</td>
<td>20-35’</td>
<td>20-35’</td>
<td>Mottled bark, shedding with age; dense, dark green leaves turning orange to red in the fall</td>
<td>Prefers full sun; Adapts to urban conditions</td>
<td></td>
</tr>
<tr>
<td>Acer campestre</td>
<td>Hedge Maple</td>
<td>4-8</td>
<td>25-30’</td>
<td>25-30’</td>
<td>Small dark green leaves; yellow fall color</td>
<td>Sun to partial shade; excellent residential use under utility lines</td>
<td></td>
</tr>
<tr>
<td>Acer x freemanii 'Armstrong'</td>
<td>Armstrong Freeman Maple</td>
<td>3-7</td>
<td>40-50’</td>
<td>15’</td>
<td>Yellow orange fall color; silver gray bark</td>
<td>Good street tree</td>
<td></td>
</tr>
<tr>
<td>Acer x freemanii 'Autumn Blaze®'</td>
<td>Autumn Blaze Freeman Maple</td>
<td>3-7</td>
<td>40-50’</td>
<td>40’</td>
<td>Silver-red cross; brilliant orange-red fall color</td>
<td>Grows in alkaline soils</td>
<td></td>
</tr>
<tr>
<td>Acer x freemanii 'Celebration®'</td>
<td>Celebration Freeman Maple</td>
<td>4-7</td>
<td>35-45’</td>
<td>30-40’</td>
<td>Red fall color turns gold</td>
<td>Outstanding compact tree</td>
<td></td>
</tr>
<tr>
<td>Acer x freemanii 'Marmo®'</td>
<td>Marmo Freeman Maple</td>
<td>3-7</td>
<td>60-70’</td>
<td>35-45’</td>
<td>Good red fall color</td>
<td>Good growth rate; more vigorous than Autumn Blaze®</td>
<td></td>
</tr>
<tr>
<td>Acer miyabei 'State Street'</td>
<td>State Street Maple</td>
<td>4</td>
<td>45’</td>
<td>30’</td>
<td>Dark green foliage through October; rapidly changes to pale yellow fall color</td>
<td>Prefers slightly acidic soil; good hardy plant for colder temperatures</td>
<td></td>
</tr>
<tr>
<td>Acer platanoides 'Emerald Queen™'</td>
<td>Emerald Queen Norway Maple</td>
<td>3-7</td>
<td>60-80’</td>
<td>50-60’</td>
<td>Dark glossy green foliage</td>
<td>Full sun</td>
<td></td>
</tr>
<tr>
<td>Acer platanoides 'Superform'</td>
<td>Superform Norway Maple</td>
<td>3-7</td>
<td>50-55’</td>
<td>40-50’</td>
<td>Green leaves; yellow fall color</td>
<td>Reportedly frost crack resistant</td>
<td></td>
</tr>
<tr>
<td>Botanical Name</td>
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<tr>
<td><em>Acer rubrum</em> 'Autumn Flame®'</td>
<td>Autumn Flame Red Maple</td>
<td>3-7</td>
<td>40-50'</td>
<td>40'</td>
<td>Dependable early red fall color</td>
<td>Very hardy, site tolerant</td>
<td></td>
</tr>
<tr>
<td><em>Acer rubrum</em> 'Autumn Radiance®'</td>
<td>Autumn Radiance Red Maple</td>
<td>4-7</td>
<td>30-60'</td>
<td>40'</td>
<td>Consistent red coloring throughout two weeks earlier in fall</td>
<td>Very tolerant of soils, prefers slightly acidic, moist conditions; occurs naturally in low, wet areas</td>
<td></td>
</tr>
<tr>
<td><em>Acer rubrum</em> 'Karpick®'</td>
<td>Karpick Red Maple</td>
<td>3-7</td>
<td>35-40'</td>
<td>15-20'</td>
<td>Distinct red twigs and green foliage; yellow to red fall color</td>
<td>Excellent street tree; good form for maintained areas</td>
<td></td>
</tr>
<tr>
<td><em>Acer rubrum</em> 'Northwood™'</td>
<td>Northwood Red Maple</td>
<td>3-8</td>
<td>40-50'</td>
<td>30-35'</td>
<td>Orange-red fall color in the northern areas</td>
<td>Very tolerant of soils; prefers slightly acidic, moist conditions</td>
<td></td>
</tr>
<tr>
<td><em>Acer tataricum</em></td>
<td>Tatarian Maple</td>
