

Recommended
Street Tree



guide

CITY OF CENTRAL POINT, OREGON



ACKNOWLEDGMENTS

The City of Central Point is indebted to Sue Anne Frank, the University of Washington Center for Urban Horticulture, Puget Sound Power and Light Company, and the Washington State Department of Natural Resources for the format of the tree profiles and for some of the information which was derived from their publication, "Urban Forestry Notebook", and adapted to this region. We would also like to acknowledge the work done by January Jennings, Donn Todt, Bryan Nelson, and Robbin Pierce in developing a version of the document which has provided a model for the City of Central Point.

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Central Point's Urban Forest

Diversity in an urban forest is an index to its health. Since arboreal diversity is a goal, the City of Central Point has created this guide to the many species and varieties that are best suited for planting along the City's streets or anywhere in the public right-of-way. These trees have been selected because they generally have a conservative, containable root system. In addition, they are less messy with less seed or fruit drop than many species. They also require limited care and pruning and have good resistance to most pests and diseases. Lastly, they provide shade and help create an attractive and healthy neighborhood environment.

The Recommended Street Tree List is not exhaustive. There are many additional trees that have great value as street trees. Many of these are described in the publications listed in the reference section. Trees other than those listed should be chosen to fit local conditions. The use of trees on the prohibited list for street trees is subject to approval by the Planning Commission.

Young Trees Need Special Care

The Recommended Street Tree List should be an aid to tree selection, but a healthy urban forest depends on more than correct selection. City trees depend on consistent care from the time they are planted.

Young trees are especially vulnerable under urban conditions. They are fragile and can be easily damaged. For protection, most newly-planted trees should be staked for only the first year. New trees should be deeply watered once a week for the first two summers and less often over the next two years. This will promote deep rooting as the tree will seek water further down in the soil. Fertilizers, too, should be phased out over a few years. Both over-fertilizing and over-watering lead to shallow-rooted trees which require regular "handouts" in order to survive.

Proper pruning of street trees when they are young is also important. City trees must co-exist with traffic, powerlines, buildings, and pedestrians. City ordinances require branches to be trimmed eight feet above sidewalks, thirteen feet above local streets, fifteen feet above collector streets, and eighteen feet above arterial streets. Correct pruning is the best thing that can be done for a tree. Consult the references listed for more information about proper pruning techniques.

Central Point Street Tree Standards

APPROVAL STANDARDS: All development fronting on public or private streets shall be required to plant street trees in accordance with the following standards and chosen from the recommended list of street trees.

A. The species of the street trees to be planted shall be chosen from the approved street tree list unless approval of another species is given by the Central Point planning commission.

B. Street trees shall be a minimum of one and one-half inches in caliper measured at six inches above ground level. All trees shall be healthy grown nursery stock with a single straight trunk, a well-developed leader with tops and roots characteristic of the species cultivar or variety. All trees must be free of insects, diseases, mechanical injury, and other objectionable features when planted.

C. Small or narrow stature trees (under twenty-five feet tall and less than sixteen feet wide branching) should be spaced no greater than twenty feet apart; medium sized trees (twenty-five feet to forty feet tall, sixteen feet to thirty-five feet wide branching) should be spaced no greater than thirty feet apart; and large trees (over forty feet tall and more than thirty-five feet wide branching) should be spaced no greater than forty feet apart. Within residential developments, street trees should be evenly spaced, with variations to the spacing permitted as approved by the city for specific site limitations and safety purposes. Within commercial and industrial development staggered, or irregular spacing is permitted, as may be approved by the Central Point planning commission.

D. When located adjacent to a local residential street or minor collector street, street trees shall be planted within a curb-side landscape strip measuring a minimum of three feet in width. Street trees adjacent to major collector streets or arterial streets shall be placed a minimum of four feet from the back edge of the sidewalk. In no case shall a tree be planted closer than two and one-half feet from the face of a curb.

E. Street trees shall not be planted within ten feet of fire hydrants, utility poles, sanitary sewer, storm sewer or water lines, or within twenty feet of street light standards or street intersections, or within five feet of an existing street tree. Variations to these distances may be granted by the public works director and as may be required to ensure adequate clear vision.

F. Existing street trees shall be retained unless approved by the city manager for removal during site development or in conjunction with a street construction project. Sidewalks of a variable width and elevation may be utilized as approved by the city manager or his designee to save existing street trees. Any street tree removed through demolition or construction within the street right-of-way shall be replaced at a location approved by the city with a tree, or trees, of similar value. As an alternative the property owner may be required to pay to the city an amount sufficient to fund the planting and establishment by the city of a tree of similar value. The value of the removed tree shall be calculated using the methods set forth in the edition then in effect of the "Guide for Plant Appraisal" published by the International Society of Arboriculture Council of Tree Landscape Appraisers. The developer or applicant shall be responsible for the cost of the planting, maintenance and establishment of the replacement tree.

G. Sidewalk cuts in concrete for tree planting shall be a minimum of four feet by six feet, with the long dimension parallel to the curb.

H. Street trees, as they grow, shall be pruned to provide at least eight feet of clearance above sidewalks and thirteen feet above local streets, fifteen feet above collector streets, and eighteen feet above arterial streets. This provision may be waived in the case of newly planted trees so long as they do not interfere with public travel, sight distances, or endanger public safety as determined by the city.

I. Maintenance of street trees, other than those located in the downtown core area (defined as that area bordered by Manzanita, Oak, Front and 6th Streets) shall be the continuing obligation of the abutting property owner.

Planting Instructions

Proper planting of street trees will help assure their survival and get them off to a good start.

1. HOLE SIZE: Each hole should be about twice the diameter of the container or root ball. In soils that have good structure, the planting hole need only be deep enough to hold the root ball. Plant “high” or “proud” in all but sandy soils. The sides and bottom of the hole should be roughened with a shovel to intermingle the backfill and local native soil and to provide easier access for developing roots.

2. SOIL IMPROVEMENT: For most street tree planting, a back fill soil mix composed of 25% humus or soil amendment and 75% tree pit soil is recommended. In heavier clay soils, amendments are not recommended.

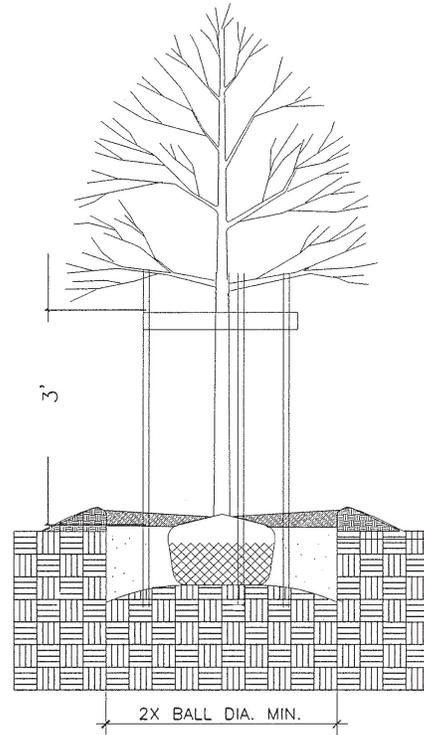
3. PLANTING: Place the tree in the hole with the roots spread in a natural position. The tree should stand at about the same depth that it grew in the nursery. Work the backfill soil firmly around the roots, watering it, if necessary, to settle and fill pockets. Fill the hole leaving a saucer-like depression to retain water. Handle balled and burlapped (B&B) plants by the ball only. The burlap should be untied from the tree trunk and tucked well below the soil level, but not completely removed. Remove all strings and tags from the trunk and branches. Wire cages should be flattened or clipped only after tree is in hole.

4. SELECTED PRUNING: Pruning may be necessary. B&B trees have often been pre-pruned by the nursery at the time of digging. Prune only to keep the normal shape of the tree. Cut just above a bud or close to a twig, branch, or trunk. Try to form a well developed crown with a strong leader and wide-angled branches.

5. FERTILIZER (OPTIONAL): When the hole for the tree is about 2/3 backfilled, slow-release fertilizer tablets may be evenly distributed around the rootball. The tablets should have an analysis of 20-5-10 N-P-K or similar balance.

6. STAKING: In many cases staking of new trees is unnecessary. Staking is beneficial in areas of potential vandalism, high winds and/or wet soil. Trees should be double staked with 7' long stakes having a minimum diameter of two inches. The stakes should extend four to five feet above the ground. Ties should be one inch canvas web belting or rubber, looped loosely around the trunk in a figure-eight pattern and nailed to the tree stakes. The tree should remain staked for no more than one year.

7. WATERING: Water new trees once a week for the first two summers and less often over the next two years. Deep waterings should be applied slowly within the area under the spread of the trees crown and just beyond. Short frequent waterings wet only the top few inches of soil and encourage roots to grow near the surface. Ask at your local nursery if you have questions about planting, pruning, feeding or watering your new trees.



RECOMMENDED STREET TREES

Scientific Name	Common Name	PAGE
<i>Acer buergerianum</i>	Trident Maple	17
<i>Acer campestre</i>	Hedge Maple	18
<i>Acer freemanii</i>	'Armstrong' Maple	19
<i>Acer ginnala</i>	Amur Maple	20
<i>Acer grandidentatum</i>	Bigtooth Maple	21
<i>Acer griseum</i>	Paperbark Maple	22
<i>Acer platanoides</i>	Norway Maple	23
<i>Acer rubrum</i>	Red Maple	24
<i>Acer saccharum</i>	Sugar Maple	25
<i>Acer truncatum</i>	Purplebow Maple, Shantung Maple	26
<i>Amelanchier arborea</i>	Hybrid Serviceberry	27
<i>Carpinus betulus</i> var. 'Fastigata'	European Hornbeam var. 'Fastigata'	28
<i>Carpinus caroliniana</i>	American Hornbeam	29
<i>Carpinus japonica</i>	Japanese Hornbeam	30
<i>Cercis canadensis</i>	Eastern Redbud	31
<i>Chitalpa tashkentensis</i>	Pink Dawn, White Cloud	32
<i>Cladrastis lutea</i>	Yellowwood	33
<i>Cornus kousa</i>	Kousa Dogwood	34
<i>Crataegus laevigata</i> var. 'Paul's Scarlet'	Paul's Scarlet Hawthorn	35
<i>Crataegus phaenopyrum</i>	Washington Thorn	36
<i>Ginkgo biloba</i>	Ginkgo/Maidenhair Tree	37
<i>Gleditsia triacanthos</i> var. <i>inermis</i>	Thornless Honeylocust	38
<i>Gymnocladus dioicus</i>	Kentucky Coffee Tree	39
<i>Koelreuteria paniculata</i>	Goldenrain Tree	40
<i>Lagerstroemia indica</i>	Crapemyrtle	41
<i>Magnolia grandiflora</i>	Southern Magnolia	42
<i>Magnolia kobus</i>	Kobus Magnolia	43

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Scientific Name	Common Name	PAGE
<i>Malus spp.</i>	Ornamental Crabapples	44
<i>Nyssa sylvatica</i>	Tupelo/Sourgum	45
<i>Oxydendrum arboreum</i>	Sourwood	46
<i>Parrotia persica</i>	Persian Parrotia	47
<i>Pistache chinensis</i>	Chinese Pistache	48
<i>Pyrus calleryana vars.</i>	Callery Pear	49
<i>Quercus chrysolepis</i>	Canyon Live Oak	50
<i>Quercus coccinea</i>	Scarlet Oak	51
<i>Quercus robur</i>	English Oak	52
<i>Quercus rubra</i>	Red Oak	53
<i>Quercus suber</i>	Cork Oak	54
<i>Sorbus aucuparia</i>	European Mountain Ash	55
<i>Styrax japonicus</i>	Japanese Snowbell	56
<i>Taxodium distichum</i>	Baldcypress	57
<i>Tilia cordata</i>	Littleleaf Linden	58
<i>Ulmus parvifolia</i>	Chinese Elm	59
<i>Zelkova serrata</i>	Zelkova	60

Tree Shapes and Sizes to Suit the Site

Consider the size and shape of trees for optimal placement in the landscape. The first consideration in selecting a tree is that the size and shape of the tree should suit the specific location in which it is planted. The following lists will help you select an appropriate tree for a particular circumstance.

PYRAMIDAL

Many trees that appear upright when young become pyramidal with age. As they mature, the lower branches get larger and begin to droop with weight. These lower branches should not interfere with vehicular or pedestrian traffic so pruning is sometimes needed. Although pruning may be required, some pyramidal trees nevertheless make good street trees. Medium to large pyramidal trees should not be planted under power lines.

