

Lehi City
Tree Selection
and Care
Guidebook



Lehi City
Parks, Trails and Trees Advisory Committee
April 2009



Lehi City Tree Selection and Care Guidebook

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“The True meaning of life is to plant trees, under whose shade you do not expect to sit.” ~Nelson Henderson

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Buying High Quality Trees

When you buy a high-quality tree, plant it correctly, and treat it properly, you and your tree will benefit greatly in many ways for many years. When you buy a low-quality tree, you and your tree will have many costly problems even if you take great care in planting and maintenance.

What Determines a Tree Quality?

A high-quality tree has:

- enough sound roots to support healthy growth.
- a trunk free of mechanical wounds and wounds from incorrect pruning.
- a strong form with well-spaced, firmly attached branches.

A low-quality tree has:

- crushed or circling roots in a small root ball or small container.
- a trunk with wounds from mechanical impacts or incorrect pruning.
- a weak form in which multiple stems squeeze against each other or branches squeeze against the trunk.

Any of these problems alone or in combination with the others will greatly reduce the tree's chances for a long, attractive, healthy, and productive life.

What to Look for When Selecting a Tree?

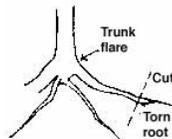
When buying a tree, inspect it carefully to make certain it does not have problems with roots, injuries, or form. Remember the acronym RIF; it will help you remember roots, injuries, and form.

Roots

Roots on trees for sale are available as one of three types:

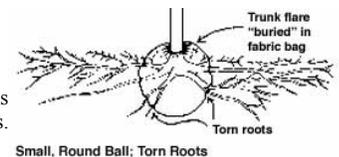
Bare-Root Stock (no soil; usually on small trees)

- Bare roots should not be crushed or torn.
- The ends of the roots should be clean cut.
- If a few roots are crushed, re-cut them to remove the injured portions. Use sharp tools. Make straight cuts. Do not paint the ends.
- The cuts should be made immediately before planting and watering.



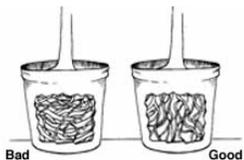
Root-Balled Stock (roots in soil held in place by burlap or some other fabric; the root ball may be in a wire basket)

- You should be able to see the basal trunk flare. The flare is the spreading trunk base that connects with the roots. Root balls should be flat on top. Roots in soil in round bags often have many major woody roots cut or torn during the bagging process. Avoid trees with many crushed or torn roots.
- The diameter of the root ball should be at least 10 to 12 times the diameter of the trunk as measured 6 inches above the trunk flare.
- After placing the root ball in the planting site, cut the ties and carefully pull away the burlap or other fabric. Examine any roots that protrude from the soil. If many roots are obviously crushed or torn, the tree may have severe growth problems. If only a few roots are injured, cut away only the injured portions. Use a sharp tool. Use care not to break the soil ball around the roots.
- Cut the wire on wire baskets. Place the basket into the planting site. Cut away at least the top two wires without disturbing the root ball. Inspect exposed roots for injuries. If many roots are injured, the tree may have serious growth problems. If the trunk flare has been buried, gently expose it before planting the tree, taking care not to damage the bark.



Small, Round Ball; Torn Roots

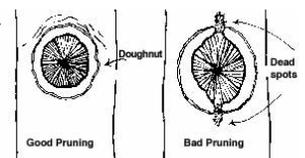
Container-Grown Stock



- Roots should not twist or circle in the container. Remove the root ball from the container. Inspect the exposed larger roots carefully to see whether they are twisting or turning in circles. Circling roots often girdle and kill other roots. If only a few roots are circling, cut them away with a sharp tool.
- Trunk flare should be obvious. Be on alert for trees planted too deeply in containers or trees "buried" in fabric bags.
- As with root-balled stock, you should be able to see the basal trunk flare with container-grown plants. If the trunk flare has been buried, gently expose it before planting the tree, taking care not to damage the bark.

Injuries

- Beware of injuries beneath trunk wraps. Never buy a tree without thoroughly checking the trunk. If the tree is wrapped, remove the wrap and inspect the trunk for wounds, incorrect pruning cuts, and insect injuries. Wrap can be used to protect the trunk during transit but should be removed after planting.
- Incorrect pruning cuts are major problems. Incorrect pruning cuts that remove or injure the swollen collar at the base of branches can start many serious tree problems, cankers, decay, and cracks.
- Incorrect pruning cuts that leave branch and leader stubs also start disease and defect problems. Do not leave stubs.



- A correct pruning cut removes the branch just outside of the collar. A ring, or “doughnut,” of sound tissues then grows around the cut. Do not make cuts flush to the trunk. The closing tissues may form only to the sides of the flush cuts. Trunk tissues above and below flush cut branches often die. When the heat of the sun or the cold of frost occurs, cracks or long, dead streaks may develop above and below the dead spots.

Form

- Good, strong form, or architecture, starts with branches evenly spaced along the trunk. The branches should have firm, strong attachments with the trunk.
- Squeezed branches signal problems. Weak branch unions occur where the branch and trunk squeeze together. As the squeezing increases during diameter growth, dead spots or cracks often begin to form below where the branch is attached to the trunk. Once this problem starts, the weak branch attachment could lead to branches cracking or breaking during mild to moderate storms.
- When several branches are on the same position on the trunk, the likelihood of weak attachments and cracks increases greatly. As the branches grow larger and tighter together, the chances for splitting increase.
- Avoid trees with two or more stems squeezing together. As stems squeeze together, cracks often form down the trunk. The cracks could start from squeezed multiple leader stems or where the two trunks come together.
- If you desire a tree with multiple trunks, make certain that the trunks are well separated at the ground line.
- Remember, trunks expand in diameter as they grow. Two trunks may be slightly separated when small, but as they grow in girth, the trunks will squeeze together.
- Look for early signs of vertical trunk cracks. Examine branch unions carefully for small cracks below the unions. Cracks are major starting points for fractures of branches and trunks. The small cracks could be present for many years before a fracture happens. Always keep a close watch for vertical cracks below squeezed branches and squeezed trunks.
- If your tree has only a few minor problems, corrective pruning may help. Start corrective pruning one year after planting. Space the pruning over several years.
- Remove broken or torn branches at the time of planting. After a year, start corrective pruning by removing the branches that died after planting.

For Additional Selection and Planting Information

Utah State University Extension Bulletin EC 460, *Selecting and Planting Landscape Trees*, is an excellent reference. Call USU at (801) 797-2251. Or visit any USU Extension office. An online USU Tree Browser is also available online at http://extension.usu.edu/forestry/UtahForests/UF_UtahTrees.htm

Tree Care

Don't Top Trees

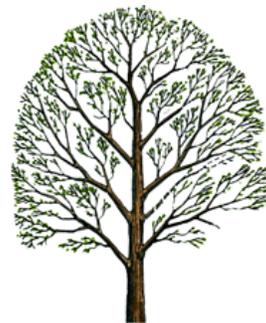
- Never cut main branches back to stubs. Many people mistakenly “top” trees because they grow into utility wires, interfere with views or sunlight, or simply grow so large that they worry the landowner.



