**Introduction**
Most Iowans are aware of the environmental and psychological benefits street trees impart to our small towns and large cities. This awareness has inspired many communities to establish tree planting programs and form citizen-run tree boards to manage this valuable resource.

**Site Evaluation**
Not all sites are appropriate for trees. Before planting, envision how the mature tree will fit the site. Will the tree interfere with overhead utility lines, underground sewers, lighting, street traffic, or parking? Will the street be widened or disrupted in the future, and what problems will this pose for the tree? Will the tree create unusual maintenance problems (messy fruit, leaf litter, roosting site for birds, etc.)? And will the city budget allow for annual tree maintenance? Problems and conflicts will be lessened when communities choose attractive, durable trees, install them in appropriate sites, and provide necessary yearly maintenance.

**Tree Diversity**
There are aesthetic advantages to planting a street to a single species or cultivar. But painful lessons learned with American elms, and more recently with honeylocusts that became insect-ridden when planted in monocultures (with other honeylocusts) and with short-lived ‘Bradford’ pears, are reminders that tree diversity is a community’s best hedge against potential disaster. Communities can diversify street tree plantings by using a single species or cultivar on one street or block, and planting other species on adjacent streets. In newer developments with winding streets or in areas with existing trees, several kinds of trees might be combined, as long as the species are visually and spatially compatible. Mixed plantings, in which different tree species are arranged in orderly patterns, is another way to introduce diversity.

For maximum protection against insects, disease, or environmental stress, the urban/suburban tree population should reflect:

1. No more than 10 percent of any single tree species.
2. No more than 20 percent of species in any tree genus.
3. No more than 30 percent of species in any tree family.

**Recommended Trees**
As the Emerald Ash Borer (EAB) continues to infest and kill native ash species in the Midwest (Illinois, Indiana, Michigan, Ohio, and Pennsylvania), nursery and landscape professionals in Iowa appropriately are reducing or eliminating green, white, black, and blue ash from their inventories and designs, replacing them with a host of other useful, pest-resistant tree species. Many suitable alternatives to ash (*Fraxinus* spp.) can be found at local nurseries and garden centers and a sampling of those species and cultivars are described in this publication.

**Medium-to-Large Trees**

**Freeman maple** – *Acer × freemanii*

*Size:* 45 to 50 feet in height with ascending branches; usually taller than broad

*Hardiness zone:* 4

*Growth rate:* Fast

*Leaf characteristics:* Rich green summer leaves change to orange and red in fall.

*Remarks:* A durable group of maples considered hybrids of red maple (*Acer rubrum*) and silver maple (*Acer saccharinum*).

*Useful cultivars:* ‘DTR 102’ (Autumn Fantasy®), ‘Jeffersred’ (Autumn Blaze®), ‘Marmo’, and ‘Sienna’ (Sienna Glen®)
Sugar maples are best used in residential areas.

**Miyabe maple – Acer miyabei**
- **Size:** 40 to 45 feet in height, spreading 20 to 25 feet wide
- **Hardiness zone:** 4
- **Growth rate:** Medium
- **Leaf characteristics:** Medium green tatter-resistant foliage turns golden-yellow in the fall.
- **Remarks:** An excellent residential street tree with few (if any) significant insect and disease problems.
- **Useful cultivar:** ‘Morton’ (State Street®)

**Norway maple – Acer platanoides**
- **Size:** 40 to 50 feet in height with an equal spread
- **Hardiness zone:** 4
- **Growth rate:** Medium
- **Leaf characteristics:** Dark green summer leaves change to yellow in fall.
- **Remarks:** This species tolerates a variety of soil conditions but tends to be shallow-rooted and will heave sidewalks if planted too close. Purple-leaf cultivars have performed poorly in Iowa. Avoid planting where root growth is restricted.
- **Useful cultivars:** ‘Deborah’, ‘Ezestre’ (Easy Street™), ‘Fairview’, ‘Pond’ (Emerald Lustre™), ‘Emerald Queen’, and ‘Princeton Gold’
- **Related species:** *Acer truncatum* × *Acer platanoides* ‘Keithsform’ (Norwegian Sunset®)—35 feet tall and 25 feet wide, ‘Warrenred’ (Pacific Sunset®)—30 feet tall and 25 feet wide

**Red maple – Acer rubrum**
- **Size:** 40 to 50 feet in height with an equal spread
- **Hardiness zone:** 4
- **Growth rate:** Medium
- **Leaf characteristics:** Glossy green leaves turn shades of orange and red in fall.
- **Remarks:** Good residential yard tree. Does not tolerate high pH soils.
- **Useful cultivars:** ‘Magnificent Magenta’ (Burgundy Belle®), ‘Franksred’ (Red Sunset®), ‘Bailcraig’ (Scarlet Jewell™), ‘Frank Jr.’ (Redpointe™), ‘Brandywine’, ‘New World’, and ‘Somerset’