EXAMPLES OF TREES HAVING A PYRAMIDAL SHAPE

SMALL TO MEDIUM TREES

Sourwood
Kobus Magnolia

MEDIUM TO LARGE TREES

Ginkgo
Evergreen Magnolia
Tupelo or Sour Gum
Littleleaf Linden



ROUNDED TO SPREADING

Small, round trees are preferred for some sites under utility lines while large, round trees are preferred for sites needing a dramatic impact on the streetscape. Many large, round trees have multiple tops which can be pruned to form a “V-shape” around powerlines as the trees mature. Wide-spreading trees require more thought before they are chosen as street trees. They either need to be placed further back from the street or need to be pruned with care to secure clearance over the roadway.

EXAMPLES OF TREES HAVING A ROUNDED TO SPREADING SHAPE

SMALL TO MEDIUM TREES

Hedge Maple
Amur Maple
Eastern Redbud
Crapemyrtle
Ornamental Crabapple
Goldenrain Tree
Variegated Box Elder

MEDIUM TO LARGE TREES

Norway Maple
Thornless Honeylocust
Canyon Live Oak
Scarlet Oak



OVAL

An upright oval shape is a good shape for a street tree, reaching up toward the sky without too much competition with vehicular traffic. Some oval-shaped trees reach to a lofty height with a single center trunk and are therefore unsuitable for planting underneath powerlines. Others having multiple leaders may be pruned to a 'U-shape' around powerlines.

EXAMPLES OF TREES HAVING AN OVAL SHAPE

SMALL TO MEDIUM TREES

- Trident Maple
- Kousa Dogwood
- American Hornbeam
- Washington Thorn
- Paperbark Maple
- Chinese Pistache

MEDIUM TO LARGE TREES

- Red Maple
- Sugar Maple
- Red Oak



COLUMNAR

Columnar trees are frequently used because there is not room enough for other tree types. Narrow branch angles result from branches that grow up instead of out. Branches of this type are structurally less strong than wider angled branches. Columnar trees should not be planted directly under powerlines.

EXAMPLES OF TREES HAVING A COLUMNAR SHAPE

SMALL TO MEDIUM TREES

- Upright Goldenrain
- Flowering Crabapple vars.
- Flowering Cherry vars.
- Flowering Pear vars.

MEDIUM TO LARGE TREES

- Upright English Oak
- 'Armstrong' Red Maple
- 'Olmsted' Norway Maple
- 'Columnar' Sugar Maple
- Columnar Norway Maple
- Carpinus betula 'Fastigiata



VASE-SHAPED

A vase-shaped (or V-shaped) tree is a favored form because the branches arch to form a shady canopy over both streets and sidewalks while staying out of the way of traffic and powerlines. Note: Some of the trees listed below naturally develop an upright-oval shape. However, pruning the lower limbs gives a vase shaped form.

EXAMPLES OF TREES HAVING A VASE SHAPE

SMALL TO MEDIUM TREES

- European Hornbeam
- 'Kwanzan' Flowering Cherry
- Eastern Redbud

MEDIUM TO LARGE TREES

- Chinese Elm
- Zelkova
- American Yellowwood
- Kentucky Coffee Tree
- Persian Parrotia
- California Black Oak



Trees for Urban Conditions

City trees must contend with tremendous biological, physical, and chemical stresses: too much water or too little; hot summer temperatures; polluted air, water and soil; physical damage from vehicles and vandalism. Listed below are species that the Tree Commission recommends for withstanding the stress of urban conditions in downtown locations.

Red Maple	Hedge Maple
Norway Maple	Amur Maple
Ginkgo	Goldenrain Tree
Thornless Honeylocust	Red Oak
Littleleaf Linden	Flowering Pear
European Hornbeam	Kentucky Coffee Tree

Drought Tolerant Trees

The following is a list of trees on the Recommended Street Tree List that are somewhat drought tolerant **once they are well established in the landscape**.

Trident Maple	Norway Maple
Hedge Maple	'Green Mountain' Sugar Maple
Amur Maple	Chinese Pistache
Washington Thorn	Canyon Live Oak
Goldenrain Tree	Chinese Elm
Crapemyrtle	Zelkova
Flowering Crabapple	
Flowering Pear	
Littleleaf Linden	

Solar Friendly Trees

These trees allow the maximum amount of solar radiation during the late autumn, winter and early spring.

Trident Maple	Amur Maple variety 'Flame'
Paperbark Maple	Crapemyrtle
'Autumn Flame' Red Maple	Zelkova
'Crimson King' Norway Maple	Eastern Redbud
'Schlesinger' Red Maple	American Hornbeam
'Legacy' Sugar Maple	'October Glory' Red Maple
Honeylocust	'Green Mountain' Sugar Maple
Sourgum	Ginkgo
Sourwood	

Trees with Seasonal Interest

BROADLEAF EVERGREEN TREES

Southern Magnolia

Canyon Live Oak

TREES WITH CONSPICUOUS FLOWERS

Eastern Redbud

Flowering Pears

Kousa Dogwood

Flowering Cherries

Washington Hawthorne

American Yellowwood

Goldenrain Tree

Southern Magnolia

Crapemyrtle

Chitalpa 'Pink Dawn', 'White Cloud'

Flowering Crabapples

TREES THAT USUALLY HAVE GOOD AUTUMN COLOR

(R - Red, Y - Yellow, O - Orange, P - Purple)

Trident Maple	RYO	'Sunburst' Honeylocust	Y
Washington Hawthorn	Y	Ginkgo	Y
Hedge Maple	Y	Chinese Pistache	RYP
Amur Maple	RO	Scarlet Oak	RP
Norway Maple	Y	Red Oak	RY
Eastern Redbud	Y	Baldcypress	O
Kousa Dogwood	YO	Paperbark maple	R
Crapemyrtle	RY	Chinese Elm	Y
Flowering Pear	RY	American Hornbeam	YO
Red Maple	RY	Tupelo	YO
Sugar Maple	RO		
Sourwood	OR		

Trees And Powerlines

Many power outages are caused by trees. The City performs line clearance where tree limbs are in close proximity to live wires. You may assist the utility workers and the community by planting trees that cause the least interference with wires. One solution is to plant smaller trees that top out at or below the height of the lowest live electrical wire. These live wires are 18 feet or more above the ground. Another solution is to plant trees that naturally fork into a multi-trunked form. These trees may be easily pruned and shaped away from overhead wires. Avoid planting large, single trunked or pyramidal shaped trees directly under power lines. Select more appropriate trees by using this list.

SMALL STATURE TREES THAT USUALLY REMAIN BELOW POWER LINES:

Trident Maple
Kousa Dogwood
American Hornbeam
Washington Thorn
Sourwood
Hedge Maple
Amur Maple
Eastern Redbud
Goldenrain Tree
Crapemyrtle
Flowering Crabapple
Hybrid Serviceberry
Flowering Cherry

LARGER STATURE TREES WITH MULTILIMB STRUCTURE:

Norway Maple
Red Maple
Sugar Maple
European Hornbeam
Thornless Honeylocust
Chinese Pistache
California Black Oak
Red Oak
Chinese Elm
Zelkova
Persian Parrotia
Chitalpa 'Pink Dawn', 'White Cloud'

Parking Lot Trees

Parking lots provide some the most challenging locations in which to grow trees. The following species perform better than most in these inhospitable situations. Consult the 'Site Design and Use Standards' for details as to the provision of adequate root room and protection from vehicles.

Red Oak

Canyon Live Oak
Amur Maple
Norway Maple
Red Maple
Hedge Maple
Ornamental Pear
Zelkova

Goldenrain Tree
Chinese Pistache
European Hornbeam
Thornless Honeylocust
'Kwanzan' Flowering Cherry
Crapemyrtle

MINIMUM PARKROW TREE REQUIREMENTS

4 Foot Parkrow

Amur Maple (*Acer ginnala*)
Serviceberry (*Amelanchier arborea*)
Upright European Hornbeam (*Carpinus betulus* var. 'Fastigata')
Eastern Redbud (*Cercis canadensis*)
Kousa Dogwood (*Cornus kousa*)
Paul's Scarlet Hawthorn (*Crataegus laevigata*)
Washington Thorn (*Crataegus phaenopyrum*)
Goldenrain (*Koelreuteria paniculata*)
Crapemyrtle (*Lagerstroemia indica*)
Kobus Magnolia (*Magnolia kobus*)
Ornamental Flowering Crabapples (*Malus* spp.)
Sourwood (*Oxydenrum arboreum*)
Japanese Snowbell (*Styrax japonicus*)

5 Foot Parkrow

Bigtooth Maple (*Acer grandidentatum*)
Trident Maple (*Acer buergeranum*)
Paperbark Maple (*Acer griseum*)
Hedge Maple (*Acer campestre*)
American Hornbeam (*Carpinus caroliniana*)
Persian Parrotia (*Parrotia persica*)
Chinese Pistache (*Pistache chinensis*)
Flowering Cherries and Plums (*Prunus* spp.)
Flowering Pears (*Pyrus calleryana*)

6 Foot Parkrow

'Armstrong' Maple (*Acer freemanii*)
Yellowwood (*Cladrastis lutea*)
Summit Ash (*Fraxinus pennsylvanica* 'Summit')
Ginkgo (*Ginkgo biloba*)
Honeylocust (*Gleditsia triacanthos inermis*)
Kentucky Coffeetree (*Gymnocladus dioicus*)
Tupelo (*Nyssa sylvatica*)
Scarlet Oak (*Quercus coccinea*)
Canyon Live Oak (*Quercus chrysolepis*)
English Oak (*Quercus robur*)
Northern Red Oak (*Quercus rubra*)
Zelkova (*Zelkova serrata*)

7 Foot Parkrow and 8 Foot Parklow

Bald Cypress (*Taxodium distichum*)
Red Maple (*Acer rubrum* vars.)
Sugar Maple (*Acer saccharinum*)
Southern Magnolia (*Magnolia grandiflora*)
Oaks (*Quercus* spp.)
Idaho Locust (*Robinia pseudoacacia idahoensis*)
Littleleaf Linden (*Tilia cordata*)
Chinese Elm (*Ulmus parvifolia*)
Norway Maple (*Acer platanoides*)

SYMBOLS

TRIDENT MAPLE
Acer buergerianum

Size & Rate of Growth
25 to 35 feet in height with a 20 to 30 foot spread. Moderate growth initially, becoming slower growing as it ages.

Ornamental Features
An attractive, oval, rounded form. Thick, shiny leaves. Good autumn color.

Use
Suitable for planting under power lines. Has been extensively used as street tree in Japan.

Culture
Full sun. Well drained soil. Fairly tolerant of urban conditions.

Drought Tolerance
Somewhat drought tolerant once established.

Pruning
Some pruning may be necessary to establish good structure.

Insects & Diseases
None noted.

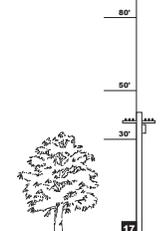
Maintenance Issues
See pruning. Root system less invasive than larger maples. Fewer problems with sidewalk lifting.

Native Range
China and Japan.

Varieties & Cultivars
Numerous varieties and cultivars are in existence but difficult to obtain.

Specimen Location
Upper duck pond turnaround near street, Lithia Park.

Notes
May be somewhat difficult to obtain.



80'
50'
30'

17

RECOMMENDED STREET TREES
Prepared by the Ashland Tree Commission

Leaf Type – The generalized leaf shape.

Fruit Type – The generalized category.

Drought Tolerance

Exposure

Height – Shown in relationship to a telephone pole. Specific heights are listed in the SIZE AND RATE OF GROWTH category for each plant. Tree shape is generalized.

Leaf Type



simple untoothed



simple toothed



simple lobed



compound



needle-like



scale-like

Fruit Type



balls & capsules



cone



winged



pod



nut



acorn



fleshy



berry

Drought Tolerance



good/very good



moderate



poor/fair

Exposure



full sun



partial shade

TRIDENT MAPLE

Acer buergerianum

Size & Rate of Growth

25 to 35 feet in height with a 20 to 30 foot spread. Moderate growth initially, becoming slower growing as it ages.

Ornamental Features

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Use

Suitable for planting under power lines. Has been extensively used as street tree in Japan.

Culture

Full sun. Well drained soil. Fairly tolerant of urban conditions.

Drought Tolerance

Somewhat drought tolerant once established.

Pruning

Some pruning may be necessary to establish good structure.

Insects & Diseases

None noted.

Maintenance Issues

See pruning. Root system less invasive than larger maples. Fewer problems with sidewalk lifting.

