Tree Selection, Planting & Maintenance Guide Garden City Parks & Tree Board

Selecting the "Right Tree for the Right Place"

Tree selection is one of the most important investment decisions you will make when landscaping a new home, replacing a tree lost to damage or disease, or adding a tree to the existing landscape. Matching the tree to the site is a very important consideration. After careful study of the landscape needs, soil, planting site requirements and wind and sun exposure, a number of suitable tree species, varieties or cultivars may be found for the site. The objective is to select a tree that will perform well and satisfy the landscape needs with minimal problems.

A question frequently asked of tree experts is "What tree should I plant?" Answering the following eleven questions prior to beginning the selection process will help determine which tree is the "Right Tree for the Right Place".

- 1. Why is the tree being planted?
- 2. Will the tree provide shade, fruit, seasonal color or act as a windbreak or screen?
- 3. What is the size and location of the planting site?
- 4. Does the space lend itself to a large, medium, or small tree?
- 5. Are there overhead or underground utilities in the vicinity?
- 6. Is there adequate clearance for sidewalks, patios or driveways?
- 7. Are there other trees in the area?
- 8. Is the soil type sandy, clay, loam, acid or alkaline?
- 9. Is the soil deep, fertile and well drained or is it shallow, compacted and infertile?
- 10. What type of maintenance are you willing to provide?
- 11. Will you have time to water the newly planted tree until it is established?

Tree Selection

After answering the eleven questions, you are ready to select a species, variety or cultivar for the planting site. Using the information gathered about the site conditions, balanced with your personal aesthetic preferences, select the trees suitable for the site from the Garden City Parks & Tree Board Recommended Tree List. Select alternative trees because it is unlikely that a single retailer will have every tree on the list in the retailer's inventory. Before purchasing a tree not on the recommended list, call the Garden City Parks Department for additional information. Unless you enjoy experimentation, avoid hasty or impulsive tree purchases.

Finding Your Tree at the Nursery

When choosing trees at the retailer, be sure to select a high quality product. Things to look for in a deciduous tree are healthy leaves or buds, a straight well-developed leader and healthy bark. Look to make sure the trunk and the limbs are free of insect damage or mechanical injury. The ideal spacing between branches is 10-18" for most species. Branches should be well distributed around the trunk. The trunk should be tapered. Low branches help develop trunk taper, promote growth, and prevent sunscald.



Tree Planting Tips ...

When To Plant? The ideal time to plant deciduous trees is during the dormant season – in the fall after leaf drop or early spring before bud break. This period of cool weather allows plants to begin root establishment in their new location, before spring rains and summer heat stimulate new top growth. Tree planting may be extended through spring if trees receive regular care.

How Deep Should Structural Roots Be? Generally, the uppermost structural roots (two or more) of a young tree should be within 1 to 3 inches of the soil surface, measured 3 to 4 inches from the trunk. As a tree matures, roots thicken faster on the topside, reducing the amount of soil above the structural roots and forming root flare. For tree survival on landscape sites with poorly drained soil, structural roots may need to be shallower. Under extremely wet conditions, structural roots may need to be at, or slightly above, surrounding grade.

Planting Process: If the structural roots in the root ball are located within 3 inches of the soil surface (illustrated to the right), the top of the root ball should be placed no lower than the level of the existing grade, preferably one or two inches higher than existing grade to allow for settling. Dig the planting hole approximately two times wider and no deeper than the root ball. After preparing the site, place the tree in the hole by lifting the tree by the root ball (never by the trunk). Set the root ball on solid ground in the hole, not on loose backfill; this eliminates settling. Remove container-grown trees from the container and cut any circling roots to prevent the development of girdling roots, which may cause death of the tree in later years. When planting balled and burlapped trees remove all wire. When the tree is in the hole, carefully cut away as much of the burlap as possible and leave no burlap exposed to the air above the soil surface. It is not necessary to add peat moss or manure to the soil in the planting hole. Using the soil dug from the hole, backfill around the tree. Add water to settle the soil and prevent air pockets, filling from the bottc n up.