<td>3-8</td>
<td>20-25'</td>
<td>18-20'</td>
<td>Fall foliage is yellow, red, and brown</td>
<td>Tolerates cold, dry climates, drought, and alkaline soils; good street tree in a small residential area</td>
<td></td>
</tr>
<tr>
<td><em>Acer tataricum</em> 'Pattern Perfect™'</td>
<td>Pattern Perfect Tatarian Maple</td>
<td>3-8</td>
<td>20'</td>
<td>15-20'</td>
<td>Thick green leaves and consistent red-orange fall color</td>
<td>Good for residential landscapes</td>
<td></td>
</tr>
<tr>
<td><em>Acer truncatum</em> 'Pacific Sunset®'</td>
<td>Pacific Sunset Shantung Maple</td>
<td>4-7</td>
<td>30'</td>
<td>20-30'</td>
<td>Dark green glossy leaves with early fall color of yellow-orange to bright red</td>
<td>Relatively hardy tree; potential for street or residential areas, as well as urban areas</td>
<td></td>
</tr>
<tr>
<td><em>Amelanchier x grandiflora</em> 'Autumn Brilliance®'</td>
<td>Autumn Brilliance Apple Serviceberry</td>
<td>3-8</td>
<td>20-25'</td>
<td>15-20'</td>
<td>Bright red fall color; edible purplish black fruit</td>
<td>Full sun to partial shade</td>
<td></td>
</tr>
<tr>
<td><em>Amelanchier x grandiflora</em> 'Forest Prince'</td>
<td>Forest Prince Apple Serviceberry</td>
<td>4-8</td>
<td>20-25'</td>
<td>15-20'</td>
<td>Leathery dark green leaves; clear white flowers along the entire stems; abundant edible red fruit</td>
<td>Prefers well-drained moist, acidic soils; full sun or partial shade, not particularly pollution tolerant</td>
<td></td>
</tr>
<tr>
<td><em>Carpinus betulus</em></td>
<td>European Hornbeam</td>
<td>5-7</td>
<td>30-40'</td>
<td>20'</td>
<td>Dense foliage; yellow fall color</td>
<td>Tolerates Midwest environment; tolerant of most soils</td>
<td></td>
</tr>
<tr>
<td><em>Carpinus betulus</em> 'Fastigiata'</td>
<td>Pyramidal European Hornbeam</td>
<td>5</td>
<td>35'</td>
<td>25'</td>
<td>Dark green foliage; yellow fall color</td>
<td>Tolerant of wide range of soil conditions; prefers full sun but tolerates light to moderate shade</td>
<td></td>
</tr>
<tr>
<td><em>Carpinus betulus</em> 'Frans Fontaine'</td>
<td>Frans Fontaine European Hornbeam</td>
<td>5-7</td>
<td>30'</td>
<td>10'</td>
<td>Dark green foliage; yellow fall color</td>
<td>Good for narrow areas and screening</td>
<td></td>
</tr>
<tr>
<td><em>Carpinus betulus</em> 'Pyramidal Hornbeam'</td>
<td>Pyramidal European Hornbeam</td>
<td>5-7</td>
<td>30-40'</td>
<td>15-20'</td>
<td>Yellow fall color</td>
<td>Effective screen or street tree</td>
<td></td>
</tr>
<tr>
<td><em>Celtis occidentalis</em></td>
<td>Hackberry</td>
<td>2-7</td>
<td>30-40'</td>
<td>30'</td>
<td>Elm-like foliage; distinct, warty, gray bark</td>
<td>Tolerates dry, alkaline soils and windy conditions; very hardy</td>
<td></td>
</tr>
<tr>
<td><em>Cercidiphyllum japonicum</em></td>
<td>Katsura Tree</td>
<td>4-8</td>
<td>40-50'</td>
<td>30'</td>
<td>Heart shaped blue-green leaves; yellow-orange fall color with cinnamon-brown sugar scent</td>
<td>Prefers rich, moist slightly acidic soils</td>
<td></td>
</tr>
<tr>
<td><em>Cladrastis lutea</em></td>
<td>American Yellowwood</td>
<td>3-8</td>
<td>30-35'</td>
<td>20'</td>
<td>White, fragrant flowers; brilliant yellow fall color</td>
<td>Tolerates high pH as well as acidic situations</td>
<td></td>
</tr>
<tr>