- Unfortunately, the topping process is often self-defeating. Ugly, bushy, weakly attached limbs usually grow back higher than the original branches.
- Proper pruning can remove excessive growth without the problems topping creates. In addition, many arborists say that topping is the worst thing you can do for the health of a tree. It starves the tree by drastically reducing its food-making ability and makes the tree more susceptible to insects and disease.
- The appearance of a properly pruned tree is like a good haircut: hardly noticeable at first glance.

Use the 1/3 and 1/4 Rules for Pruning

- Never remove more than 1/4 of a tree's crown in a season.
- Where possible, try to encourage side branches that form angles that are 1/3 off vertical (10:00 or 2:00 positions).
- For most species, the tree should have a single trunk.
- Ideally, main side branches should be at least 1/3 smaller than the diameter of the trunk.
- If removal of a main branch is necessary, cut it back to where it is attached to another large branch or the trunk. Do not truncate or leave a stub.
- For most deciduous (broadleaf) trees, don't prune up from the bottom any more than 1/3 of the tree's total height.



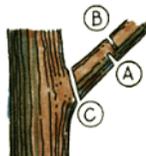
How to Make a Pruning Cut

Large Limbs:

A: Make a partial cut from beneath.

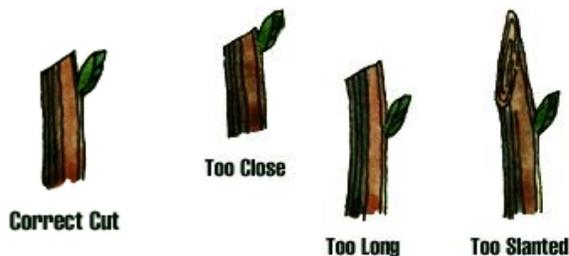
B: Make a second cut from above several inches out and allow the limb to fall.

C: Complete the job with a final cut just outside the branch collar.



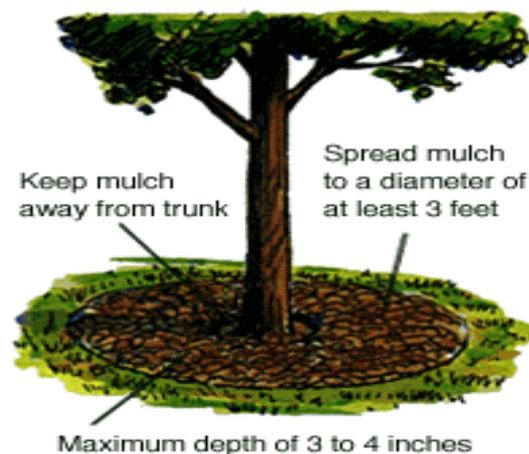
Small Branches:

Make a sharp clean cut, just beyond a lateral bud or other branch.



The Value of Mulch

A tree's best friend, mulch insulates soil, retains moisture, keeps out weeds, prevents soil compaction, reduces lawnmower damage, and adds an aesthetic touch to a yard or street. Remove any grass within the mulch area, and area from 3 to 10 feet in diameter, depending on tree size. Pour wood chips or bark pieces 2 to 4 inches within the circle, but not touching the trunk.

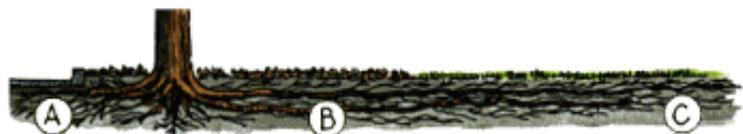


Where Roots Really Grow

A: Because roots need oxygen, they don't normally grow in the compacted oxygen-poor soil under paved streets.

B: The framework of major roots usually lies less than 8 to 12 inches below the surface.

C: Roots often grow outward to a diameter one to two times the height of the trees.



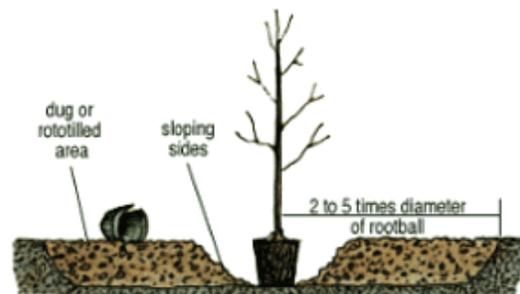
Girdling Kills Trees



- Girdling is any activity that injures the bark of a tree trunk and extends around much of the trunk's circumference.
- Such injuries, often caused by lawnmowers and weed trimmers, destroy the tree's most vital membranes, the layers that conduct water and minerals from the roots to the leaves and return the food produced by the leaves to the rest of the tree.

How to Plant a Containerized Tree

- Before choosing a planting location contact Blue Stakes (800-532-5000) for location of underground utilities.
- If a tree is planted correctly, it will grow twice as fast and live at least twice as long as one that is incorrectly planted.
- Ideally, dig or roto till an area one foot deep and approximately 5 times the diameter of the root ball. The prepared soil will encourage root growth beyond the root ball and results in a healthier tree.
- In transplanting, be sure to keep soil around the roots. Always handle your tree by the ball, not by the trunk or branches. Don't let the root ball dry out. Help prevent root girdling by vertically cutting any roots that show tendencies to circle the root ball.
- After placing the tree, pack soil firmly but not tightly around the root ball. Water the soil and place a protective 3-foot circle of mulch around the tree.



How to Plant A Bare-Root Tree

- It is best to plant bare-root trees immediately, in order to keep the fragile roots from drying out. If you can't plant because of weather or soil conditions, store the trees in a cool place and keep the roots moist.



- 1: Unpack tree and soak in water 3 to 6 hours. Do not plant with packing materials attached to roots, and do not allow roots to dry out.



- 2: Dig a hole, wider than seems necessary, so the roots can spread without crowding. Remove any grass within a three-foot circular area. To aid root growth, turn soil in an area up to 3 feet in diameter.



- 3: Plant the tree at a depth so that the top of the trunk flare is still visible, without crowding the roots. Partially fill the hole, firming the soil around the lower roots. Do not add soil amendments.



- 4: Shovel in the remaining soil. It should be firmly, but not tightly packed with your heel. Construct a water-holding basin around the tree. Give the tree plenty of water.



- 5: After the water has soaked in, place a 2-inch deep protective mulch area 3 feet in diameter around the base of the tree (but not touching the trunk).