**Sugar maple – Acer saccharum**
- **Size:** 60 to 75 feet tall, spreading to two-thirds its height
- **Hardiness zone:** 4
- **Growth rate:** Slow to medium
- **Leaf characteristics:** Medium to dark green summer leaves turn yellow and orange tones in autumn.
- **Remarks:** Best used in residential areas. Not appropriate for planter boxes, narrow boulevards, or other restricted sites.
- **Useful cultivars:** ‘Autumn Splendor’, Commemoration’, ‘Morton’ (Crescendo™), ‘Endowment’, ‘Bailsta’ (Fall Fiesta®), ‘Green Mountain’, and ‘Legacy’

**Hackberry – Celtis occidentalis**
- **Size:** 40 to 60 feet in height with an equal spread; can grow to 100 feet tall
- **Hardiness zone:** 3
- **Growth rate:** Slow to medium
- **Leaf characteristics:** Dull green summer leaves become yellow-green in fall.
- **Remarks:** Not a prime specimen tree but will tolerate the harshest of urban conditions. Has several insect problems, but none are serious.
- **Useful cultivars:** ‘Chicagoland’, ‘Prairie Pride’, and ‘Windy City’

**Turkish filbert – Corylus colurna**
- **Size:** 45 to 60 feet tall, spreading 25 to 35 feet wide
- **Hardiness zone:** 4
- **Growth rate:** Medium
- **Leaf characteristics:** Deep green leaves turn yellow to purple in fall. Resistant to scorch.
- **Remarks:** A stately, symmetrical tree perfect for boulevard or use as a specimen tree. Somewhat difficult to transplant, and fruit may pose a litter problem.

**Ginkgo – Ginkgo biloba**
- **Size:** 50 to 80 feet tall, spreading 40 to 50 feet
- **Hardiness zone:** 4
- **Growth rate:** Slow
- **Leaf characteristics:** Interesting fan-shaped leaves are bright green in summer, changing to bright yellow in fall.
- **Remarks:** Female trees produce messy, rank smelling fruit and should be avoided. Pest-free. An outstanding residential tree.
- **Useful cultivars:** ‘Autumn Gold’, ‘The President’ (Presidential Gold™), ‘Princeton Sentry’, ‘Magyar’, and ‘Woodstock’ (Emperor™)

Use male (fruitless) ginkgo along busy streets.
Corktree – Phellodendron spp.
Size: 30 to 40 feet tall with an equal spread resulting in a broad, vase-shaped crown
Hardiness zone: 4
Growth Rate: Medium
Leaf characteristics: Medium green summer foliage turns yellow to bright yellow in autumn.
Remarks: Male (fruitless) selections (listed below) are favored. All selections are tough and durable with interesting corky bark.
Useful cultivars: ‘Macho’, ‘Longenecker’ (Eye Stopper™), and ‘His Majesty’

Kentucky coffeetree – Gymnocladus dioicus
Size: 50 to 75 feet tall, spreading 40 to 50 feet wide
Hardiness zone: 4
Growth rate: Medium
Leaf characteristics: Dark blue-green summer foliage turns yellow-brown in fall.
Remarks: Handsome bark, bold winter texture, and durability make this an excellent tree for urban areas. Falling fruit pods may pose a maintenance problem.

American hophornbeam – Ostrya virginiana
Size: 25 to 40 feet tall, spreading to 20 feet
Hardiness zone: 3
Growth rate: Slow
Leaf characteristics: Leaves are dark green in summer, turning yellow in fall.

Swamp white oak – Quercus bicolor
Size: 50 to 80 feet tall with an equal or greater spread
Hardiness zone: 3
Growth rate: Slow to medium
Leaf characteristics: Summer leaves are dark, lustrous green above, and whitish or velvety grayish green beneath. Fall color is usually yellow.
Remarks: Tough, drought tolerant tree, but leaves will become chlorotic (yellow) when planted on highly alkaline soils. Allow plenty of room for this tree to grow.

English oak – Quercus robur
Size: 40 to 60 feet tall with comparable spread
Hardiness zone: 5
Growth rate: Slow to medium
Leaf characteristics: Dark green summer leaves turn brown in fall and persist through winter.
Remarks: Tolerant of high pH and deicing salts. Persistent leaves create an interesting winter effect.

Red oak – Quercus rubra
Size: 60 to 75 feet tall and 40 to 50 feet wide
Hardiness zone: 4
Growth rate: Medium to fast
Leaf characteristics: Leaves are reddish when first emerging, dark shiny green in summer, finally turning russet-red to bright red in fall.
Remarks: Durable tree, tolerant of high pH soils. But red oak is extremely susceptible to the oak wilt fungus. Do not plant where red oak populations are high.