<td>Botanical Name</td>
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<tr>
<td>Cladrastis lutea 'Perkins Pink'</td>
<td>Perkins Pink Yellowwood</td>
<td>4</td>
<td>30-35'</td>
<td>20'</td>
<td>Pink blooms; smooth gray bark; yellow fall color</td>
<td>Prefers well-drained soils</td>
<td></td>
</tr>
<tr>
<td>Crataegus ambigua</td>
<td>Russian Hawthorn</td>
<td>4-6</td>
<td>15-18'</td>
<td>18-20'</td>
<td>Bright colored red fruits</td>
<td>Adapts to extreme temperatures and soil conditions</td>
<td></td>
</tr>
<tr>
<td>Crataegus phaenopyrum</td>
<td>Washington Hawthorn</td>
<td>4-8</td>
<td>20-25'</td>
<td>20-25'</td>
<td>Fall color orange to scarlet; white flower clusters appear in May; small ½” glossy red fruit clusters persist all winter</td>
<td>Very adaptable, resistant to fire blight</td>
<td></td>
</tr>
<tr>
<td>Crataegus phaenopyrum 'Washington Lustre®'</td>
<td>Washington Lustre Hawthorne</td>
<td>4-8</td>
<td>20-25'</td>
<td>20-25'</td>
<td>Early, profuse blooms</td>
<td>Good choice for urban settings</td>
<td></td>
</tr>
<tr>
<td>Eucommia ulmoides</td>
<td>Hardy Rubber Tree</td>
<td>4-7</td>
<td>40-60'</td>
<td>30-40'</td>
<td>Elm-shaped green leaves</td>
<td>Full sun; Very tolerant of many soils and drought conditions</td>
<td></td>
</tr>
<tr>
<td>Ginkgo biloba 'Autumn Gold'</td>
<td>Autumn Gold Maidenhair Tree</td>
<td>3-8</td>
<td>40-60'</td>
<td>30-40'</td>
<td>Golden fall color</td>
<td>Full sun; very pH adaptable; air pollutant tolerant; durable tree for difficult landscape situations</td>
<td></td>
</tr>
<tr>
<td>Ginkgo biloba 'Magyar'</td>
<td>Magyar Maidenhair Tree</td>
<td>4-8</td>
<td>50-60'</td>
<td>25-30'</td>
<td>Brilliant gold fall color</td>
<td>Tolerant of urban conditions</td>
<td></td>
</tr>
<tr>
<td>Ginkgo biloba 'Princeton Sentry®'</td>
<td>Princeton Sentry Maidenhair Tree</td>
<td>4-8</td>
<td>60-70'</td>
<td>20-30'</td>
<td>Golden fall color</td>
<td>Durable tree for difficult landscape situations</td>
<td></td>
</tr>
<tr>
<td>Ginkgo biloba 'Saratoga'</td>
<td>Saratoga Maidenhair Tree</td>
<td>3-8</td>
<td>20'</td>
<td>15-20'</td>
<td>Soft-yellow fall color</td>
<td>Durable tree for difficult landscape situations</td>
<td></td>
</tr>
<tr>
<td>Gleditsia tria. inermis 'Imperial®'</td>
<td>Imperial Thornless Honeylocust</td>
<td>4-7</td>
<td>40-50'</td>
<td>20-30'</td>
<td>Yellow fall color; thornless and seedless</td>
<td>Full sun, urban tolerant</td>
<td></td>
</tr>
<tr>
<td>Gleditsia triacanthos inermis 'Skyline®'</td>
<td>Skyline Honeylocust</td>
<td>4-7</td>
<td>50-60'</td>
<td>35-40'</td>
<td>Compact dark green foliage; yellow fall color</td>
<td>Full sun, urban tolerant</td>
<td></td>
</tr>
<tr>
<td>Gymnocladus dioicus</td>
<td>Kentucky Coffee Tree</td>
<td>3-8</td>
<td>40-50'</td>
<td>20-25'</td>
<td>New foliage is pinkish-tinged turning dark bluish in summer; fragrant white flower panicles</td>
<td>Full sun; adapts to alkaline soils, city conditions and is drought tolerant</td>
<td></td>
</tr>
<tr>
<td>Liquidambar styraciflua 'Worplesdon'</td>
<td>Worplesdon Sweetgum</td>
<td>4-9</td>
<td>40'</td>
<td>25'</td>
<td>Twigs not corky and bark is smoother than the species; leaves are light, glossy green and have consistent fall coloring of apricot orange to purple</td>