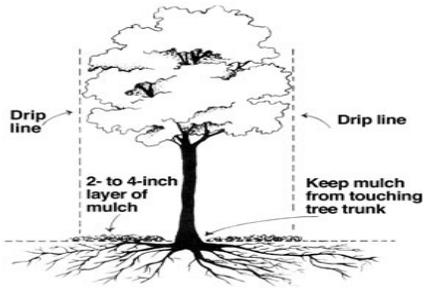


- 6: Water the tree generously every week or 10 days during the first year.

How to Properly Water Trees

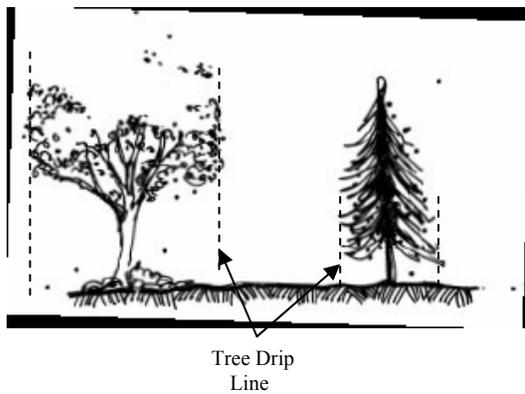
- When watering use low pressure to help water seep to a depth of at least 12 inches or use a deep root waterer attached to the end of a hose.
- Young trees need a deep watering every two to three days.
- Over watering is just as unhealthy for a tree as under watering. Care must be taken to make sure too much water isn't applied.
- To keep water from evaporating from the soil apply two to four inches of wood chips or organic mulch around the base of the tree.

- Established trees need deep watering once a week at the drip line (see figure below).



How to Properly Fertilize Trees

- Fertilizer Spikes:** Fertilizer spikes can deliver nutrients directly into the root zone below the turf line, but with a very limited distribution. This method, though somewhat costly, also fractures and aerates the soil, providing additional oxygen for proper root development in compacted soils. Again, label directions must be followed for successful treatment.



Class I Trees



The trees in this section are smaller trees which normally do not reach a large height or trunk diameter. They are ideal for planting beneath or near power lines and in parking strips that are at least four feet wide.

Hedge Maple (*Acer campestre*)



This is a smaller tree that has dark green leaves with a little bit of fuzz underneath. Leaves turn yellow and remain late into autumn.

Height: 25'

Spread: 25'

Growth Rate: Slow (<12" per year)

Advantages: Withstands many urban conditions.
No serious problems with diseases or insects.

Disadvantages: Not a good tree under power lines.

Amur Maple (*Acer ginnala*)



A tree with leaves that turn red or orange in the fall; it usually has a symmetrical shape.

Height: 15'

Spread: 15'

Growth Rate: Medium (12"-24" per year)

Advantages: Very cold hardy and usually requires little pruning.

Disadvantages: Does not live as long as other maples.

Bigtooth Maple (*Acer grandidentatum*)



This maple is native to Utah canyons. It is well adapted to our climate. The leaves turn a bright red in the fall, much more colorful than some of the other maple species.

Height: 25'

Spread: 15'

Growth Rate: Slow (<12" per year)

Advantages: A good street tree. Drought tolerant and withstands cold.

Disadvantages: Does not tolerate extremely wet soils.

Paperbark Maple (*Acer griseum*)



A graceful tree with cinnamon colored bark, which peels away to reveal reddish brown shades. Leaves turn reddish brown in the fall.

Height: 25'

Width: 20'

Growth Rate: Slow (<12" per year)

Advantages: A pretty tree without many disease or insect problems.

Disadvantages: Does not do well in high traffic areas or during drought.

Trident Maple (*Acer buergeranum*)



A small tree with interesting foliage. New leaves emerge bronze and turn a dark green. Fall color is yellow, orange, or red.

Height: 25'

Spread: 25'

Growth Rate: Slow (<12" per year)

Advantages: Tolerates drought and urban conditions well. No serious pest problems.

Disadvantages: Limited availability. Ice storms and heavy snow can cause damage. Pruning required to shape the tree when young.



Red Buckeye (*Aesculus pavia*)



Similar in appearance to the horsechestnut tree, this tree is distinguished by its small size. It serves well as a focal point in a landscape.

Height: 20'

Spread: 25'

Growth Rate: Medium (12"-24" per year)

Advantages: Has attractive red flowers that appear in May. Attracts wildlife, primarily birds, butterflies, and bees. Is somewhat shade tolerant.

Disadvantages: Is short lived and highly toxic if ingested. Sustains leaf scorch in hot, dry weather.



Eastern Redbud (*Cercis canadensis*)



The trunk of this tree is usually branched at the base with ascending branches and bright pink flowers in early May. It has heart shaped leaves.

Height: 25'

Spread: 25'

Growth Rate: Medium (12"-24" per year)

Advantages: Beautiful pink flowers during the spring.

Disadvantages: Susceptible to many diseases and insects.

Washington Hawthorn (*Crataegus phaenopyrum*)



This Hawthorn features reddish-purple leaves in the spring that turn dark green in the summer. Flowers appear in May with fruit in late summer.

Height: 25'

Spread: 25'

Growth Rate: Medium (12"-24" per year)

Advantages: Attractive fruits, flowers, and foliage. Very tolerant to urban stress.

Disadvantages: Sharp thorns on lower branches. May cause a dieback in the grass planted under the canopy. Heavy snow can break the branches.

English Hawthorn (*Crataegus laevigata*)



This hawthorn has an attractive growth habit in addition to handsome flowers and fruit. It grows well with very few thorns.
For best results as a street tree, choose a stock with a strong central leader.

Height: 15'

Spread: 15'

Growth Rate: Slow (<12" per year)

Advantages: Grows well in city conditions. Almost thorn less.

Disadvantages: Very susceptible to fire blight.

Rose of Sharon Tree Form (*Hibiscus spp.*)



This Rose of Sharon is a very low growing tree form with various colors of beautiful blossoms. It is a good choice for locations near power lines and narrow areas.

Height: 12'

Width: 6'

Growth Rate: Slow-Medium

Advantages: Attracts wildlife, primarily hummingbirds and butterflies. Attractive, showy flowers during the summer months. Salt tolerant.

Disadvantages: Can seed easily, causing a potential weed problem.

Goldenrain Tree (*Koelreuteria paniculata*)



Large hanging yellow flowers in summer and papery, lantern-like seed pods make this tree quite unique. Fall color is crimson, bronze.

Height: 25'

Width: 20'

Growth Rate: Fast (>24" per year)

Advantages: Very adaptable to urban environments and does not suffer from any serious insect problem.

Disadvantages: Fairly susceptible to some diseases.