Watering: Keep the soil moist l ut not saturated.

Staking: Stake tree properly to keep root hall from shifting. The main tree stem must be able to move; if it is too rigid, root growth, trunk diameter and tree height will be adversely affected. Remove stakes and straps after roots are established, usually one or two growing seasons. Check the straps at least twice each year and loosen if necessary to prevent girdling.

<u>Fertilizing:</u> Fertilization at planting is not necessary - no nitrogen for at least one year! Nitrogen, which encourages top growth, should only be applied after new roots are established.

<u>Mulching:</u> Mulching is one of the most beneficial things a homeowner can do for the health of a tree. Mulch conserves soil moisture, reduces competition from other plants and prevents mower and trimmer injury. Mulch can give planting beds a uniform and well-maintained look. Mulch should be two inches in depth for 2- to 3- inch-caliper trees and not less than four feet in diameter. Later applications to "refresh" the mulch should not increase this depth. Keep the mulch away from the trunk of the tree. Avoid thick layers of mulch around the base of the tree (often called "volcano mulching"), which can promote diseases, root rot and restrict oxygen flow to roots. Do not pile the extra soil around the base of the tree and use mulch to hide it. Remove excess soil from the planting site. Avoid organic material that can mat down, like grass clippings.







Pruning: At the time of planting, remove only damaged branches. During the first 3 to 10 years, foliage is necessary to establish new roots. Suckers and shoots may grow from the ground near the base of the trunk at any time and should be removed. Avoid excessive or severe pruning or thinning. Remember, leaves make food for the tree. Be systematic and spread major pruning over several years to avoid excessive shock to the tree. About every 3 years remove dead branches, branches with weak crotches and crossing or rubbing ("interfering") branches. When the tree is tall enough to begin pruning for structure, remove interfering branches, branches with weak, narrow crotches and select primary and secondary branches. This is the time to begin the process of raising the height of the lowest branch by pruning away some of the lower branches. After the first ten years, the tree should need pruning only once every 5 to 10 years. Remember, a branch that is 5 feet from the ground today, will be 5 feet from the ground for the life of the tree! After a tree becomes mature, only prune every 7 to 10 years to remove dead, defective and interfering branches. As the very mature tree begins decline, it may be necessary to increase the frequency of pruning to every 3 years to remove dead and defective branches.



For more information, contact the Garden City Parks Department at 620-271-1574. Also, refer to the publication titled "Garden City Parks & Tree Board Recommended Tree List".

Illustrations courtesy of the Kansas Forestry Service

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Garden City Parks & Tree Board Recommended Tree List