Native Range

China and Japan.

Varieties & Cultivars

Numerous varieties and cultivars are in existence but difficult to obtain.

Notes

May be somewhat difficult to obtain.



80'

50'

30'

17

HEDGE MAPLE

Acer campestre

Size & Rate of Growth

30 to 40 feet in height with a spread of 30 to 35 feet. Moderate growth rate.

Ornamental Features

Rounded and dense. Leaves appear healthy throughout summer and early fall. Yellow autumn color.

Use

A good choice for planting under utility wires. One of the most adaptable small trees.

Culture

Full sun or light shade. Easily transplanted. pH adaptable. Air pollution tolerant.

Drought Tolerance

Tolerant of dry soils and compaction.

Pruning

Will tolerate severe pruning. Good compartmentalization of wounds. Pruning in winter or spring results in loss of sap. This should be avoided.

Insects & Diseases

Less subject to insects than many maple species.

Maintenance Issues

Pruning required to keep branches well above roadways.

Native Range

Europe, Near East, North Africa.

Varieties & Cultivars

Numerous varieties recognized. 'Postelense' is a shrub form with leaves that are golden yellow when young. 'Evelyn' has improved branch angles for street tree planting.



80'

50'

30'

18

'ARMSTRONG', 'AUTUMN BLAZE' MAPLE

Acer x freemanii vars

Size & Rate of Growth

35 to 50 feet tall and variable spread. Moderate to rapid growth.

Ornamental Features

Hybrid between Red and Silver Maple. Combines the drought tolerance of the Silver Maple with the fall color and superior branching habit of the Red Maple.

Use

Root system is adapted to urban conditions.

Culture

Prefers full sun but will adapt to partial shade.

Drought Tolerance

Moderate. Requires summer water.

Pruning

Requires pruning to develop strong structure.

Insects & Diseases

Cottony scale.

Maintenance Issues

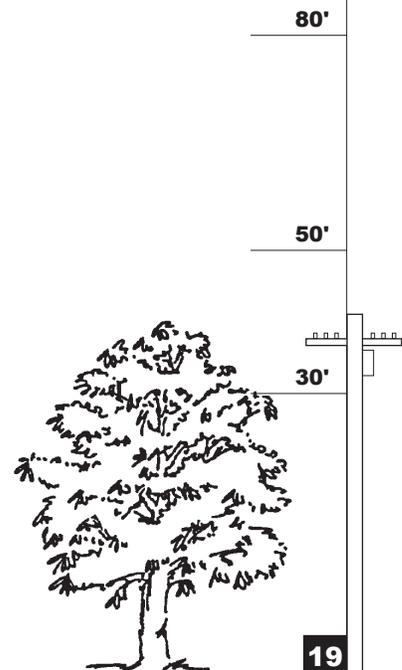
Strong root systems may heave sidewalks.

Native Range

Hybrid.

Varieties & Cultivars

'Armstrong' has an upright columnar habit. 'Autumn Blaze' is broadly oval. Both have outstanding orange-red fall foliage.



AMUR MAPLE

Acer ginnala

Size & Rate of Growth

15 to 20 feet tall with an equal spread; moderate growth.

Ornamental Features

Dense shrub or small multi-stemmed tree with a rounded crown. Glossy green leaves have three small lobes. Fall color will vary depending on plant. Small yellow flowers are fragrant in early spring; followed by red winged seeds.

Use

Small specimen. Suitable for planting under wires.

Culture

Needs full sun to exhibit best fall color but will tolerate light shade. Adaptable to a wide range of soil conditions. Easily transplanted.

Drought Tolerance

Very good.

Pruning

Tolerates heavy pruning. May require pruning to maintain single-stemmed habit. Nurseries are growing single trunk specimens for street tree use.

Insects & Diseases

None serious.

Maintenance Issues

See pruning.

Native Range

China, Mongolia, Korea, Japan.

Varieties & Cultivars

Acer ginnala var. *semenowii* - a shrubbier type which does well as a screen or barrier. Lustrous, dark green leaves turn red-purple in fall. 'Flame' - consistently good autumn color.



80'

50'

30'



20

BIGTOOTH MAPLE

Acer grandidentatum

Size & Rate of Growth

20 to 30 feet; slow to moderate growth rate.

Ornamental Features

Good autumn color.

Use

As a small street tree. Good branch structure for arching over sidewalks and roadways.

Culture

Full sun to part-shade. Needs good drainage. Adaptable to many soil types.

Drought Tolerance

Drought tolerant once established.

Pruning

Minimal pruning needed.

Insects & Diseases

Occasional leaf spot. Not seriously damaging. Possible sun scald on South and West sides of young trees if in sufficiently irrigated during establishment.

Maintenance Issues

None.

Native Range

South Idaho to Mexico. Most common is North Utah.

Varieties and Cultivars

'*Rocky Mt. Glow*' selected for good orange-red autumn color.

Note

A smaller, western version of the Eastern Sugar maple.



80'

50'

30'

21

PAPERBARK MAPLE

Acer griseum

Size & Rate of Growth

20 to 30 feet in height with a 10 to 20 foot spread.

Ornamental Features

Upright oval or rounded form. Small trifoliate leaves turn red in autumn. Extremely attractive, peeling, reddish-brown bark.

Use

Small street tree.

Culture

Full sun. Prefers well drained, moist soil but performs well in clay soils also.

Drought Tolerance

Moderate. Does not tolerate extended drought especially in poor soil.

Pruning

Often needs pruning to encourage a central leader for street tree use.

Insects & Diseases

Possible sun scald damage to young trees if not consistently irrigated.

Maintenance Issues

See pruning.

Native Range

China.



80'

50'

30'

22

NORWAY MAPLE

Acer platanoides

Size & Rate of Growth

Normally 40 to 50 feet tall, with a spread 2/3 of, or equal to, its height; moderate growth.

Ornamental Features

Large tree with dense, rounded crown. Leaves are four to seven inches wide. Individual flowers are small but form showy clusters. Purple foliated varieties may be used as accents along the streetscape. Should be used cautiously due to aggressive surface root habit and frequent aphid infestations.

Use

Large street tree.

Culture

Prefers full sun. Tolerant of wide range of soil types and urban conditions.

Drought Tolerance

Moderate.

Pruning

Needs little pruning, except to keep lower branches clear of street right-of-way.

Insects & Diseases

Aphid infestations, especially in the spring, and verticillium wilt.

Maintenance Issues

This tree has dense surface rooting. Aphid infestations produce honeydew which can drip onto cars and sidewalks. May be suitable in the proper location. Other trees should be considered. Varieties are better suited than the species. Produces abundant seedlings – nuisance.

Native Range

Europe, northern Turkey, northern Iran.

Varieties & Cultivars

'Columnare' - smaller foliage, slower growing with narrow outline. 'Crimson King' - slower growing and maintains purple foliage throughout the growing season. 'Emerald Queen' - glossy dark green foliage, upright-oval outline. 'Schwedleri' - wide spreading with purplish-red spring foliage, turning dark green in summer.



80'

50'

30'

23

RED MAPLE

Acer rubrum

Size & Rate of Growth

40 to 60 feet tall in cultivation with a variable spread; height may reach 120 feet in the wild; moderate to fast growth.

Ornamental Features

Upright oval habit develops with age. Red dominates the features of this tree. Twigs have a reddish cast. Buds are red, as are the emerging leaves. Fall color is variable from tree to tree, but is generally a rich scarlet color. Flowers on female trees are showy for maples - appearing red in March before the leaves emerge. Winged fruit is often red, maturing to brown.

Use

Root system is adapted to urban conditions.

Culture

Prefers full sun but will adapt to partial shade. Tolerates a variety of soil conditions, including wet soils.

Drought Tolerance

Poor to moderate. Requires summer water.

Pruning

Corrective pruning needed to remove narrow branch angles.

Insects & Diseases

Cottony Scale.

Maintenance Issues

Strong root system may heave sidewalks.

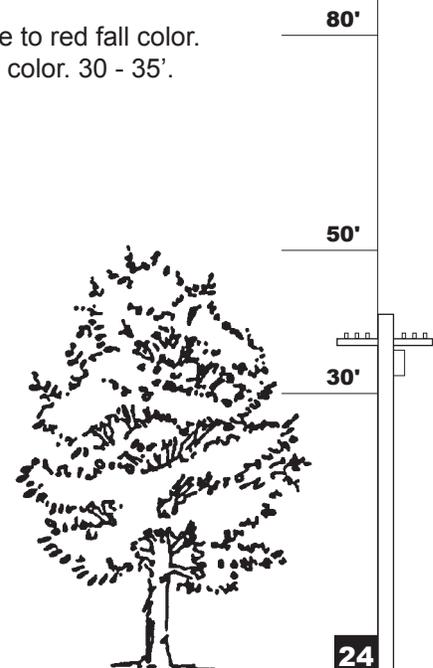
Native Range

Eastern and central United States.

Varieties & Cultivars

'Columnare'. 'October Glory' - shiny leaves which show intense orange to red fall color.

'Red Sunset' - pyramidal to rounded outline. Brilliant orange to red fall color. 30 - 35'.



24

SUGAR MAPLE

Acer saccharum

Size & Rate Of Growth

50 to 80 feet in height with a spread of from 30 to 50 feet. Slow to moderate growth rate.

Ornamental Features

Beautiful irregular oval form and excellent orange autumn color.

Use

A good street tree if given enough root room and protected from hot exposures.

Culture

Full sun to light shade. Moist well drained soil is best. Not suitable for highly urban conditions.

Drought Tolerance

Has some drought tolerance once established.

Pruning

Not usually required.

Insects & Diseases

Occasional aphid problems.

Maintenance Issues

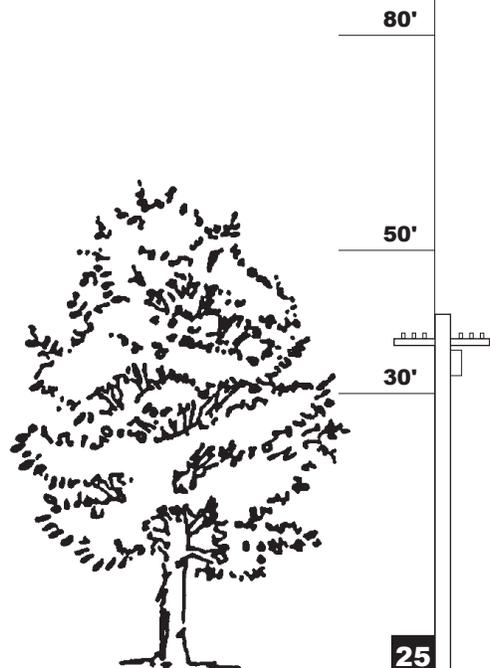
Best if watered during summer. Strong roots may raise sidewalks.

Native Range

Eastern U.S.

Varieties & Cultivars

Several varieties have better heat and drought tolerance than the species. 'Green Mountain' is noted for good form, leaf scorch resistance. 'Bonfire' has excellent orange-red autumn color.



PURPLEBLOW MAPLE, SHANTUNG MAPLE

Acer truncatum

Size & Rate of Growth

Small, rounded, broad crown with regular branching. Slow growth rate, reaching 20' in height and spread.

Ornamental Features

Upon emerging, leaves are reddish-purple, changing to dark green leaves, glossy green on upper side and paler beneath. Fall color an excellent yellow-orange-red.

Use

The features of this tough maple make it an ideal candidate for urban settings and residential settings.

Culture

Adaptable to varied soils: prefers a well-drained site.

Drought Tolerance

Extremely drought tolerant. Full sun provides for best landscape development.

Insects & Diseases

None noted.

Maintenance Issues

Relatively problem free, based on limited data. Heavy fruiting suggests self sowing/volunteers within the landscape.

Native Range

Native to Northern China, Manchuria and Korea.

Varieties & Cultivars

'Akikaze Nishiki'-variegated leaves

'Fire Dragon'-bright fall color

Cultivar 'Keithsform' is a hybrid between *Acer truncatum* and *Acer plantanoides* (Norway Maple) Subsp. Mono-known as the Painted Maple, similar to *Acer truncatum* but more refined foliage, and form is vase-shaped with a dome canopy. Has more ornamental bark.



80'

50'

30'

26

HYBRID SERVICEBERRY

Amelanchier x grandiflora

Size & Rate of Growth

15 to 25' tall with a variable spread. Slow to moderate growth.

Ornamental Features

Rounded multi-trunk, upright vase habit. Open to moderate density. White flower clusters in spring.

Use

A good street tree well adapted to planting beneath power lines.