Spring Snow Flowering Crabapple (*Malus spp.*)



This crabapple is a very popular tree with varying degrees of white or red flowers. This particular variety is fruitless.

Height: 20'

Spread: 20'

Growth Rate: Fast (>24" per year)

Advantages: Requires little pruning. Does not produce messy fruit.

Disadvantages: Susceptible to fire blight.

Flowering Plum (*Prunus cerasifera*)



Each spring, pink flowers emerge before the leaves. The foliage is a deep purple.

Height: 20'

Spread: 15'

Growth Rate: Medium (12"-24" per year)

Advantages: Beautiful dark purple leaves. Drought tolerant.

Disadvantages: May have weak branching structure. Prone to many diseases.

Flowering Cherry (*Prunus serrulata*)



Vase shaped branching and beautiful floral display are characteristics of this tree. Deep green foliage is attractive in spring and summer.

Height: 25'

Spread: 20'

Growth Rate: Medium (12"-24" per year)

Advantages: Provides beautiful floral displays. Drought resistant.

Disadvantages: Sensitive to pollution and has a relatively short life.

Flowering Chokecherry (*Prunus virginiana*)



“Canada Red” has leaves that emerge green and turn purple in early June. Good natural branching. Suckering at base can occur following establishment. Amur, Shubert, and Mayday are other good varieties.

Height: 25’

Spread: 20’

Growth Rate: Medium (12”-24” per year)

Advantages: Extremely hardy. Beautiful and colorful fruit, leaves, and flowers.

Disadvantages: Lives for only 20-25 years. Susceptible to various insects and black knot.

Japanese Tree Lilac (*Syringa reticulata*)



This tree has stiff branches with reddish brown bark. Flowers produce an attractive summer fragrance.

Height: 25’

Spread: 15’

Growth Rate: Medium (12”-24” per year)

Advantages: Relatively pest free.

Disadvantages: Somewhat susceptible to powdery mildew and lilac borer, but much less than common lilac.

Lavalle Hawthorn (*Crataegus x lavallei*)



This is a hybrid Hawthorn tree that produces nice white flowers in the spring and red fruit in the fall.

Height: 20'

Spread: 20'

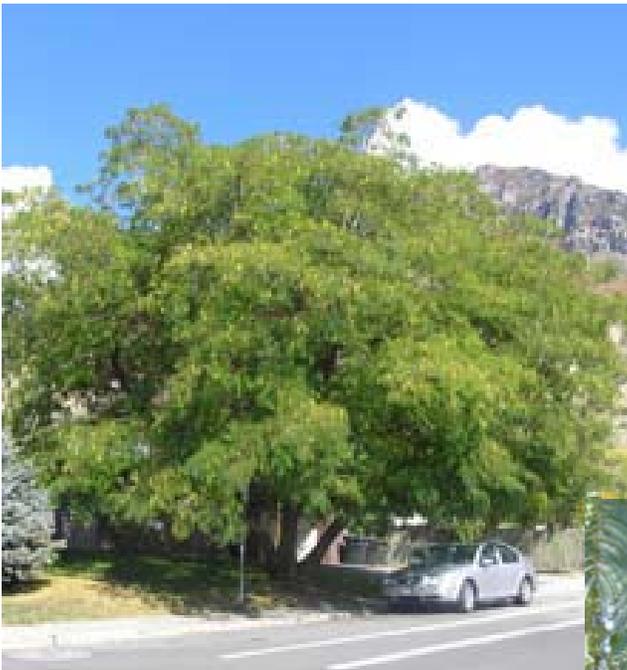
Growth Rate: Medium (12"-24" per year)

Advantages: Adaptable to many different pH levels in soils. Produces a pretty flower and fruit with the fruit persistent into the winter.

Disadvantages: Not as durable of a tree as other Hawthorn species. Intolerant of shade and is occasionally damaged by cold weather.



Silk Tree (*Albizia julibrissin*)



The Silk Tree has very fine small leaflets. The flower is very interesting; it is usually pink and has pink stamens that extend 1" or more. The chocolate mimosa is another variety that has purple leaves.

Height: 35'

Spread: 30'

Growth Rate: Fast (>24" per year)

Advantages: A unique tree that is not often planted in Lehi. Attractive, fine leaves and distinct flowers.

Disadvantages: Leafy out late in the season. Can be a messy tree.



Class II Trees



The trees in this section are considered medium sized. These trees are valued for their aesthetic and shade contributions. These trees are not for planting under power lines or in parking strips that are less than six feet wide.

Norway Maple (*Acer platanoides*)



Has dark green summer foliage that can turn yellow in the fall. This is a very popular and well known tree. Creates dense summer shade. 'Crimson King' and 'Crimson Sentry' are popular purple leaf cultivars.

Height: 45'
Spread: 35'
Growth Rate: Medium (12"-24" per year)

Advantages: Does well after being transplanted. Creates lots of shade during hot summers.

Disadvantages: Dark shade and shallow roots may prevent the growth of grass in lawns. Seedlings may become weeds in lawns.



Sycamore Maple (*Acer pseudoplatanus*)



A tree that is very similar to the Norway maple with leaves that resemble those of the American Sycamore.

Height: 30'
Spread: 25'
Growth Rate: Medium (12"-24" per year)

Advantages: Tolerant to many different environmental conditions.

Disadvantages: Requires pruning in order to maintain its shape.

Black Maple (*Acer nigrum*)



Is similar to the Sugar Maple but more tolerant of our local climate and soil conditions. Foliage has a drooping form and fall color is reddish orange.

Height: 45'

Spread: 25'

Growth Rate: Slow (<12" per year)

Advantages: Tolerates heat and drought well.

Disadvantages: Sensitive to road salt and compaction.

Common Hackberry (*Celtis occidentalis*)



Stately, vase shaped tree with a straight trunk and bright green foliage turning yellow in the fall. A reliable tree under windy conditions.

Height: 45'

Spread: 35'

Growth Rate: Fast (>24" per year)

Advantages: Very drought tolerant. Tolerant to wind, alkaline soil, salt, and air pollution. A good specimen tree.

Disadvantages: Dark purple fruit may drop in the fall.

Flowering Pear (*Pyrus calleryana*)



Produces yellow spring blossoms. This has become a very popular tree lately. In the fall the leaves are a red and a bright orange-red.

Height: 40'

Spread: 30'

Growth Rate: Fast (>24" per year)

Advantages: Extremely hardy in urban landscapes. Superior branch structure over older varieties.

Disadvantages: Susceptible to fire blight. Branching habit can become irregular in older trees. A shorter lived tree. Gives off a foul odor when in flower.

Autumn Purple Ash (*Fraxinus americana*)



A fast growing, hardy urban tree. Turns an orangemaroon to dark burgundy in the fall. Grows straight and sturdy.