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				LAN	DSCAPE			ENVIRONMENT
	N	IATUR	RE SIZE	FLOWER		LE	AF	
Common Name (Botanical Name)	HEIGHT	SPREAD	<u>SHAPE</u>	COLOR	<u>SEASON</u>	<u>COLOR</u>	<u>SEASON</u>	ADDITIONAL COMMENTS
SMALL TREES, 30' TALL C	OR LESS	5						•
Cherry, Canadian Red Prunus virginiana 'Canada Red'	25	20	Upright, spreading, rounded	White	Spring	Green, changing to reddish purple	Spring to summer	Straight trunk,well distributed branches, full rounded crown, bright red leaves; tends to form suckers.
Crabapple, Adams <i>Malus 'Adams'</i>	20	20	Dense, rounded	Pink	Spring	Green with reddish tint	Spring	Persistent, dark and glossy 5/8" fruit; very resistant to disease.
Crabapple, Centurion Malus 'Centurion'	20	15	Narrow, upright	Rose-red	Spring	Purple, fading to bronze	Spring	Glossy 5/8" cherry red fruit, attractive for several months; disease resistant, but susceptible to scab; vigorous growth rate.
Crabapple, David <i>Malus 'David</i> '	12	12	Compact, round	White	Spring	Light green, glossy	Spring	Scarlet 1/2" fruit; slight fireblight susceptibility; good scab, mildew and Japanese beetle resistance.
Crabapple, Indian Magic Malus 'Indian Magic'	15	15	Upright, spreading	Deep pink	Spring	Dark green	Spring	Small glossy red fruit, changing to orange and persisting; moderately susceptible to scab and slightly to rust.
Crabapple, Indian Summer Malus 'Indian Summer'	18	20	Rounded	Rose-red	Spring	Bronze-green	Spring; Summer	Bright red, attractive, very persistent 5/8"-3/4" fruit; great fall color; good scab, excellent fireblight, rust and mildew resistance; vigorous growth rate.
Crabapple, Prairiefire Malus 'Prairiefire'	20	20	Upright, spreading to rounded	Bright pinkish red	Spring	Red-maroon, aging reddish green	Spring; Summer	Dark red-purple 3/8"-1/2" persistent fruit; somewhat cone shaped and persistent, very resistant; vigorous growth rate.
Crabapple, Profusion Malus 'Profusion'	20	20	Upright, spreading	Pink	Spring	Purple, fading to bronze	Spring; Summer	Oxblood red 1/2" persistent fruit; moderately susceptible to powdery mildew, scab and fireblight; vigorous growth rate.
Crabapple, Radiant Malus 'Radiant'	25	20	Broad, round crown	Red buds; pink blooms	Spring	Reddish-purple, maturing to green	Spring; Summer	Bright red 1/2" persistent fruit,very susceptible to scab
Crabapple, Spring Snow Malus 'Spring Snow'	25	22	Dense, oval	White	Spring	Medium green	Summer	Few to no fruit, severely susceptible to scab, slightly susceptible to cedar apple rust and fireblight
Hawthorne, Cockspur Crataegus crus-galli	20-25	20-25	Rounded spreading	Small white	Spring	Glossy, dark green; orange to bronze	Summer; Fall	Single or multi-stemmed; ornamental, small fall fruit; specify thornless variety; full sun; slow to medium growth rate
Hawthrone, Lavalle Crataegus x lavallei	28	20	Irregular vase shaped	White	Spring	Dark green, leathery bronze	Summer; Fall	Full sun, orange 5/8"-3/4" fruit, very showy in fall, coppery red, free of rust & appears more adaptable than other hawthorns; slow to medium growth rate
Goldenrain Tree Koelreuteria panaculata	20-30	20-30	Round vase	Yellow	Summer	Yellow	Fall	Summer green foliage turns yellow in fall; large yellow flowers are followed by green fruit that changes to yellow and then brown; partial shade to full sun; heat tolerant; relatively pest free; medium growth rate; attracts boxelder bugs; readily reseeds
Korean Sun Pear Pyrus fauriei 'Westwood'	12	15	Compact, round	White	Spring	Red to Purple Red	Fall	Tends to fall color earlier than 'Bradford'; it's crotch angles are wider than 'Bradford'; shows good urban soil tolerance; hardier than the Callery pears
Lilac, Japanese Syringa reticulata	20-30	15-20	Oval	White	Summer	No color	Fall	Has profuse small white flowers in the beginning of summer; recovers slowly from bark damage, protect with plastic around the base of young trees or mulch; ornamental bark; prefers full sun; may be suseptible to borers and scale; resistant to powdery mildew; medium growth rate
Acer truncatum				Yellow wings				
Maple, Tatarian Acer tataricum	20	20	Dense.oval	Bright Red	Late Summer	Yellow	Fall	Slow to medium growth rate; full sun is best, but can take light shade; may produce unwanted seedlings; foliage drops early; larger leaves and more tolerant of alkaline soil than Amur Maple; may sucker; tolerates heat and wind; medium growth rate
Mulberry, Weeping Morus alba pendule 'Chaparral'	12	16	Weeping	Yellow-green catkins	Spring	Dark green; brown	Summer; Fall	Adaptable, long-lived; cultivar shapes range from rounded to columnar; specify powdery mildew resistant cultivar; full sun; slow to medium growth rate
Redbud, Eastern <i>Cercis canadensis</i>	20-30	30	Rounded	Purple	Spring	No Color	Fall	Heart shaped leaves and long seedpods in the fall; sun to partial shade; seed pods attract wildlife; no limiting disease problems; medium growth rate; do not over water
Western Soapberry Sapindus drummondii	25-30	25-40	Rounded	White-Yellow	Spring	Yellow	Fall	Native; compound leaves; translucent, golden (inedible) berries persist in winter; few disease or insect problems; tends to sucker; medium growth rate