<td>Excellent lawn or street tree, Site tolerant</td>
<td></td>
</tr>
<tr>
<td>Maackia amurensis</td>
<td>Amur Maackia</td>
<td>3</td>
<td>25'</td>
<td>20'</td>
<td>Medium green foliage; flowers are upright white clusters</td>
<td>Performs in well-drained, acid or alkaline soil; preferably sunny exposures; good candidate for street tree and container planting</td>
<td></td>
</tr>
<tr>
<td>Metasquoia glyptostroboides</td>
<td>Dawn Redwood</td>
<td>4-8</td>
<td>70-100'</td>
<td>25'</td>
<td>Emerging bright green needles turn yellow to golden red in fall; fissured, brown bark</td>
<td>Full sun; will tolerate most soil conditions</td>
<td></td>
</tr>
<tr>
<td>Botanical Name</td>
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<tr>
<td><em>Nyssa sylvatica</em></td>
<td>Black Tupelo</td>
<td>5</td>
<td>35'</td>
<td>20'</td>
<td>Dark green, glossy foliage; hot coppery red fall color</td>
<td>Prefers moist, well-drained acidic (pH 5.5 to 6.5), deep soils; acceptable street tree in residential areas; not for heavily polluted areas</td>
<td></td>
</tr>
<tr>
<td><em>Ostrya virginiana</em></td>
<td>American Hophornbeam</td>
<td>3-9</td>
<td>25-40'</td>
<td>20-30'</td>
<td>Yellow fall color</td>
<td>Tolerates dry, acidic and alkaline soils</td>
<td></td>
</tr>
<tr>
<td><em>Phellodendron</em> 'His Majesty™*</td>
<td>Corktree</td>
<td>4</td>
<td>40'</td>
<td>35'</td>
<td>Medium green foliage; bright yellow fall color; seedless fruits</td>
<td>Does well in many types of soils; full sun</td>
<td></td>
</tr>
<tr>
<td><em>Prunus</em> 'Accolade'</td>
<td>Accolade Flowering Cherry</td>
<td>4-8</td>
<td>20-25'</td>
<td>20-25'</td>
<td>Semi-double, 1-1 ½” early, pink blossoms in large drooping clusters</td>
<td>Good street tree</td>
<td></td>
</tr>
<tr>
<td><em>Prunus</em> 'Columnar Sargent Rancho®'</td>
<td>Columnar Sargent Rancho Flowering Cherry</td>
<td>4-8</td>
<td>20-30'</td>
<td>8-10'</td>
<td>Single deep pink clustered blooms; foliage is shiny green in summer and changes to bronze or red in the fall</td>
<td>Great for street plantings and narrow spaces</td>
<td></td>
</tr>
<tr>
<td><em>Prunus</em> 'Kwanzan'</td>
<td>Kwanzan Flowering Cherry</td>
<td>5-8</td>
<td>15-20'</td>
<td>15-20'</td>
<td>Double, deep rose-pink blooms, 1 ½ -2” in diameter</td>
<td>Good for streets and along walkways</td>
<td></td>
</tr>
<tr>
<td><em>Prunus virginiana</em> 'Canada Red'</td>
<td>Canada Red Common Chokecherry</td>
<td>2-8</td>
<td>20-25'</td>
<td>15-20'</td>
<td>New green foliage turns to dark maroon as leaves mature; long clusters of small, white flowers late April to early May</td>
<td>Tolerates clay and high pH</td>
<td></td>
</tr>
<tr>
<td><em>Pyrus calleryana</em> 'Aristocrat®'</td>
<td>Aristocrat Callery Pear</td>
<td>5-8</td>
<td>30-35'</td>
<td>20-30'</td>
<td>White flowers; waxy, green foliage; fall color is variable ranging from yellow to red</td>
<td>Adaptable to many different soils, tolerates dryness and pollution; not for urban planting</td>
<td></td>
</tr>
<tr>
<td><em>Pyrus calleryana</em> 'Autumn Blaze'</td>
<td>Autumn Blaze Callery Pear</td>
<td>5-8</td>
<td>30-35'</td>
<td>20-30'</td>
<td>White flowers, young leaves are reddish tinged, maturing to a medium to dark green; early bright crimson fall color</td>