Hybrid oaks:
‘Clemons’ (Heritage®) – 50 feet tall and 40 feet wide
‘Long’ (Regal Prince®) – 45 feet tall and 20 feet wide
‘Crimschmidt’ (Crimson Spire™) – 45 feet tall and 15 feet wide

Thornless common honeylocust – Gleditsia triacanthos var. inermis
Size: Variable; 30 to 70 feet tall with comparable spread
Hardiness zone: 4
Growth rate: Medium to fast
Leaf characteristics: Small leaflets are bright green in summer, changing to clear yellow in fall.
Remarks: Minimal fall cleanup because of small leaves. Monoculture plantings may result in severe insect problems.
Useful cultivars: ‘Harve’ (Northern Acclaim®), ‘PNI 2835’ (Shademaster®), and ‘Skycole’ (Skyline®)
Lindens are excellent trees for boulevards, malls, or planters.

**American linden** – *Tilia americana*
*Size*: 60 to 80 feet tall, spreading to two-thirds of its height
*Hardiness zone*: 4
*Growth rate*: Medium
*Leaf characteristics*: Large, heart-shaped leaves are dark green in summer, changing to yellow-brown in fall.
*Remarks*: Neat, pyramidal growth habit makes this tree perfect for boulevard plantings.

**Littleleaf linden** – *Tilia cordata*
*Size*: 40 to 60 feet tall and 30 to 40 feet wide
*Hardiness zone*: 4
*Growth rate*: Medium
*Leaf characteristics*: Shiny green leaves turn a pale yellow in fall.
*Remarks*: Outstanding street, mall, or planter tree. Withstands moderate compaction but has poor salt and drought tolerance. Pleasing pyramidal form.
*Useful cultivars*: ‘Bailey’ (Shamrock®), ‘Corzam’ (Corinthian®), ‘Glenleven’, ‘June Bride’, and ‘Ronald’ (Norlin™)

**Silver linden** – *Tilia tomentosa*
*Size*: 40 to 60 feet tall and 30 to 50 feet wide
*Hardiness zone*: 5
*Growth rate*: Medium
*Leaf characteristics*: Leaves are medium green in summer, becoming golden-yellow in fall.
*Remarks*: Two-toned leaves create a pleasing effect. Heat and drought tolerant, and resistant to Japanese beetle.
*Useful cultivar*: ‘PNI 6051’ (Green Mountain®), ‘Sashazam’ (Satin Shadow™), and ‘Wandell’ (Sterling Silver®)

**American elm** – *Ulmus americana*
*Size*: 60 to 80 feet tall with arching limbs
*Hardiness zone*: 4
*Growth rate*: Fast
*Leaf characteristics*: Leaves are medium green in summer, becoming golden-yellow in fall.
*Remarks*: Several Dutch elm disease-tolerant or resistant selections can be found in the nursery trade.

**Related species:**
*Mongolian linden* – *Tilia mongolica* ‘Harvest Gold’ (40 feet tall and 25 feet wide)

**Silver linden** – *Tilia tomentosa*
*Size*: 40 to 60 feet tall and 30 to 50 feet wide
*Hardiness zone*: 5
*Growth rate*: Medium
*Leaf characteristics*: Leaves are medium green in summer, becoming golden-yellow in fall.
*Remarks*: Two-toned leaves create a pleasing effect. Heat and drought tolerant, and resistant to Japanese beetle.
*Useful cultivar*: ‘PNI 6051’ (Green Mountain®), ‘Sashazam’ (Satin Shadow™), and ‘Wandell’ (Sterling Silver®)

**American elm** – *Ulmus americana*
*Size*: 60 to 80 feet tall with arching limbs
*Hardiness zone*: 4
*Growth rate*: Fast
*Leaf characteristics*: Leaves are medium green in summer, becoming golden-yellow in fall.
*Remarks*: Several Dutch elm disease-tolerant or resistant selections can be found in the nursery trade.

**Other useful DED-resistant elms:**
‘Frontier’–45 feet tall and 25 feet wide
‘Pioneer’–50 feet tall and wide
‘Morton’ (Accolade™)–70 feet tall and 60 feet wide
‘Morton Glossy’ (Triumph™)–55 feet tall and 50 feet wide
‘New Horizon’–40 feet tall and 25 feet wide
‘Prospector’–40 feet tall and 30 feet wide
‘Discovery’–50 feet tall and 40 feet wide

Contact Organizations
Forestry Division/Iowa Department of Natural Resources
Wallace Building, 502 E. 9th St.
Des Moines, IA 50319-0034
(515) 281-5918
www.iowadnr.gov/forestry

Iowa State University Extension Distribution Center
Ames, IA 50011
(515) 294-5247
www.extension.iastate.edu/store

**Forestry**
Ames, IA 50011-3221
(515) 294-1168
www.forestry.iastate.edu

**Horticulture**
Ames, IA 50011
(515) 294-2751
www.yardandgarden.extension.iastate.edu

**Trees Forever**
770 7th Avenue, Marion, IA 52302
(319) 373-0650
www.treesforever.org

Prepared by Jeff Iles, extension horticulturist, in conjunction with the Iowa Urban and Community Forestry Council.

File: Forestry 4