Culture

Partial shade to full sun.

Drought Tolerance

Moderate drought tolerance. Good drainage is essential.

Pruning

Requires little pruning to develop strong structure.

Insects & Diseases

Susceptible to rust, fire blight and various insects.

Maintenance Issues

Basal suckers may require annual removal.

Native Range

Eastern U.S.

Varieties & Cultivars

There are many cultivars which are superior to the original cross.



80'

50'

30'



27

EUROPEAN HORNBEAM

Carpinus betulus

Size & Rate of Growth

40 to 60 feet tall with a 30 to 40 foot spread; moderate growth.

Ornamental Features

Young tree pyramidal, becoming rounded at maturity. Oval leaves dark green in summer, often turning yellow in late fall. Flowers are borne in clusters, each with a conspicuous three-lobed bract. The nut is borne at the base of the flower bract.

Use

Street tree. Upright form (see *Fastigiata* below) keeps branches away from street and sidewalks.

Culture

Prefers full sun but can tolerate light shade. Tolerates a wide variety of soil conditions but does best on well-drained sites. Tolerates the urban environment. Best if transplanted when young.

Drought Tolerance

Moderate.

Pruning

Withstands heavy pruning. Standard form would require pruning for street tree use.

Insects & Diseases

None serious.

Maintenance Issues

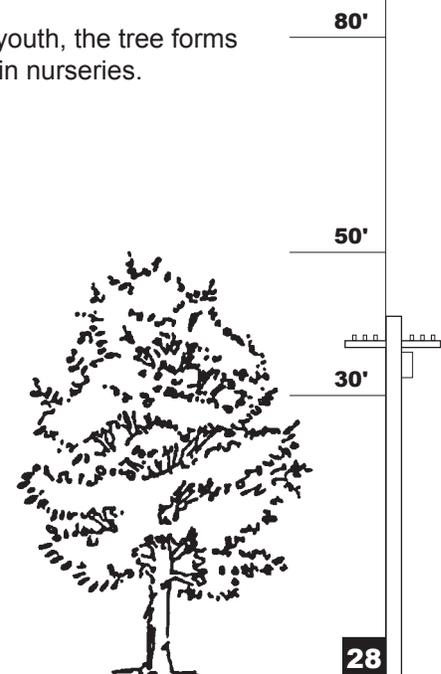
See pruning.

Native Range

Europe to Iran.

Varieties & Cultivars

'Fastigiata' - multi-stemmed form which is upright in habit. Narrow in youth, the tree forms a dense pyramid as it matures. This is the most common form found in nurseries.



28

AMERICAN HORNBEAM

Carpinus caroliniana

Size & Rate of Growth

20 to 30 feet in height with a 20 foot spread. Slow rate of growth.

Ornamental Features

Rounded to oval upright multi-trunk form. Good, soft yellow to yellow-orange autumn color. Interesting 'muscular' trunk form.

Use

As a small street tree where shade and/or a high water table are factors.

Culture

Moist soil. Partial shade.

Drought Tolerance

Low.

Pruning

Some pruning necessary for street and sidewalk clearance.

Insects & Diseases

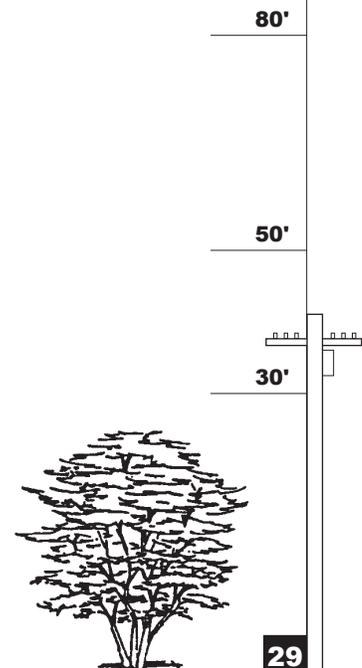
None noted.

Maintenance Issues

See pruning.

Native Range

Eastern U.S.



JAPANESE HORNBEAM

Carpinus japonica

Size and Rate of Growth

20 to 30 feet tall with an equal spread; slow growth rate

Ornamental Features

It is noted for its graceful form, attractive foliage and ornamental fruiting catkins, lush dark green leaves with prominent veining. Handsome small tree with rounded shape and densely branched; birch-like evergreen leaves ; leaf density is moderate, allowing speckles of sunlight through canopies on sometimes cloudy Pacific Northwest days. The fruit are light green then brown-ish, seed-bearing, pendant-like, leafy bracted racemes approximately 2 inches (similar in appearance to hops).

Use

A small specimen that is suitable for planting under wires. Japanese Hornbeams like to branch low upon early growth, and nurseries must put some effort into developing a crown that begins above the pedestrian flow; therefore, if planting near a walkway or driveway, specify that the nursery choose a specimen with limbs on the trunk that begins no lower than 5' or 6'. An attractively shaped, low-maintenance understory tree for shady sites. May be grown in lawns or naturalized in woodland areas.

Culture

Japanese Hornbeam prefers partial shade but can tolerate full sun, in order to grow densely. Prefers moist well drained soil but tolerates a range of soil types, prefers organically rich soil. Transplants easily from containers.

Drought Tolerance

Moderately drought tolerant once established, quite wind tolerant.

Pruning

Accepts repeated pruning, quickly healing scars. Prune back to the first pair of leaves on new shoots. The best times for minor pruning are early spring and after flowering. Major developmental pruning should be done in late winter, before bud burst.

Insects and Diseases

Pests: Relatively few insects attack hornbeam. Maple phenacoccus forms white cottony masses on the undersides of the leaves. Diseases: None are normally very serious. Several fungi cause leaf spots on *Carpinus*. Leaf spots are not serious so control measures are usually not needed. Canker, caused by several fungi, causes infected branches to dieback and entire trees die if the trunk is infected and girdled.

Maintenance Issues

See pruning.

Native Range

Japan



80'

50'

30'

30

EASTERN REDBUD

Cercis canadensis

Size & Rate of Growth

20 to 30 feet tall with equal spread: moderate growth.

Ornamental Features

Often multi-stemmed but can be trained as a single-stemmed tree. Wide-spreading to rounded crown. Alternately arranged foliage is broad and heart-shaped at the base. Fall foliage color can be bright yellow. Flowers emerge before the foliage as clusters of rose colored blossoms borne directly on stems and the trunk. This tree often begins to flower at four to six years old. Fruits are brown pods two to three inches long.

Use

Street tree when trained to a single-stemmed habit. Container; parking lot island; buffer strip, small shade tree specimen; street tree.

Culture

Grows in full sun or light shade. Has the best development on moist, well-drained sites. Adaptable to acidic or alkaline soils. Benefits from some afternoon shade where hot.

Drought Tolerance

Low. Water in summer dry spells.

Pruning

May require pruning to establish single-stemmed habit. Regular pruning in the first few years improves form.

Insects & Diseases

Canker, leaf spot, and verticillium wilt. Usually not significant in this area.

Maintenance Issues

Trunks need some protection from mechanical damage.

Native Range

Eastern United States. Missouri to New Jersey south to Mexico and Florida.

Varieties & Cultivars

'Alba' - a slower growing white flowering form. Exquisite in fall bloom. 'Forest Pansy' - attractive purple red leaves in the spring fading to green in the summer. 'Oklahoma' - prolific bloomer and drought tolerant.

Western Redbud *Cercis occidentalis*. Habit is more often a shrub or small tree.

Bright purplish-pink flowers in spring for three weeks. Much more drought tolerant than Eastern Redbud. Water well the first and second year to promote establishment; little will be required after that period. Native to California. Difficult to transplant.



80'

50'

30'



31

'PINK DAWN' AND 'WHITE CLOUD'

Chitalpa tashkentensis

Size and Rate of Growth

20-30' in height with equal spread. Fast growing, three feet per year in favorable conditions

Ornamental Features

Flowers late spring until late fall. New blooms everyday in summer. Semi-open breezy structure. Leaves lanceolate, grey/green about 4 – 5" long and 1" wide.

Use

An attractive street tree, size permits planting under overhead utilities

Culture

Partial to full sun. Prefers well drained, alkaline soil

Drought Tolerance

Somewhat drought tolerant once established with irrigation in the first few years

Pruning

May require initial pruning to promote healthy structure

Insects & Disease

Powdery mildew may occur with warm, wet spring. May be susceptible to anthracnose, aphids, and verticillium.

Maintenance Issues

None known

Native Range

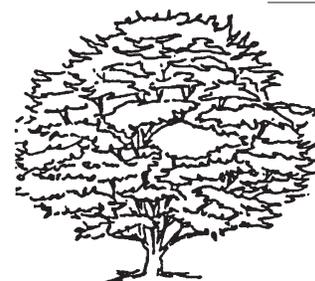
Intergenera cross of southern Catalpa (*Catalpa bignonioides*) and Desert Willow (*Chilopsis linearis*) Originally from USSR, adapted to southwestern US.

Varieties & Cultivars

Clone #1 "Pink Dawn" most common. Clone #2 "Morning Cloud" more pale pink to white flowers, more fastigate form & slightly larger size

Notes

Wood strength listed as medium weak. Attractive to honeybees and hummingbirds.



80'

50'

30'

32

YELLOWWOOD

Cladrastus lutea

Size & Rate of Growth

30 to 50 feet in height with a 40 to 50 foot spread. Slow growing when young, becoming moderate.

Ornamental Features

Broad, rounded crown. Fragrant, white, wisteria-like blossoms in early summer. Yellow autumn color.

Use

As a street tree under appropriate conditions. Should be set well back from street to accommodate branching pattern and some litter problem.

Culture

Full sun. Moist, well-drained soil.

Drought Tolerance

Somewhat drought tolerant once established.

Pruning

Prune when young to shorten lateral branches. Prune only in summer and fall. Prune to avoid poor branch unions. Should be pruned up for street tree use.

Insects & Diseases

None noted.

Maintenance Issues

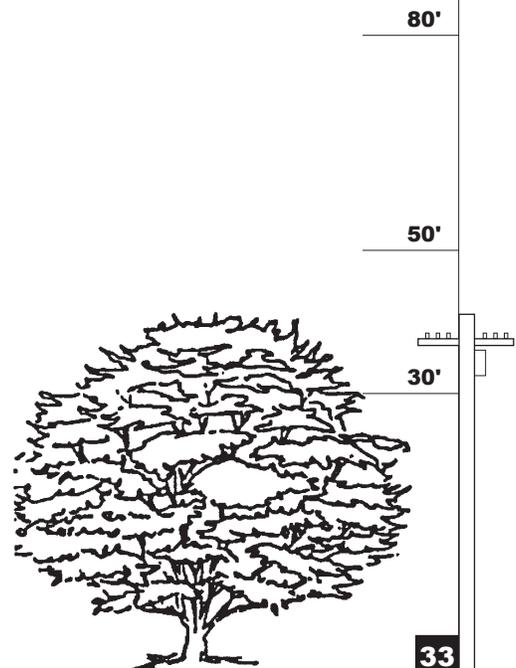
See pruning.

Native Range

Eastern U.S.

Varieties & Cultivars

May be somewhat difficult to obtain.



33

KOUSA DOGWOOD

Cornus kousa

Size & Rate of Growth

20 to 25 feet tall with variable spread; slow to moderate growth.

Ornamental Features

A multi-stemmed shrub or small tree, becoming rounded with maturity. Bark exfoliates with age, revealing a mosaic of gray, tan and brown. Leaves are dark green with deep venation. Flowers appear later than other flowering dogwoods. The flower bracts are creamy white, slender and pointed. The blossoms can last three weeks and may turn pinkish before falling. Fruit ripens in September and October and is reddish pink, resembling a raspberry. The fruit is edible, although mealy in texture.

Use

As a street tree where location isn't too exposed to hot sun. Suitable for planting under power lines.

Culture

Prefers light shade but will grow in full sun. Does best in acidic, well drained, consistently moist soil. Sometimes difficult to establish.

Drought Tolerance

Low to moderate. More drought tolerant than the Eastern Flowering Dogwood.

Pruning

May require pruning to establish single-stemmed habit.

Insects & Diseases

Less susceptible to Dogwood anthracnose than Pacific Dogwood or Eastern Flowering Dogwood.

Maintenance Issues

Pruning necessary for street and sidewalk clearance.

Native Range

Japan, Korea.

Varieties & Cultivars

Cornus kousa var. *chinensis* - slightly larger flower bracts. 'Milky Way' - a broad, bushy form which blooms profusely.