Height: 45'

Spread: 45'

Growth Rate: Fast (>24" per year)

Advantages: Very hardy in urban environments. A beautiful tree during the fall after the leaves turn colors.

Disadvantages: Susceptible to drought. Somewhat susceptible to other diseases but not regularly.



Ginkgo / Maidenhair Tree (*Ginkgo biloba*)



Distinctive, fan-shaped light green leaves are soft in appearance. Autumn color is bright yellow. One of the most ancient trees on earth.

Height: 40'

Spread: 30'

Growth Rate: Slow (<12" per year)

Advantages: A fruitless tree. Tolerates urban stresses. Excellent fall color and usually free of pests.

Disadvantages: Female plant can produce a foul odor in its fruit as it gets older. Fruit can cause dermatitis in some people.

Honeylocust (*Gleditsia triacanthos*)



A hardy tree with finely textured leaves. Produces filtered shade.

Height: 45'

Spread: 40'

Growth Rate: Fast (>24" per year)

Advantages: Tolerant of salt, heat, drought, and other urban stresses. The small leaves provide shade without killing the grass underneath.

Disadvantages: Somewhat susceptible to a variety of pests, but trees are generally hardy.



Kentucky Coffeetree (*Gymnocladus dioica*)



An uncommon tree that is open spreading and produces short seed pods. The cultivar “Expresso” is mostly seedless and more vase-shaped.

Height: 55’

Spread: 35’

Growth Rate: Medium (12”-24” per year)

Advantages: A hardy tree that is adaptable to urban conditions. Remarkably free of diseases and insects.

Disadvantages: Seeds may become a cleanup issue in older trees.

Fruitless White Mulberry (*Morus alba*)



A fruitless tree that has become quite common in Utah.

Height: 40’

Spread: 35’

Growth Rate: Fast (>24” per year)

Advantage: Tolerant of heat and alkaline soil. Tolerant of compacted soils.

Disadvantages: Somewhat weak wood. Susceptible to very low, cold temperatures. May require a lot of pruning to maintain its form.

Dawn Redwood (*Metasequoia glyptostroboides*)



Deciduous fern-like foliage give the tree a fine texture. The bark is a reddish-brown.

Height: 70'

Spread: 35'

Growth Rate: Fast (>24" per year)

Advantages: A very interesting tree that is somewhat adaptable to different environments. Cleanup of the small fallen leaves has not been a problem.

Disadvantages: Growth is reduced on alkaline soils. Susceptible to a canker disease and mites while under stress.

Japanese Pagoda (*Sophora japonica*)



Has a round canopy with white/yellow flowers in late summer. Produces a pod like fruit.

Height: 35'

Spread: 30'

Growth Rate: Slow - Medium

Advantages: Tolerant of urban conditions. One of the few trees that flowers in late summer.

Disadvantages: Can cause constant cleanup because the leaves, flowers, and fruit parts fall at different times. Susceptible to a variety of pests.

European Hornbeam (*Carpinus betulus*)



Exceptional tree for street planting. Has a formal appearance requires little pruning. Fall color is yellow/orange. Bark is smooth gray. 'Fastigiata' is a columnar variety.

Height: 40'

Spread: 30'

Growth Rate: Slow-Medium

Advantages: Relatively low maintenance. Can be used for a wide variety of situations.

Disadvantages: Occasionally suffers from the two-lined chestnut borer which shortens the life of the tree.

European Beech (*Fagus sylvatica*)



Dark green to purple glossy foliage. Bark is smooth gray. The 'Pendula' variety should not be planted in parking strips. There are several different beautiful varieties. "Tri-Color" has green leaves with pink edges.

Height: 30'

Spread: 25'

Growth Rate: Slow (<12" per year)

Advantages: A beautiful tree that adds variety to the landscape. Can withstand shade.

Disadvantages: Some varieties suffer from sun scorch on the trunk when exposed to full sun.



Sweetgum (*Liquidambar styraciflua*)



This tree has a straight trunk with grayish bark. The root system is shallow and very widespreading. It has interesting leaves that are almost star shaped. Also produces a bur-like fruit that is persistent on the tree into the winter.

Height: 75'

Spread: 65'

Growth Rate: Medium (12"-24" per year)

Advantages: Can produce many bright colors. Very symmetrical when younger.

Disadvantages: Prone to a variety of pests and diseases. This tree does not do very well in Provo because of the cold temperatures and the high soil pH.

Autumn Blaze Maple (*Acer x freemanii*)



This is a nice tree that produces a brilliant red color in the fall, summer color is a medium green.

Height: 50'

Spread: 40'

Growth Rate: Fast (>24" per year)

Advantages: Very attractive fall color. Somewhat resistant to many pests. Does not produce seedlings that have to be weeded out.

Disadvantages: The bark can be easily scarred, care must be taken when mowing and weed eating around this tree

Mountain Ash (*Sorbus americana*)



A small tree with white, cream, or pinkish flowers. Produces a red fruit that persist into the winter.

Height: 35'

Width: 30'

Growth Rate: Slow (<12" per year)

Advantages: A good small landscaping tree. Color provides for diversity in the landscape.

Disadvantages: A relatively short service life. Often susceptible to fire blight, borers, and a variety of other pests, particularly when stressed.



European Alder (*Alnus glutinosa*)



The European Alder is a tree that is very good for wet sites or sites that are otherwise infertile. It is able to use nutrients in the soil in ways that other plants can't.

Height: 45'

Spread:

Growth Rate: Fast (>24" per year)

Advantages: Grows in very moist and infertile sites.

Disadvantages: Does not do well in the stress of urban environments. Susceptible to leaf miners.

Bald Cypress (*Taxodium distichum*)



A unique tree that has a buttressed bark. The leaves are small needles but are deciduous. Knees are formed only when planted near a body of water.

Height: 60'

Spread: 45'

Growth Rate: Medium (12"-24" per year)

Advantages: Tolerant of urban conditions. Somewhat unusual tree that has not been planted much in this area.

Disadvantages: Availability is somewhat limited. Does not do well in soils with a pH above 7 ½.

Tricolor Beech (*Fagus sylvatica*)



Dark green foliage with pink color on the outside of the leaf. Bark is smooth gray.

Height: 30'

Spread: 25'

Growth Rate: Slow (<12" per year)

Advantages: A beautiful tree that adds variety to the landscape. Can withstand shade. Unique multicolored leaves.

Disadvantages: Some varieties suffer from sun scorch when exposed to full sun.

Littleleaf Linden (*Tilia cordata*)



A pyramidal tree with sturdy upright growth. Has very fragrant yellow summer blossoms.

Height: 45'

Spread: 40'

Growth Rate: Medium (12"-24" per year)

Advantages: More heat and drought tolerant than other Lindens.

Disadvantages: Susceptible to a wide variety of pests, especially aphids. However, treatment is seldom needed.