<td>Adaptable to many different soils, tolerates dryness and pollution; not for urban planting</td>
<td></td>
</tr>
<tr>
<td><em>Pyrus calleryana</em> 'Red Spire'</td>
<td>Red Spire Callery Pear</td>
<td>5-8</td>
<td>30-35'</td>
<td>20-30'</td>
<td>Large white flowers; glossy green foliage; yellow to red fall color</td>
<td>Very adaptable to city conditions</td>
<td></td>
</tr>
<tr>
<td><em>Pyrus fauriei</em> 'Korean Sun™'</td>
<td>Korean Sun Pea Pear</td>
<td>4-8</td>
<td>15-20'</td>
<td>15-20'</td>
<td>Outstanding red fall color</td>
<td>Hardy</td>
<td></td>
</tr>
<tr>
<td><em>Pyrus ussuriensis</em></td>
<td>Harbin Pear</td>
<td>5-9</td>
<td>35-45'</td>
<td>30-35'</td>
<td>Lustrous dark green, regularly bristle-toothed leaves; leaves changing to red and reddish purple in fall; flowers faintly pink in bud, finally white</td>
<td>Good for colder climates</td>
<td></td>
</tr>
<tr>
<td><em>Quercus acutissima</em></td>
<td>Sawtooth Oak</td>
<td>5-9</td>
<td>35-45'</td>
<td>30-35'</td>
<td>Bark becomes furrowed with age</td>
<td>Tolerant of heat and wide soil ranges</td>
<td></td>
</tr>
<tr>
<td><em>Quercus bicolor</em></td>
<td>Swamp White Oak</td>
<td>4-8</td>
<td>50-60'</td>
<td>30-40'</td>
<td>Dark green leaves; yellow to red fall color; flaky bark</td>
<td>Excellent drought resistant yet thrives in wet soils</td>
<td></td>
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<tr>
<td><em>Quercus coccinea</em></td>
<td>Scarlet Oak</td>
<td>4-9</td>
<td>50-60'</td>
<td>30-40'</td>
<td>Displays best and longest period of brilliant scarlet fall color</td>
<td>Tolerate wet soils; prefers moist, rich, acid, well-drained soils; intolerant of high pH soils</td>
<td></td>
</tr>
<tr>
<td><em>Quercus ellipsoidalis</em></td>
<td>Northern Pin Oak</td>
<td>4-7</td>
<td>50-75'</td>
<td>30-40'</td>
<td>Fuzzy pink new leaves turn to glossy, bright green through summer; fall color is scarlet red</td>
<td>Salt, drought, and heat resistant but intolerant of flooding conditions</td>
<td></td>
</tr>
<tr>
<td><em>Quercus gambelii</em></td>
<td>Gambel Oak</td>
<td>3-8</td>
<td>15-30'</td>
<td>12-20'</td>
<td>Leaves are leathery and glossy green; fall color is mixed yellow, orange, and red</td>
<td>Full sun; tolerates dry conditions and alkaline soils</td>
<td></td>
</tr>
<tr>
<td><em>Quercus imbricaria</em></td>
<td>Shingle Oak</td>
<td>4-8</td>
<td>50-60'</td>
<td>20-30'</td>
<td>Red tinged new green leaves turn to russet red in fall</td>
<td>Prefers moist, rich, deep, well drained, acidic soil</td>
<td></td>
</tr>
<tr>
<td><em>Quercus macrocarpa</em></td>
<td>Bur Oak</td>
<td>3-8</td>
<td>60-70'</td>
<td>30-40'</td>
<td>Develops a massive trunk and broad crown; yellow fall color</td>
<td>Tolerant of most soils, withstands drought, wind, extreme cold, pollution, and salt</td>
<td></td>
</tr>
<tr>
<td><em>Quercus muehlenbergii</em></td>
<td>Chinkapin Oak</td>
<td>5-7</td>
<td>40-50'</td>
<td>40-50'</td>
<td>Dark green, sharp toothed leaves have a white cast underneath; yellow-orange fall color; ash-gray colored bark</td>
<td>Very tolerant of alkaline soils, native to Central Midwest and Eastern states</td>
<td></td>
</tr>
<tr>
<td><em>Sophora japonica</em></td>
<td>Japanese Pagodatree</td>
<td></td>
<td></td>