80'

50'

30'



34

PAUL'S SCARLET HAWTHORN

Crataegus laevigata var. *Paul's Scarlet*

Size & Rate of Growth

15 to 25 feet tall with a 15 to 20 foot spread. Moderate to rapid growth.

Ornamental Features

Oval irregular silhouette with fine texture. Double scarlet flowers. Deep red fruit is generally sparse.

Use

Good street tree

Culture

Tolerates most soils but prefers heavy dry loam. Grows best in full sun.

Drought Tolerance

Drought tolerant when established.

Pruning

Needs pruning to establish uniform habit and a single trunk. Suckers profusely.

Insects & Diseases

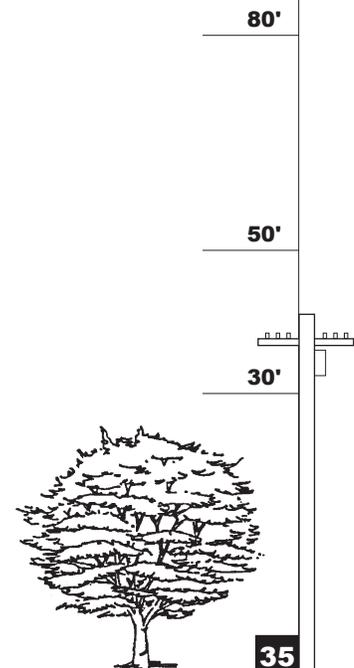
Susceptible to fire blight.

Maintenance Issues

Presence of thorns makes pruning an unpleasant task.

Native Range

Parent species is native to Europe and North Africa.



WASHINGTON THORN

Crataegus phaenopyrum

Size & Rate of Growth

25 to 30 feet. broadly oval to rounded habit.

Ornamental Features

Two-to three-inch leaves with three to five pointed lobes emerge reddish-purple, turning to dark green in the summer. Fall color usually in shades of orange to red. White flower clusters appear in June. Bright red fruits emerge in the fall and persist until mid-March.

Use

Street tree; suitable for planting under power lines.

Culture

Prefers full sun in a well-drained soil. Tolerates slightly acidic to alkaline soils. Because it develops a taproot, transplanting is most successful when plant is young.

Drought Tolerance

Very good.

Pruning

Some structural pruning may be necessary. Prune when dormant.

Insects & Diseases

Hawthorns are generally susceptible to many insect and disease problems. This particular species has shown more resistance to fire blight than other hawthorns.

Maintenance Issues

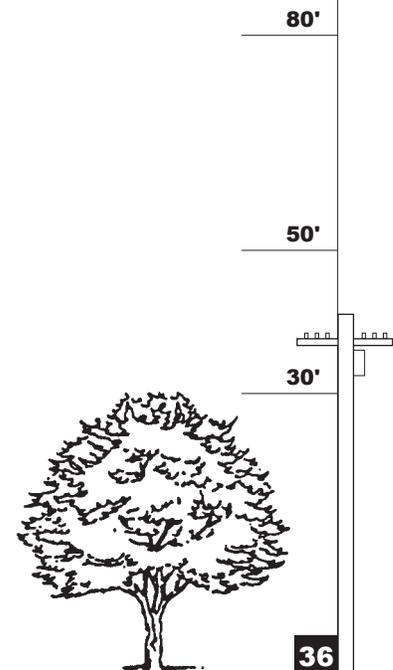
Slim, straight one-to three-inch thorns make this plant difficult to handle and it should not be used in high traffic areas. Thorny branches should be pruned above the height of small children.

Native Range

Eastern and central United States.

Varieties & Cultivars

'Fastigiata' - narrow, columnar form.



GINKGO, MAIDENHAIR TREE

Ginkgo biloba

Size & Rate of Growth

50 to 60 feet tall in cultivation, with a variable spread; may grow to 90 feet tall in very favorable locations. Moderate growth, but slow initially.

Ornamental Features

Open and narrowly conical when young but becomes a broad, well-proportioned tree with age. Leaf has a distinctive fan shape. Foliage color is light green in the spring and summer, becoming bright yellow-gold in the fall. Flowers are inconspicuous. The fruit, when produced on female trees, is a seed with a fleshy covering about 1 to 1 1/2 inches long with a disagreeable odor.

Use

As a street tree where plenty of root room is provided.

Culture

Adaptable to a wide variety of growing conditions. Prefers full sun and is tolerant of air pollution. Transplants easily.

Drought Tolerance

Moderate once established.

Pruning

Needs little pruning, except to correct poor branch unions. May be deep crotched when mature.

Insects & Diseases

None serious.

Maintenance Issues

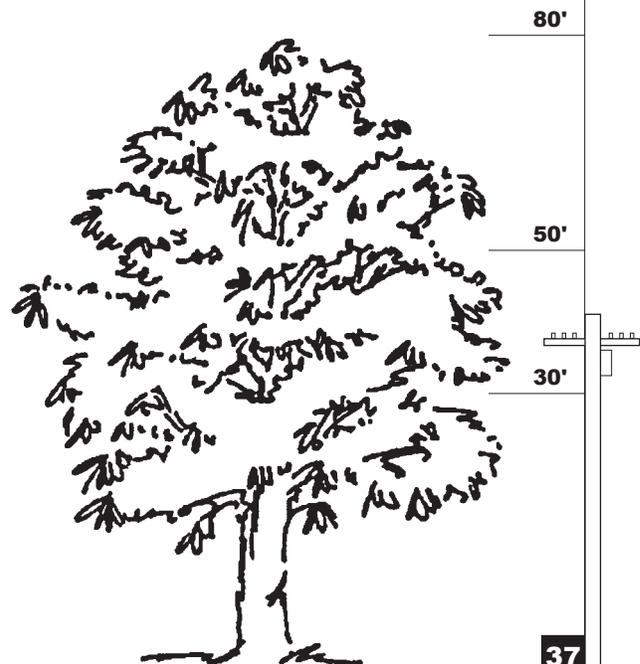
The fleshy covering on the seed of female trees is extremely messy and foul-smelling. Seeds are not produced until the tree is 10 to 15 years old. To avoid the seeds, plant only male trees obtained from reliable sources. Brittle wood.

Native Range

Southeast China.

Varieties & Cultivars

'Fastigiata' - a narrowly columnar type. 'Autumn Gold' - upright in youth, becoming broadly spreading with age. 'Fairmount' - fast growing with a pyramidal form.



37

THORNLESS HONEYLOCUST

Gleditsia triacanthos var. inermis

Size & Rate of Growth

50 to 80 feet with comparable width; fast growth when young, slowing with maturity.

Ornamental Features

Open, spreading habit which casts light shade. Young bark is smooth and flecked with silver; older trunks become brown-black. Pinnately compound leaves are bright green in summer, turning yellow in the fall. Greenish-yellow flowers in May are not showy but are fragrant. Fruit is an eight-inch reddish brown pod. The entire pod is curved. Many varieties are fruitless.

Use

Street tree where broadly spreading fine textured canopy is desired.

Culture

Prefers full sun. This tree tolerates high pH, salt, air pollution and other adverse conditions.

Drought Tolerance

Very good.

Pruning

Remove dead wood.

Insects & Diseases

Pod gall midge, borers, webworms. Leaves are subject to extreme disfiguration due to pod gall midge.

Maintenance Issues

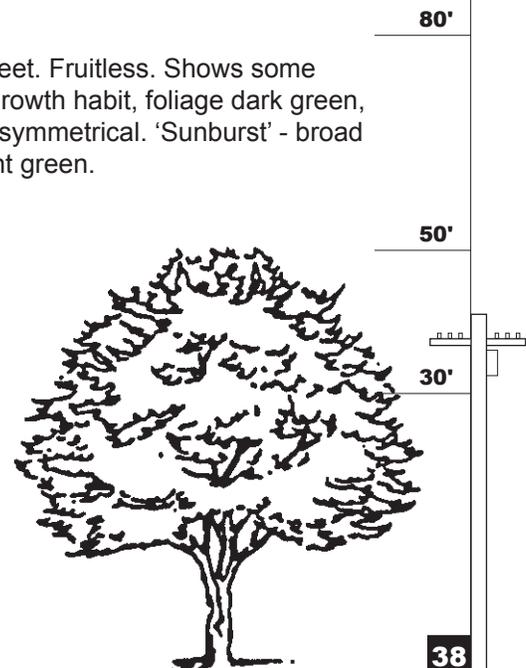
Roots on mature plants may heave pavement if planted near sidewalks. Fruit pods are messy though most varieties are fruitless. Brittle wood. Canopy needs frequent pruning to accomodate road clearance.

Native Range

Eastern United States.

Varieties & Cultivars

Many available, including: 'Moraine' - broad outline, 40 to 50 feet. Fruitless. Shows some resistance to webworm infestations. 'Shademaster' - upright growth habit, foliage dark green, fruitless or nearly so. 'Skyline' - pyramidal form, compact and symmetrical. 'Sunburst' - broad rounded head; new growth golden, changing eventually to light green.



KENTUCKY COFFEETREE

Gymnocladus dioicus

Size & Rate of Growth

50 to 60 feet in height with a 15 to 30 foot spread. Slow growth rate.

Ornamental Features

Ascending branches develop a vase-like form with a globose crown. Rugged winter branch pattern. Large compound leaves. Interesting fruit pods remain on tree during winter.

Use

As a street tree under appropriate conditions. Should be given sufficient root room. Branches arch high over streets. Adaptable to urban conditions.

Culture

Full sun. Rich moist, well drained soil for best growth.

Drought Tolerance

Well adapted to drought once established.

Pruning

No special requirements.

Insects & Diseases

None noted.

Maintenance Issues

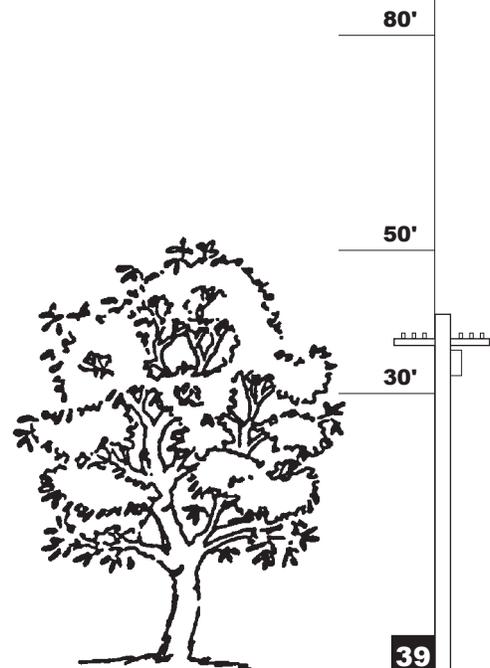
Pods may be messy.

Native Range

Eastern U.S.

Varieties & Cultivars

May be somewhat difficult to obtain.



39

GOLDENRAIN TREE

Koelreuteria paniculata

Size & Rate of Growth

30 to 40 feet tall with equal spread; slow to moderate growth.

Ornamental Features

Rounded outline with branches spreading and ascending. Compound leaves have seven to fifteen leaflets with rich green summer color and yellow-brown fall color. Yellow flowers, in upright clusters, appear in summer. The fruits are papery, three-sided pods holding small, black seeds. The pods change from green to yellow to brown, often persistent through winter.

Use

Street tree suitable for planting under power lines.

Culture

Very adaptable tree. Thrives in full sun and withstands heat, wind and alkaline soils. Tolerates air pollution. Due to a deep root system, transplanting is most successful when plant is young.

Drought Tolerance

Good when becoming established, becoming very good at maturity.

Pruning

May require some pruning to establish a strong central leader and to direct low branches away from streets and sidewalks.

Insects & Diseases

None serious, although the coral spot fungus does appear occasionally.

Maintenance Issues

Some authors report weak wood problems. Fruit may also become messy. Sometimes reseeds in vicinity

Native Range

China, Korea.

Varieties & Cultivars

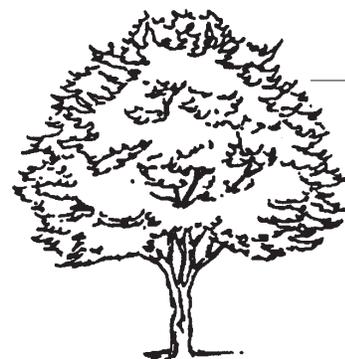
'Fastigiata' - narrowly upright habit, 25 feet tall, with a 4 to 6-foot spread. An unnamed variety with striking orange autumn color is being propagated in Ashland.



80'

50'

30'



40'

CRAPEMYRTLE

Lagerstroemia indica

Size & Rate of Growth

15 to 25 feet in height with a 10 to 15 foot spread. Slow growing.