Avalanche Birch (*Betula x 'Avalzam'*)



This is a relatively fast growing tree that provides lots of shade. The bark is brown but turns to white as the tree gets to be about three inches in caliper.

Height: 35'

Spread: 25'

Growth Rate: Medium-Fast

Advantages: Resistant to the bronze birch borer that is a problem in other birch trees.

Disadvantages: Can cause a small amount of debris on cement.

Class III Trees



Trees in this section are typically long-lived. They attain large heights and trunk diameters. These trees are not for planting under or near power lines or in parking strips that are less than 10 feet wide. When selecting a tree from this class, make sure there is ample room to accommodate it at maturity.

Tulip Tree / Poplar (*Liriodendron tulipifera*)



A large tree of the magnolia family. Flowers born high in the tree. Leaves are bright green and resemble a tulip.

Height: 80'
Spread: 45'
Growth Rate: Fast (>24" per year)

Advantages: A beautiful tree in landscape situations. Unique flowers and leaves that resemble tulips.

Disadvantages: Fast growth can lead to weak wood. Subject to sun-scald.



Swamp White Oak (*Quercus bicolor*)



Leaves are green on top and dusty white underneath. Leaves turn brown in fall. Grows well in local soil conditions, does exceptionally well in moist soils.

Height: 50'
Spread: 35'
Growth Rate: Medium (12"-24" per year)

Advantages: Tolerates drought, salt, and soil compaction in urban environments.

Disadvantages: Acorns can be a maintenance problem. Slightly susceptible to various pests. Chlorosis may occur in alkaline soils.

Bur Oak (*Quercus macrocarpa*)



A grand tree with large lobed leaves. Adaptable to a wide range of conditions. A valuable tree for urban wildlife.

Height: 70'
Spread: 65'
Growth Rate: Slow (<12" per year)

Advantages: Adaptable to a wide range of conditions and tolerant of dry soils, air pollution, and temperature extremes.

Disadvantages: Acorns can be a maintenance problem in some years. Transplant shock may last several years, causing slow growth.

English Oak (*Quercus robur*)



A long lived stately tree with small lobed leaves. Thick bark is furrowed and gray. Variety 'fastigiata' has an upright, columnar form.

Height: 55'
Spread: 45'
Growth Rate: Medium-Fast

Advantages: Tolerant of many soil conditions and resistant to drought and pollution.

Disadvantages: Golden oak scale can be fatal but occurs infrequently.



American Linden (*Tilia Americana*)



Large, heart-shaped leaves in dense canopy. Fragrant summer blossoms. Variety “Redmond” has a more pyramidal form and faster growth.

Height: 55’

Spread: 35’

Growth Rate: Medium (12”-24” per year)

Advantages: Reasonably adaptive to urban conditions. A very dependable growth habit.

Disadvantages: Intolerant of salt and somewhat sensitive to air pollutants. Older trees drop fruits for several weeks, causing litter problems.

Common Horsechestnut (*Aesculus hippocastanum*)



Provides dense summertime shade and showy flowers in May. Produces a chestnut fruit.

Height: 60’

Spread: 45’

Growth Rate: Medium (12”-24” per year)

Advantages: Tolerant of urban conditions. A long service life.

Disadvantages: Susceptible to leaf scorch during hot summers if under stressful conditions. Also susceptible to many pests.

Silver Linden (*Tilia tomentosa*)



The leaves of the tree are white on the underside, giving this tree its name. The trunk is also gray and smooth in its younger years. When older the bark becomes more furrowed.

Height: 60'

Spread: 40'

Growth Rate: Medium (12"-24" per year)

Advantages: Tolerates heat, drought and pollution well.

Disadvantages: Susceptible to aphids.

London Planetree / Sycamore (*Platanus x acerifolia*)



A towering tree with strong roots and branches. Bark peels off in patches. Leaves persist through fall and early winter. 'Bloodgood' is a common disease resistant cultivar.

Height: 90'

Spread: 60'

Growth Rate: Fast (>24" per year)

Advantages: A very hardy tree. Tolerates drought and compacted soil.

Disadvantages: Litter from the tree may be a maintenance problem. Will heave sidewalks. Fairly susceptible to many pests.

Lacebark Elm (*Ulmus parvifolia*)



This tree has flaky bark and smaller leaves than the American Elm. Is often confused with the Siberian Elm, which is not approved for planting in parking strips.

Height: 50'

Spread: 30'

Growth Rate: Medium (12"-24" per year)

Advantages: Very resistant to Dutch Elm Disease. A high tolerance to urban stress.

Disadvantages: May heave sidewalks if planted too close.



Japanese Zelkova (*Zelkova serrata*)



A beautiful, vase-shaped member of the Elm family. Fall color is yellow/orange.

Height: 50'

Spread: 30'

Growth Rate: Fast (>24" per year)

Advantages: Adaptable and tolerant of different soil conditions. Drought and wind tolerant.

Disadvantages: Can split at crotch because of narrow angle. Susceptible to crotch cankers and elm leaf beetle.

Red Oak (*Quercus rubra*)



A large medium growing tree. It has dark gray bark and requires a little more water than burr oak.

Height: 80'

Spread: 65'

Growth Rate: Medium (12"-24" per year)

Advantages: A strong tree that is tolerant of urban conditions. Produces a nice red color in the fall.

Disadvantages: As the tree matures its leaves become chlorotic (leaves turn an unnatural bright green).

Green Ash (*Fraxinus pennsylvanica*)



A large tree that has unusual branching patterns. The bark is a gray-brown color with scaly ridges

Height: 65'

Spread: 55'

Growth Rate: Fast (>24" per year)

Advantages: Withstands urban stress. Provides medium shade that allows grass to grow underneath.

Disadvantages: Requires frequent pruning and susceptible to damage in large storms. Insect and disease prone when stressed.

American Elm (*Ulmus americana*)



This is a large graceful tree that used to be widely planted throughout the United States. Most of these trees have been killed by Dutch elm disease.

Height: 90'
Spread: 90'
Growth Rate: Medium (12"-24" per year)

Advantages: Highly tolerant to urban conditions. A very large, graceful tree.

Disadvantages: Severely susceptible to Dutch elm disease. Also susceptible to Phloem necrosis. Only varieties resistant to these diseases should be planted. Trees must be continually monitored for signs of these diseases.



Northern Catalpa (*Catalpa speciosa*)



A fast growing tree with large heart-shaped leaves and conspicuous white flowers in June. Produces a fruit in a long pod.

Height: 60'
Spread: 55'
Growth Rate: Fast (>24" per year)

Advantages: Withstands hot dry conditions. Can be planted in a variety of environments.

Disadvantages: Fairly weak wood and branch breakage is common. The fruit can be messy.