<td></td>
<td>Bright to medium green leaves</td>
<td>Prefers loamy well-drained soils; withstands heat and drought well; tolerant of polluted conditions</td>
<td></td>
</tr>
<tr>
<td><em>Tilia americana</em> 'Sentry'</td>
<td>Sentry Linden</td>
<td>3b-8(9)</td>
<td>60’-80’</td>
<td>½ - 2/3 of height</td>
<td>Dark green foliage above with paler green beneath, sometimes changing to pale yellow in fall</td>
<td>Prefers deep, moist, fertile soils; pH adaptable; full sun - partial shade</td>
<td></td>
</tr>
<tr>
<td><em>Tilia americana x euchlora</em></td>
<td>Redmond</td>
<td>3</td>
<td>35’</td>
<td>25’</td>
<td>Light green foliage; yellowish fall color</td>
<td>Readily transplanted; prefers moist, well-drained, fertile soil; full sun; pH adaptable; excellent shade tree for lawn</td>
<td></td>
</tr>
<tr>
<td><em>Tilia cordata</em> 'Greenspire®'</td>
<td>Greenspire Linden</td>
<td>3-8</td>
<td>40-50’</td>
<td>15-25’</td>
<td>Small fragrant flowers in June-July; cinnamon colored bark; yellow fall color</td>
<td>Does well in difficult conditions; widely used street tree</td>
<td></td>
</tr>
<tr>
<td><em>Tilia tomentosa</em> 'Sterling®'</td>
<td>Sterling Silver Linden</td>
<td>4-7</td>
<td>40-60’</td>
<td>20-30’</td>
<td>Dark green foliage with silver beneath; fragrant yellow blooms late summer; yellow fall color</td>
<td>Adapts to dry conditions</td>
<td></td>
</tr>
<tr>
<td><em>Ulmus japonica x wilsoniana</em> 'Morton'</td>
<td>Accolade Elm</td>
<td>4-7</td>
<td>70’</td>
<td>40-50’</td>
<td>Glossy dark green foliage turns golden yellow</td>
<td>Tolerates urban sites and hot, dry conditions suffering no leaf scorch or dieback; adapts to heavy and light soils once established</td>
<td></td>
</tr>
<tr>
<td>Botanical Name</td>
<td>Common Name</td>
<td>Zone</td>
<td>Height</td>
<td>Spread</td>
<td>Ornamental Traits</td>
<td>Site Preference</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ulmus 'Frontier'</td>
<td>Frontier Elm</td>
<td>5</td>
<td>40'</td>
<td>30'</td>
<td>Glossy green foliage; burgundy fall color</td>
<td>Tolerates urban sites and hot, dry conditions suffering no leaf scorch or dieback; adapts to heavy and light soils once established</td>
<td></td>
</tr>
<tr>
<td>Ulmus 'Commendation™'</td>
<td>Commendation Elm</td>
<td></td>
<td></td>
<td></td>
<td>Green summer foliage changing to yellow in fall; rapid growing</td>
<td>Tolerates urban sites and hot, dry conditions suffering no leaf scorch or dieback; adapts to heavy and light soils once established</td>
<td></td>
</tr>
<tr>
<td>Ulmus 'Triumph™'</td>
<td>Triumph Elm</td>
<td>5</td>
<td>55'</td>
<td>45'</td>
<td>Glossy dark green foliage; yellow fall color</td>
<td>Tolerates urban sites and hot, dry conditions suffering no leaf scorch or dieback; adapts to heavy and light soils once established</td>
<td></td>
</tr>
<tr>
<td>Ulmus 'New Horizon'</td>
<td>New Horizon Elm</td>
<td>3</td>
<td></td>
<td></td>
<td>Large, dark green leaves;</td>
<td>Tolerates urban sites and hot, dry conditions suffering no leaf scorch or dieback; adapts to heavy and light soils once established</td>
<td></td>
</tr>
</tbody>
</table>

References:
Carlton Plants Catalog 2001-2002
Dayton, Oregon


J. Frank Schmidt & Son Co., Bare Root Catalog 2001-2002
Boring, Oregon