Ornamental Features

Multi-trunk form. Colorful flowers in late summer and early fall when very few trees and shrubs are blooming. Good orange to red autumn color. Attractive multi-colored bark.

Use

Under low power lines or as accents in combination with trees that don't have conspicuous flowers.

Culture

Full sun. Susceptible to powdery mildew in shaded areas. Well drained soil.

Drought Tolerance

Drought tolerant once established.

Pruning

May need pruning to develop a central leader for street tree use.

Insects & Diseases

Fungus problems that occur in other parts of the country are usually not a problem in this area. May occasionally have aphid problems.

Maintenance Issues

See pruning.

Native Range

China and Korea.

Varieties & Cultivars

Many varieties and cultivars based on growth habit and flower color.



80'

50'

30'



41

SOUTHERN MAGNOLIA

Magnolia grandiflora

Size & Rate of Growth

60 to 70 feet tall with a spread of 30 to 40 feet; slow to moderate growth.

Ornamental Features

Low-branching evergreen tree; dense, upright oval habit when young, spreading with age. Dark green leaves are five to ten inches long and drop at the end of their second year. Large, creamy-white flowers are very fragrant. Fruit is a rusty-brown cucumber-like pod which splits open to reveal red seeds.

Use

Large evergreen street tree.

Culture

Full sun to partial shade in moist, well-drained, neutral or slightly acidic soil. Magnolias in general prefer early spring transplanting.

Drought Tolerance

Low to moderate.

Pruning

Prune when young to avoid double leaders. Perform any needed pruning soon after flowering.

Insects & Diseases

None serious.

Maintenance Issues

A very beautiful but messy tree with leaves (which seem almost like plastic), flower parts, and seedheads littering the ground. The roots may lift nearby sidewalks. Surface rooting and dense year-round shade prevent healthy lawn growth beneath the tree. Should be located carefully.

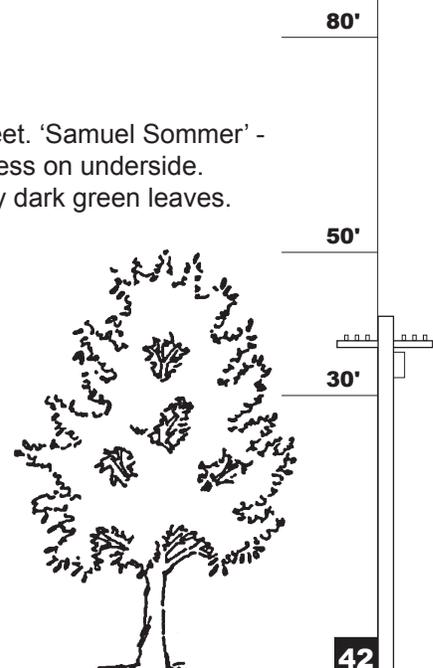
Native Range

Southeastern United States.

Varieties & Cultivars

'Majestic Beauty' - leaves very long, broad and heavy. Height to 50 feet. 'Samuel Sommer' - strong ascending habit to 40 feet. Leaves with heavy, rusty red fuzziness on underside.

'Victoria' - parent plant grown in Victoria, B.C. Tree to 20 feet with very dark green leaves.



42

KOBUS MAGNOLIA

Magnolia kobus

Size & Rate of Growth

Develops a pyramidal head 30-40 feet tall with an equal spread. Moderate growth.

Ornamental Features

Slightly fragrant 4" white flowers followed by 2" red fruit. Bright yellow fall foliage.

Use

Small street tree.

Culture

Tolerant of all soil types.

Drought Tolerance

Moderate.

Pruning

Needs pruning when young to develop a strong central leader and discourage the tendency towards multiple trunks.

Insects & Diseases

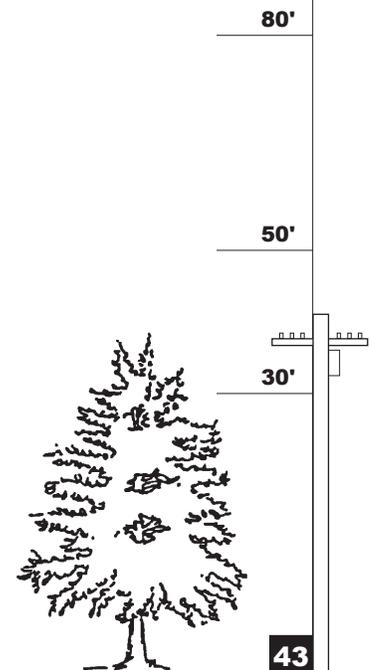
None serious.

Maintenance Issues

Pruning necessary when young.

Native Range

Japan



ORNAMENTAL CRABAPPLES

Malus spp.

Size & Rate of Growth

Generally less than 30 feet tall; moderate growth.

Ornamental Features

Commonly small trees with a rounded to oval habit though the habit will vary depending on the species, variety, or cultivar. Foliage color is predominantly medium green with some plants having significant fall color. Most have beautiful flowers which bloom in May. Fruit is usually less than two inches, with the color ranging from pure red to pure yellow.

Use

A good tree for planting under power lines.

Culture

Full sun best for development of flowers. Generally prefer well-drained, moist, acidic soil.

Drought Tolerance

Most have moderate drought tolerance.

Pruning

Pruning may be necessary to keep wide-spreading branches clear of road right-of-way. Best done immediately after flowering since flower buds for the next season are initiated in mid-June to early July.

Insects & Diseases

Scale infestations or borers are the most serious insect problems. Some species and cultivars are more resistant to certain diseases than others. Consult local nursery professional or literature.

Maintenance Issues

Pruning must be performed regularly to ensure good structure. Should be located well away from curb. Some fruit may be messy on roads and sidewalks.

Native Range

Depends on species, variety, or cultivar.

Varieties & Cultivars

Many available, including: *Malus floribunda* - rounded, dense habit to 25 feet by 20 feet. Foliage dense, fine-textured. Flowers pink in bud, opening white. Fruit small, yellow and red, often not persistent. Good disease resistance. Good for wildlife. *Malus 'Dolgo'* - spreading to 40 feet by 40 feet. Needs pruning for good tree framework. Single white blossoms abundant in early spring. Bright red, oval fruit in August. Good disease resistance. *Malus 'Snowdrift'* - red buds open to white, abundant with long bloom period. Fruit orange-red, persistent. Scab resistant.



80'

50'

30'



44

TUPELO, SOURGUM

Nyssa sylvatica

Size & Rate of Growth

30 to 50 feet in height with a 15 to 20 foot spread. Long lived, slow growing.

Ornamental Features

A pyramidal form with pendulous lower branches. Clean dark green foliage. Beautiful copper-orange autumn color.

Use

As a street tree, parking lot island, buffer strip highway shade tree where conditions are appropriate.

Culture

Full sun to semi-shade. Moist well-drained soil best; will tolerate wet soil.

Drought Tolerance

Poor to moderate once established. Planted in dry site, needs occasional irrigation during drought.

Pruning

Lower descending branches should be pruned for street tree use. Needs little or no pruning to develop strong structure. Resistant to limb breakage.

Inects & Diseases

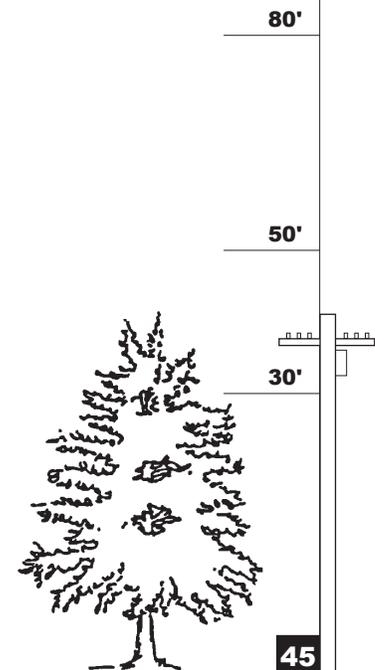
None noted.

Maintenance Issues

See pruning. Causes some litter.

Native Range

Eastern U.S.



SOURWOOD

Oxydendrum arboreum

Size & Rate of Growth

25 to 30 feet in height with a 15 to 20 foot spread. Possibly taller under ideal conditions. Slow growth rate.

Ornamental Features

Pyramidal form with a rounded top. Glossy green leaves in summer. Flowers in late summer. Beautiful orange autumn color in late October. A row of Sourwood in fall color are memorable.

Use

As a street tree under appropriate conditions. Suitable for planting under power lines.

Culture

Light shade to full sun. Should not be planted in especially hot locations. Best with moist, well-drained soil.

Drought Tolerance

Low initial drought tolerance. Better when well established.

Pruning

Usually not necessary.

Insects & Diseases

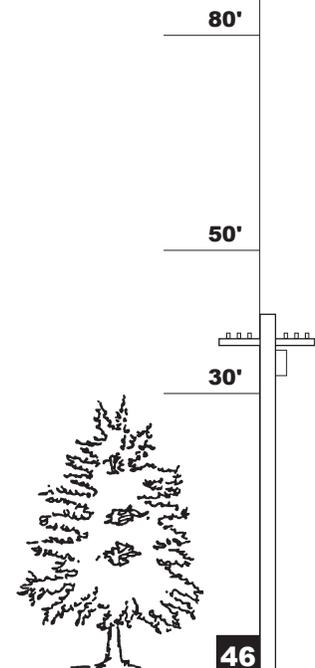
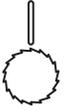
None noted.

Maintenance Issues

None.

Native Range

Eastern U.S.



PERSIAN PARROTIA

Parrotia persica

Size & Rate of Growth

20 to 30 feet in height, possibly higher, with a 15 to 20 foot spread. Slow to medium growth rate.

Ornamental Features

Deep lustrous green summer foliage. Multi-trunk form. Yellow orange, gold to orange to rosy pink, long lasting autumn color. Attractive mottled flaking bark. Flowers appear before leaves as red haze.

Use

As street tree under appropriate conditions. Upright branching pattern keeps limbs clear of street and sidewalks. Upright ascending vase-shaped form. May be an outstanding specimen tree.

Culture

Full sun to light shade. Moist sandy loam soil. Not tolerant of wet conditions.

Drought Tolerance

Not drought tolerant.

Pruning

Not usually necessary.

Insects & Diseases

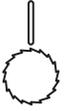
None.

Maintenance Issues

Need protection from sun scald.

Native Range

Northwestern Iran.



80'

50'

30'



47

CHINESE PISTACHE

Pistache chinensis

Size & Rate Of Growth

40 to 50 feet in height with a similar spread. Slow to moderate growth rate.

Ornamental Features

Nicely formed oval-shaped tree with compound ash-like foliage. Brilliant yellow, orange, and red coloration in autumn.

Use

A very suitable street tree.

Culture

Full sun. Good drainage. Will tolerate less-than-ideal soils.

Drought Tolerance

Good once established.

Pruning

Must be pruned to initially develop good tree form.

Insects & Diseases

None.

Maintenance Issues

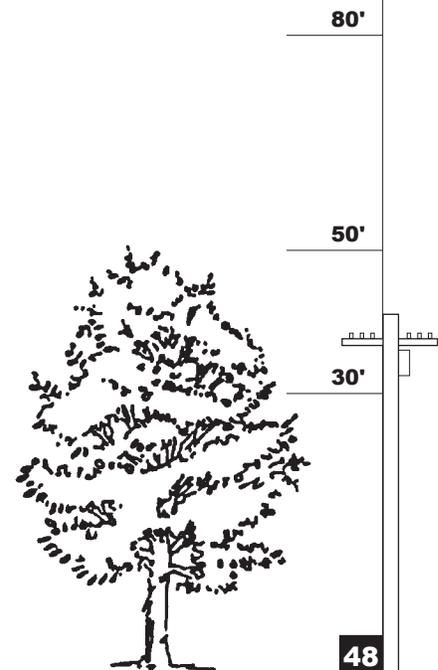
See pruning. Staking often required on smaller trees. Fruit litter may be a problem on female trees.

Native Range

China.

Varieties & Cultivars

'Keith Davey' - male selection w/no fruit and having excellent autumn color.



48

GALLERY PEAR

Pyrus calleryana

Size & Rate of Growth

30 to 50 feet tall with 20 to 35 foot spread; moderate to fast growth.

Ornamental Features

Generally conical, although broadening with age. Leaves are dark, glossy green in summer, turning to shades of scarlet in fall. Flowers appear before the leaves and are clusters of pure white blossoms with black stamens. Fruits are small, round and inconspicuous.