American Beech (*Fagus grandifolia*)



A beautiful tree that is similar to the European Beech but larger in size. Has smooth gray bark and leaves turns golden bronze in the fall.

Height: 60'
Spread: 55'
Growth Rate: Slow (<12" per year)

Advantages: A beautiful tree that adds variety to the landscape. Can withstand shade.

Disadvantages: Some varieties suffer from sun scorch when exposed to full sun.

Drought Tolerant Trees



Common Name	Botanical Name	Page Number
Amur Maple	<i>Acer ginnala</i>	10
Bigtooth Maple	<i>Acer grandidentatum</i>	11
Black Maple	<i>Acer nigrum</i>	20
Bur Oak	<i>Quercus macrocarpa</i>	31
Common Hackberry	<i>Celtis occidentalis</i>	20
Eastern Redbud	<i>Cercis canadensis</i>	13
English Oak	<i>Quercus robur</i>	31
Flowering Cherry	<i>Prunus serrulata</i>	16
Flowering Plum	<i>Prunus cerasifera</i>	16
Ginkgo/Maidenhair Tree	<i>Ginkgo biloba</i>	22
Goldenrain Tree	<i>Koelreuteria paniculata</i>	15
Honeylocust	<i>Gleditsia triacanthos</i>	22
Japanese Zelkova	<i>Zelkova serrata</i>	34
Kentucky Coffeetree	<i>Gymnocladus dioicus</i>	23
Lacebark Elm	<i>Ulmus parvifolia</i>	34
Lavalle Hawthorn	<i>Crataegus x lavalleyi</i>	18
Littleleaf Linden	<i>Tilia cordata</i>	29
London Planetree/Sycamore	<i>Platanus x acerifolia</i>	33
Northern Catalpa	<i>Catalpa speciosa</i>	36
Silk Tree	<i>Albizia julibrissin</i>	18
Silver Linden	<i>Tilia tomentosa</i>	33
Swamp White Oak	<i>Quercus bicolor</i>	30
Sycamore Maple	<i>Acer pseudoplatanus</i>	19
Tatarian Maple	<i>Acer tataricum</i>	Not Featured
Trident Maple	<i>Acer buergeranum</i>	12

Trees Approved to Plant Near Power Lines



The trees in this chart are approved for planting directly under power lines.

Common Name	Botanical Name	Page Number
Amur Maple	<i>Acer ginnala</i>	10
Cockspur Hawthorn	<i>Crataegus crusgalli</i>	Not Featured
English Hawthorn	<i>Crataegus laevigata</i>	14
Flowering Crabapple	<i>Malus spp.</i>	15
Flowering Plum	<i>Prunus cerassifera</i>	16
Flowering Pear	<i>Pyrus calleryana 'Jaczam'</i>	21
Red Buckeye	<i>Aesculus pavia</i>	12
Rose of Sharon Tree Form	<i>Hibiscus spp.</i>	14
Service Berry	<i>Amelanchier canadensis</i>	Not Featured
Smooth Sumac	<i>Rhus glabra</i>	Not Featured
Staghorn Sumac	<i>Rhus typhina</i>	Not Featured
Tatarian Maple	<i>Acer tataricum</i>	Not Featured
Trident Maple	<i>Acer buergeranum</i>	12

These trees must be planted at least 10 feet from power lines:

Common Name	Botanical Name	Page Number
Bigtooth Maple	<i>Acer grandidentatum</i>	11
Eastern Redbud	<i>Cercis canadensis</i>	13
Flowering Cherry	<i>Prunus serrulata</i>	16
Flowering Chokecherry	<i>Prunus virginiana</i>	17
Goldenrain Tree	<i>Koelreuteria paniculata</i>	15
Hedge Maple	<i>Acer campestre</i>	10
Japanese Tree Lilac	<i>Syringa reticulata</i>	17
Paperbark Maple	<i>Acer griseum</i>	11
Washington Hawthorn	<i>Crataegus phaenopyrum</i>	13

If you have more questions concerning trees near power lines contact the Lehi City Power Department at (801) 768-9167.

Trees Not Authorized for Street Planting



The following species are not to be planted in any parking strip in Lehi without the written consent of the Public Works Director. These trees exhibit characteristics including but not limited to: extreme insect or disease susceptibility, soft or brittle wood, and/or limited cold or heat hardiness. Such problems often lead to excessive maintenance costs, hazards to other trees and potential public safety hazards.

Common Name	Botanical Name	Remarks
Black Locust	<i>Robinia pseudoacacia</i>	Extremely susceptible to boring insects. Brittle wood.
Boxelder Maple	<i>Acer negundo</i>	Soft wood that is subject to decay. Harbor box elder bugs which are a nuisance.
Cottonwood, Aspen, and Poplars	<i>Populus</i>	Trees in this family have soft wood and are subject to decay. Shallow roots.
Evergreens		Block clear vision between pedestrians and vehicle traffic. Often spread to wide for parking strips.
Orchard Trees		Fruit drop on sidewalks can be hazardous to pedestrians and a maintenance concern.
Purple Robe Locust	<i>Robinia ambigua 'Purple Robe'</i>	Very brittle wood. Susceptible to boring insects.
Russian Olive	<i>Eleagnus angustifolia</i>	Thorns, fruit, and growth habit are unsuitable for street tree use.
Siberian Elm	<i>Ulmus pumila</i>	Brittle wood and weak branching. Invasive spread from seeding. Incorrectly referred to as Chinese Elm.
Silver Maple	<i>Acer saccharinum</i>	Becomes chlorotic in our local soils. Soft wood and decay problems.
Sunburst Honeylocust	<i>Gleditsia triacanthos 'Sunburst'</i>	Suceptible to many pests.
Thorned Honeylocust	<i>Gleditsia triacanthos</i>	Hazardous thorny branches. Messy seed pods. Select thornless varieties for planting along City streets.
Tree of Heaven	<i>Ailanthus altissima</i>	Very brittle wood and weak branching. Seeding makes this tree invasive.
Willow	<i>Salix</i>	Soft wood subject to decay. Shallow roots. Aphids.