Use

Street tree tolerant of urban conditions.

Culture

Full sun exposure gives best growth. Tolerates a variety of soils. Adapts to polluted urban environments. Tolerates limited root room.

Drought Tolerance

Moderate.

Pruning

Occasionally a central leader will need to be trained. As the tree ages, prune to keep shape and remove dead wood. Remove narrow branch angles when young. Prune to keep branches clear of street and sidewalks.

Insects & Diseases

Some varieties susceptible to fire blight and cedar-apple rust.

Maintenance Issues

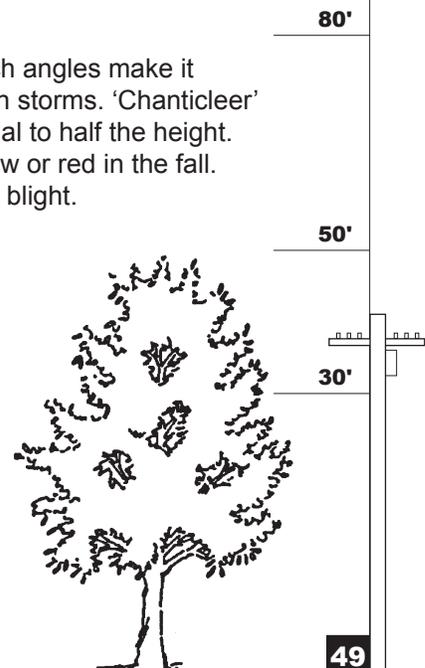
If narrow branch angles are left unchecked, the branches can break and rip the trunk. Fruit litter can be a problem.

Native Range

China.

Varieties & Cultivars

'Aristocrat' - more open form with darker, narrow foliage. Narrow branch angles make it difficult to prune. These same narrow angles cause branch breakage in storms. 'Chanticleer' - much narrower than Bradford and thinner in texture. The width is equal to half the height. 'Redspire' - a less stiff pyramidal form than Bradford. Leaves turn yellow or red in the fall. 'Autumn Flame' - good branch angles, red fall color. Susceptible to fire blight.



CANYON LIVE OAK

Quercus chrysolepis

Size & Rate of Growth

30 to 60 feet in height with a spread of from 30 to 40 feet. Slow growth rate.

Ornamental Features

An evergreen native oak with a round headed or somewhat spreading form.

Use

As a drought tolerant accent tree where an evergreen is desired.

Culture

Full sun to considerable shade. Poorer growth habit in shade.

Drought Tolerance

Very drought tolerant once established.

Pruning

Some pruning usually necessary to establish a favorable structure.

Insects & Diseases

Perhaps scale.

Maintenance Issues

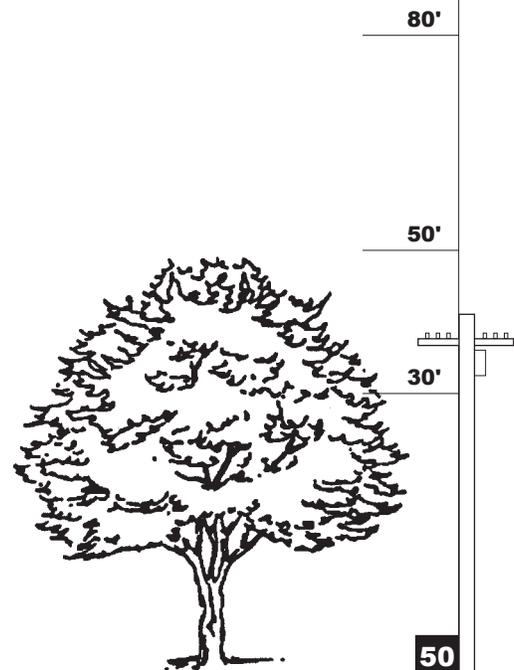
See Pruning.

Native Range

Southwest Oregon, California.

Varieties & Cultivars

May be somewhat difficult to obtain, not readily available.



SCARLET OAK

Quercus coccinea

Size & Rate of Growth

50 to 75 feet in height with a 40 to 50 foot spread. Somewhat slow growing.

Ornamental Features

Bright green leaves in summer and scarlet red in fall. Younger trees keep leaves in winter. Older trees may lose leaves in fall.

Use

A good large-canopied street tree where adequate space is provided.

Culture

Full sun. Deep, moist, well-drained soil. Summer irrigation usually required. Some problems with transplanting.

Drought Tolerance

Not greatly drought tolerant but deep roots help.

Pruning

Train and prune to develop good structure.

Insects & Diseases

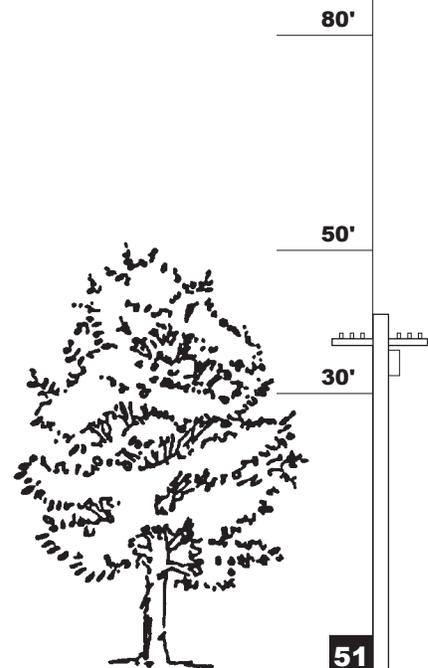
No major problems.

Maintenance Issues

See Culture and Pruning. A better street tree than Pin Oak which has more lateral and weeping branches.

Native Range

Eastern United States.



ENGLISH OAK

Quercus robur

Size & Rate of Growth

60 to 70 feet tall and nearly as wide; moderate to fast growth.

Ornamental Features

Large, round-headed outline. Leaves dark green with three to seven pairs of rounded lobes. No fall color. Leaves either drop green or turn brown and persist. Acorn one to two inches long with the cup covering 1/3 of the nut.

Use

Large street tree. Variety 'Fastigiata' good where a large columnar tree is desired.

Culture

Prefers full sun but can tolerate light shade. Moderately tolerant of the urban environment.

Drought Tolerance

Good once established.

Pruning

Low branches may need to be removed to raise the crown.

Insects & Diseases

Susceptible to mildew.

Maintenance Issues

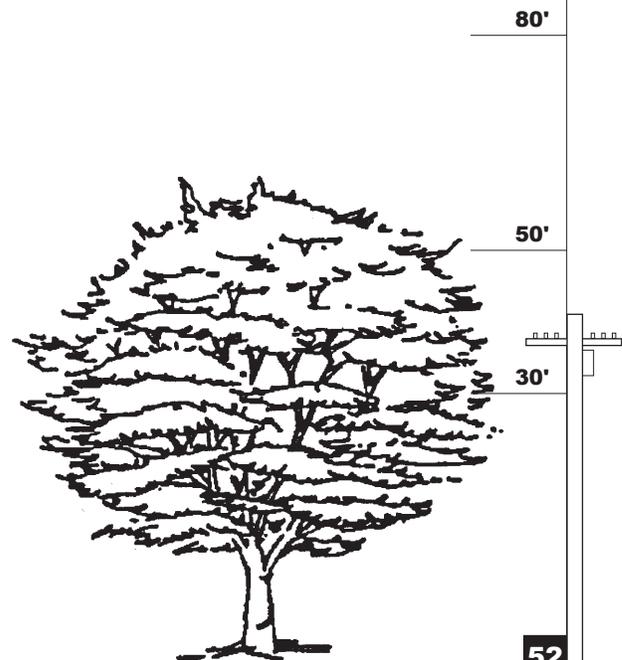
Leaves remain on tree during winter.

Native Range

Europe, northern Africa, western Asia.

Varieties & Cultivars

'Fastigiata' - narrow, upright habit, much like Lombardy poplar. Will grow to 55 feet with a 10 to 15 foot width.



52

RED OAK

Quercus rubra

Size & Rate of Growth

50 to 80 feet tall with a spread of 40 to 50 feet; moderate to fast growth.

Ornamental Features

Matures to a dome-shaped, wide-spreading, dense form with upwardly curving branches. High branching habit. As trees mature, the upper limbs show a dark streaking over the gray, as if paint had been spilled at the branch junction. New leaves and leaf stalks are often red when emerging. Leaves are dark green during summer, turning red to brown in fall. Acorn is small, about 3/4 to 1 inch.

Use

Large canopied street tree.

Culture

Grows best in full sun in moist, well-drained, acidic soils but will tolerate other conditions. Performs well in the urban environment. Not tolerant of extremely wet soils.

Drought Tolerance

Moderate once established. Needs summer irrigation in fast draining soils.

Pruning

Some pruning necessary to develop good street tree form.

Insects & Diseases

Scale.

Maintenance Issues

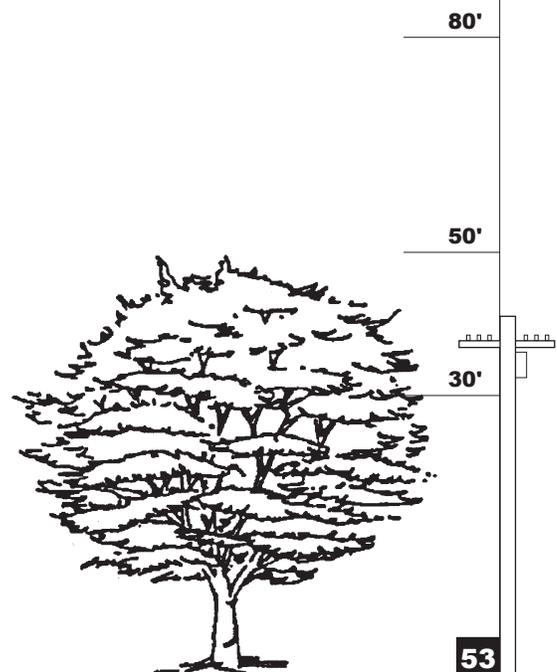
Many develop chlorosis in high pH soils.

Native Range

Eastern North America.

Varieties & Cultivars

'Aurea' - new foliage emerges bright yellow in the spring.



53

CORK OAK

Quercus suber

Size and Rate of Growth

40 – 70' in height with a 40 – 50' spread. Slow growth, long-lived with a trunk as large as 4' in diameter at maturity.

Ornamental Features

Small evergreen leaves with a dense broad irregularly shape canopy.

Use

A fine shade tree.

Culture

Full sun. Tolerates a variety of soils from acid to alkaline.

Drought Tolerance

Very drought tolerant once established with irrigation in the first few years.

Pruning

Careful pruning during youth to create form.

Insects & Disease

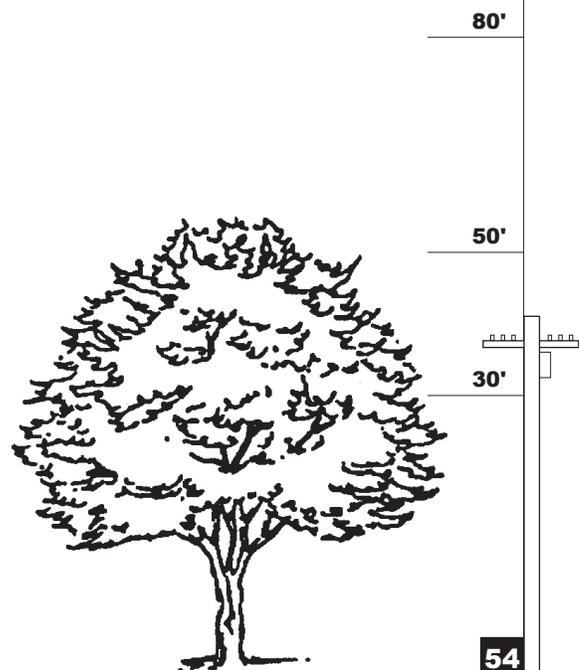
Deer tolerant.

Maintenance Issues

None known.

Native Range

Mediterranean Europe and North Africa.



54

EUROPEAN MOUNTAIN ASH

Sorbus aucuparia

Size & Rate of Growth

35 to 45 feet tall, with a width 2/3 to equal the height; moderate growth.

Ornamental Features

Oval, dense habit. Leaflet color is dull green in summer, turning yellow, orange or red in fall. Individual creamy white flowers are small but are borne in a flat-topped cluster of from three to five inches in diameter in late spring. Fruit is orange-red, berry-like, in clusters; showy in midsummer. The fruit may persist through the winter unless eaten by birds. The weight of the fruit often bends the outer stems of the branches.