Trees Native to Utah



The following trees are native or naturalized (originally planted but reproducing naturally) to Utah:

Common Name	Botanical Name
Pines	
Bristlecone Pine	(<i>Pinus Longaeva</i>)
Limber Pine	(<i>Pinus Flexilis</i>)
Lodgepole Pine	(<i>Pinus Contorta</i>)
Ponderosa Pine	(<i>Pinus Ponderosa</i>)
Pinyon Pine	(<i>Pinus Edulis</i>)
Singleleaf Pinyon	(<i>Pinus Monophylla</i>)
Spruces	
Blue Spruce	(<i>Picea Pungens</i>)
Engelmann Spruce	(<i>Picea Engelmannii</i>)
Douglas-Fir	
Douglas-Fir	(<i>Pseudotsuga Menziesii</i>)
True Firs	
Subalpine Fir	(<i>Abies Lasiocarpa</i>)
White Fir	(<i>Abies Concolor</i>)
Junipers	
Rocky Mountain Juniper	(<i>Juniperus Scopulorum</i>)
Utah Juniper	(<i>Juniperus Osteosperma</i>)
Maples	
Boxelder	(<i>Acer Negundo</i>)
Canyon Maple	(<i>Acer Grandidentatum</i>)
Norway Maple	(<i>Acer Platanoides</i>)
Rocky Mountain Maple	(<i>Acer Glabrum</i>)
Poplars And Aspen	
Balsam Poplar	(<i>Populus Balsamifera</i>)
Black Cottonwood	(<i>Populus Trichocarpa</i>)
Fremont Cottonwood	(<i>Populus Fremontii</i>)
Narrowleaf Cottonwood	(<i>Populus Angustifolia</i>)
Quaking Aspen	(<i>Populus Tremuloides</i>)

Common Name	Botanical Name
Willows	
Crack Willow	(<i>Salix Nigra</i>)
Peachleaf Willow	(<i>Salix Amygdaloides</i>)
Ashes	
Green Ash	(<i>Fraxinus Pennsylvanica</i>)
Singleleaf Or Dwarf Ash	(<i>Fraxinus Anomala</i>)
Velvet Or Modesto Ash	(<i>Fraxinus Velutina</i>)
Oaks	
Gambel Oak	(<i>Quercus Gambelii</i>)
Shrub Live Oak	(<i>Quercus Turbinella</i>)
Wavyleaf Oak	(<i>Quercus Undulata</i>)
Other Species	
Blue Elder	(<i>Sambucus Cerulea</i>)
California Or Western Redbud	(<i>Cercis Occidentalis</i>)
Cliffrose, Quininebush	(<i>Cowania Mexicana</i>)
Common Chokecherry	(<i>Prunus Virginiana</i>)
Common Or Western Hoptree	(<i>Ptelea Angustifolia</i>)
Curleaf Mountain-Mahogany	(<i>Cercocarpus Ledifolius</i>)
Desertwillow	(<i>Chilopsis Linearis</i>)
Greene Mountain-Ash	(<i>Sorbus Scopulina</i>)
Honey Mesquite	(<i>Prosopis Juliflora</i>)
Netleaf Hackberry	(<i>Celtis Reticulata</i>)
New Mexico Locust	(<i>Robinia Neomexicana</i>)
Red-Osier Dogwood	(<i>Cornus Sericea</i>)
Russian-Olive	(<i>Elaeagnus Angustifolia</i>)
Saskatoon, Western Serviceberry	(<i>Amelanchier Alnifolia</i>)
Thinleaf Alder	(<i>Alnus Tenuifolia</i>)
Utah Serviceberry	(<i>Amelanchier Utahensis</i>)
Water Birch	(<i>Betula Occidentalis</i>)

Evergreen Trees



Common Name	Botanical Name	Height (feet)	Spacing (feet)	Remarks
Arborvitae	<i>Thuja orientalis</i>	varies	10-15	Vertically arranged sprays of evergreen, deer love.
Cedar, Blue Atlas	<i>Cedrus atlantica</i> <i>Glauca</i>	30	15	Silver blue needles and irregular.
Fir, Concolor	<i>Abies concolor</i>	30-50	15-20	Green to blue-green to almost silver, deer love.
Fir, Douglas	<i>Pseudotsuga mensiesii</i>	40-80	20	Flattish blue-green needles, deer love.
Incense-cedar	<i>Calocedrus decurrens</i>	30-50	8-15	Gray-green to red-brown bark.
Juniper, Chinese	<i>Juniperus chinensis</i>	50-60	Varies	Blue-green foliage.
Juniper, Rocky Mountain	<i>Juniperus scopulorum</i>	30-40	3-15	Light green to silver-blue color.
Juniper, Utah	<i>Juniperus osteosperma</i>	10-30	10-30	Yellowish green foliage.
Pine, Austrian	<i>Pinus nigra</i>	50-60	20-40	Dark green almost black green needles.
Pine, Scotch	<i>Pinus sylvestris</i>	30-60	30-40	Bark becomes orangish brown and flakes off.
Pine, Vanderwolfe	<i>Pinus flexilis</i> <i>Vanderwolfe</i>	20-30	10-15	Broad pyramidal shape.
Redcedar, Eastern	<i>Juniperus virginiana</i>	40		Columnary evergreen, silver-gray berries birds love.
Spruce, Colorado	<i>Picea pungens</i>	30-60	10-20	Use <i>Fat Albert</i> , <i>Hoopsi</i> or <i>Bakerii</i> -less appealing to deer.

Trees for Elevations Above 4,500 Feet



Common Name	Botanical Name	Height (feet)	Spacing (feet)	Remarks
Hackberry, Common	<i>Celtis occidentalis</i>	40-60	40	Gray bark is covered with corky warts and ridges.
Pinyon Pine	<i>Pinus edulis</i>	10-40	10	Bruised twigs smell sweet.
Rocky Mt. Juniper	<i>Juniperus scopulorum</i>	30-40	20	High drought tolerance.
One seed Juniper	<i>Juniperus monosperma</i>			Tree, often looks like a shrub.
Gambel Oak	<i>Quercus gambelii</i>	To 35	Random	This is a thicket forming tree, good fall color.
Netleaf Hackberry	<i>Celtis reticulata</i>	30	15	Very hardy tree, found often with hawthorn.
Skunkbush sumac	<i>Rhus trilobata</i>	5-10	Random	Another thicket forming tree, nice red fall color.
Smooth sumac	<i>Rhus glabra</i>	5-10	Random	Suckering plant in stands with pleasant aroma, scarlet in fall.
Fleshy Hawthorn	<i>Crataegus succulenta</i>	15-20	10	Fruit-bearing tree with nice flowers, scaly bark, attracts birds.
Chokecherry	<i>Prunus Virginia</i>	25-30	15	Hardy. Single or multi-stemmed thicket. Flowers. Fall colors.
Pin Cherry	<i>Prunus pennsylvanica</i>	30-40	20	Small white flower and drupe. Native. Called fire cherry.
New Mexico locust	<i>Robinia neomexicana</i>	25	15	Can be used in thicket setting or alone, good flowers.
Bigtooth Maple	<i>Acer grandidentatum</i>	30	15	Beautiful large lobed leaves.
Utah serviceberry	<i>Amelanchier utahensis</i>	20	15	Nice xeric small tree, good fall color, attracts wildlife.
Black Hawthorn	<i>Crataegus douglasii</i>	30	15	Fruit bearing tree with thorns and showy flowers.

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