Use

Street tree. Good for wildlife.

Culture

Best growth occurs in full sun or light shade; average soils. Tolerates wind and heat.

Drought Tolerance

Poor.

Pruning

Remove narrow branch angles when young. Does not heal well from major pruning cuts or automobile damage.

Insects & Diseases

Sun scald may be a problem where trunk is exposed to strong southwestern sunlight. Fire blight can be a serious problem.

Maintenance Issues

Fruit can be messy, especially over pavement, though birds often remove fruit.

Native Range

Europe, Asia Minor.

Varieties & Cultivars

'Cardinal Royal' - the large, bright red fruits color early. Many other Sorbus species, having less availability than *S. aucuparia*, might be worthwhile as street trees.



80'

50'

30'



55

JAPANESE SNOWBELL

Styrax japonicus

Size & Rate of Growth

20-30' tall with equal spread. Slow growing.

Ornamental Features

Lovely small tree with a broadly rounded head. Pendulous white flowers in spring followed by dry tan colored drupes. Bright yellow fall foliage.

Use

Small street tree. Could be used under power lines.

Culture

Full sun or partial shade. Needs ample moisture in summer. Does best in moist, acid, well-drained soil.

Drought Tolerance

Not drought resistant.

Pruning

Remove suckers to reveal graceful horizontal habit.

Insects & Diseases

None.

Maintenance Issues

Wide-spreading branches may be a hindrance to sidewalks and street traffic. Fruit debris may be a problem.

Native Range

Japan, China, Korea

Varieties & Cultivars

'Pink Chimes' has pink blooms on a more upright tree. 'Obassia' fragrant, oval in youth and more rounded at maturity.



80'

50'

30'



56

BALDCYPRESS

Taxodium distichum

Size & Rate of Growth

50 to 70 feet in height with a 20 to 30 foot spread. Moderate growth rate; long lived.

Ornamental Features

A fine textured deciduous conifer. Slender, pyramidal habit. Foliage and appearance somewhat similar to that of the Dawn Redwood. The trunk is unusually flared at the base.

Use

As a street tree, especially where a narrow growing tree is desired. Buffer strip, shade tree specimen, clipped hedge or screen; urban tolerant.

Culture

Best in full sun with a moist sandy loam. Will tolerate wet or dry sites.

Drought Tolerance

Good once established.

Pruning

Usually unnecessary except to prune lower limbs away from sidewalks and street.

Insects & Diseases

Resistant.

Maintenance Issues

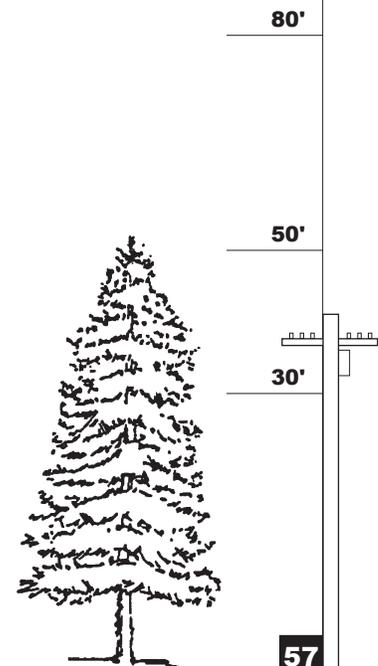
See Pruning. 'Knees' and shallow roots may heave sidewalks and push out curbs.

Native Range

Southeastern U.S.

Varieties & Cultivars

'Shawnee Brave' - 15 to 20 feet wide has a narrow, pyramidal form.



LITTLELEAF LINDEN

Tilia cordata

Size & Rate of Growth

40 to 55 feet in height with a width of to 2/3 the height; moderate growth.

Ornamental Features

Broadly pyramidal to upright oval habit. Leaves are 1 to 3 inches long, equally broad or broader dark green above, silvery below. Fragrant yellow flowers are borne in two to three inch clusters in June or early July. Bees attracted to flowers. Fruits are small nutlets.

Use

Street tree and lawn specimen.

Culture

Prefers full sun, well-drained fertile soil. Tolerant of the urban environment.

Drought Tolerance

Moderate.

Pruning

Young trees benefit from staking and shaping to establish a strong central leader. Mature trees require infrequent corrective pruning.

Insects & Diseases

Aphids.

Maintenance Issues

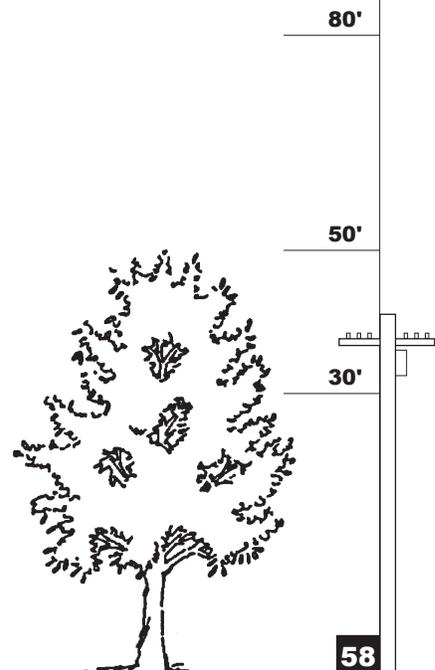
Aphid infestation may cause honeydew. Remove basal suckers.

Native Range

Europe.

Varieties & Cultivars

'Pyramidalis' - narrow habit.



CHINESE ELM

Ulmus parvifolia

Size & Rate of Growth

40 to 60 feet tall; moderate to fast growth.

Ornamental Features

Wide spreading with pendulous twigs and branch ends. Mottled bark combines hues of grays, greens, oranges and browns. Leathery green leaves are one to three inches in length. In milder conditions, the leaves may remain evergreen over the winter. In more northern climates, they may have a fall color in tones of red, yellow, and purple. Small seeds have wings.

Use

Lawn specimen, street tree, and screen.

Culture

Full sun, moist, well-drained soils preferred. Will tolerate unfavorable conditions.

Drought Tolerance

Reasonably good.

Pruning

Frequent light thinning is preferred - occasional heavy pruning promotes a flush of unattractive growth. Prune in fall or winter.

Insects & Diseases

Shows resistance to Dutch elm disease, Elm leaf beetle and Japanese beetle.

Maintenance Issues

Weak wood may result in damage during storms. Avoid injury to surface roots and lower trunk. Potential to lift sidewalks and pavement.

Native Range

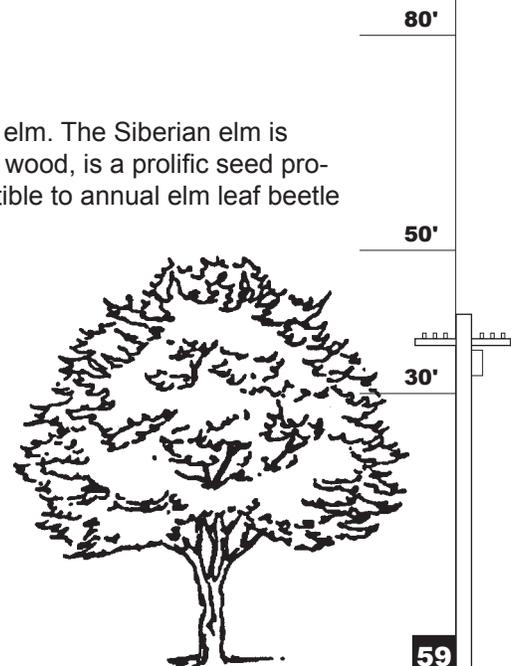
China, Japan.

Varieties & Cultivars

'Blake' - branches sweep upward.

Note

This species is often confused with *Ulmus pumila*, the Siberian elm. The Siberian elm is inferior to the Chinese elm because the Siberian elm has weak wood, is a prolific seed producer which causes a litter problem, and is much more susceptible to annual elm leaf beetle damage.



59

ZELKOVA

Zelkova serrata

Size & Rate of Growth

50 to 80 feet tall; moderate to fast growth.

Ornamental Features

This elm tree relative is low branched, with a vase-shaped outline and a rounded top. As tree matures, the bark begins to exfoliate. Dark green leaves are oval and slightly rough on top. Fall color varies from red to yellow. Flowers and tiny woody fruits are inconspicuous.

Use

Street tree where sufficient root room is provided.

Culture

Full sun. Adaptable to many soil types but exhibits best growth in well-drained soils. Reasonably pollution tolerant. Transplants easily.

Drought Tolerance

Once the plant is well established, it shows good drought tolerance.

Pruning

Dense crown may be thinned when young. Since it tends to branch low, care must be taken to keep limbs from obstructing streets.

Insects & Diseases

Resistant to Dutch elm disease and elm leaf beetle.

Maintenance Issues

May be susceptible to damage from late frost when young.

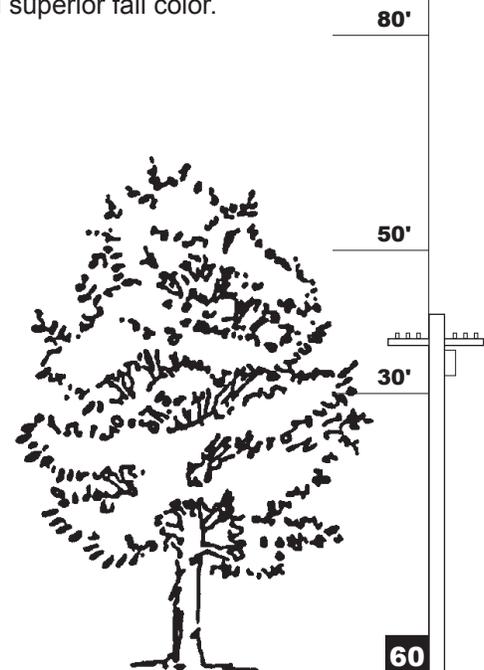
Native Range

Japan.

Varieties & Cultivars

'Village Green' - fast growing form with smooth, straight trunk and superior fall color.

'Green Vase' - more upright branching structure.



NON-RECOMMENDED STREET TREES

The following trees may be of value as street trees when properly located and cared for. However, they may cause or be subject to the indicated problems.

Acer macrophyllum (Big Leaf Maple)

Reason: Doesn't react well to confined root space. Leaf scorch in summer.

Aesculus species (Horse Chestnuts)

Reason: Messy; roots heave sidewalks.

Ailanthus altissima (Tree of Heaven)

Reason: Invasive root system. If used, a male tree should be chosen.

Alnus species (Alder)

Reason: Wind damage, shallow invasive roots.

Catalpa speciosa (Western Catalpa)

Reason: Bark is thin and easily damaged by mechanical impact; branches drop, pods drop during summer causing a mess and may scorch.

Cornus mas (Cornelian cherry)

Reason: Falling fruit is messy and stains sidewalks.

Fraxinus velutina 'Modesto' (Modesto Ash)

Reason: Subject to Anthracnose. Often poor branch structure.

Laburnum x watereri (Goldenchain)

Reason: Poisonous.

Morus alba (Fruitless Mulberry)

Reason: Invasive root system. Strong lateral branching.

Platanus acerifolia (Sycamore)

Reason: A tree of great beauty but has strong surface roots, subject to Anthracnose, messy, solar unfriendly.

Picea, Pseudotsuga, etc. (Evergreen Conifers)

Reason: Lateral branches tend to interfere with clearance. Mature trees dangerously self-prune lower limbs.

Quercus palustris (Pin Oak)

Reason: Lower branches tend to weep, obstruct traffic and visibility.

PROHIBITED STREET TREES

Although the City feels that total exclusion of any tree would be inappropriate, it recognizes that some trees may cause problems when used as street trees. The following species are normally prohibited for one or several of the following reasons: 1) their roots cause injury to sewers or pavements; 2) they are particularly subject to insects or diseases; 3) they cause safety and visibility problems along streets and at intersections; 4) they create messy sidewalks and pavements. These trees are prohibited for use as street trees except under special circumstances. Their use must be approved by the Planning Commission.

LATIN NAME

Juglans species
Maclura pomifera
Morus, Prunus, etc. (weeping)
Morus alba
Populus trichocarpa, tremuloides, etc.
Prunus, Pyrus, etc. (fruiting)
Salix babalonica
Ulmus americana
Ulmus pumila

COMMON NAME

Walnut
Osage Orange
Weeping varieties of various mulberries,
crabapples, cherries, etc.
Fruiting Mulberry
Poplar & related species
Commercial Fruit Trees
Weeping Willow
American Elm
Siberian Elm

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