MEDIUM TREES, 30' TO 6<u>0' TALL</u>

Chinese Pistache Pistacia chinensis	25-35	25-35	Oval	Red	Spring	Orange/red	Fall	Flowers occur on previous year's wood, full sun, grows 1'1"/yr over a 10 year period; medium growth rate
Elm, Allee	50	35	Upright vase	None		Yellow-orange to	Fall	Bark exfoliates in a mosaic pattern, tolerant to dutch elm disease, phloem necrosis and

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Elm, Frontier <i>Ulmus 'Frontier'</i>	40	30	Broadly oval	None		Burgandy	Fall	Tolerant to dutch elm disease and phloem nucrosis, moderately resistant to elm leaf beetle
Elm, Homestead <i>Ulmus 'Homestead'</i>	55	35	Narrow oval	None		Yellow	Fall	Resistance to dutch elm disease, yet is susceptible to elm leaf beetle; rapid growth rate
Elm, Lacebark <i>Ulmus parvifolia</i>	40-50	35-50	Rounded	Green	Fall	Red, Yellow	Fall	Bark is mottled, exfoliates in irregular patches exposing lighter bark, excellent, tough and durable tree; medium growth rate
Elm, Pioneer <i>Ulmus 'Pioneer'</i>	50	50	Rounded			Yellow	Fall	Dutch elm resistant, dense canopy, susceptible to elm leaf beetle; rapid growth rate
Elm, Prospector <i>Ulmus wilsoniana 'Prospector'</i>	40	30	Vase			Yellow	Fall	Offers American elm like habit, high resistance to dutch elm disease and elm leaf beetle
Hackberry <i>Celtis occidentalis</i>	45-60	40-50	Round	Green	Spring	Yellow	Fall	Dark purple fruit ripening in Sept-Oct, nipple gall disfigures leaves no damage to tree; medium growth rate
Hornbeam, European <i>Carpinus betulus</i>	35	25	Pyramidal	None		Yellow	Fall	Prefers well drained soils, will show signs of leaf scorch, plant in protected site; slow growth rate
Linden, American (Basswood) <i>Tilia americana</i>	40-60	35-50	Oval, Pyramid	Yellow - Green	Summer	Yellow	Fall	Fragrant flowers in mid-late June, bees make finest honey from these flowers; medium growth rate
Linden, Littleleaf <i>Tilia cordata</i>	50-60	40	Oval	Yellow	Summer	Yellow	Fall	Excellent shade tree for lawn areas; medium growth rate

				LAN	IDSCAPE		ENVIRONMENT	
Common Namo			E SIZE	FLOWER		LEAF		
(Botanical Name)	HEI GH	SPF EAL	<u>SHAPE</u>	COLOR	<u>SEASON</u>	COLOR	<u>SEASON</u>	ADDITIONAL COMMENTS
Linden, Silver <i>Tilia tomentosa</i>	50-60	25-35	Oval	Yellow	Early Summer	Yellow	Fall	Good street tree as it tolerates heat & drought better than other lindens, less prone to insect damage; medium growth rate
Locust, Purple Robe <i>Robinia pseudoacacia</i>	30-50	20-35	Oval	Lavender	May-June	Yellow	Fall	Grows 2' or better/year, extremely fragrant flower, prune in late summer or fall-not spring; fast growth rate
Maple. Caddo Sugar Acer saccharum 'Caddo'	30-50	45	Oval	Green, Yellow	Apr-May	Red, Yellow	Fall	Extremely heat and drought tolerant, beautiful fall color; slow to medium growth rate
Maple, Norwegian Sunset Acer 'Norwegian Sunset'	35	25	Oval			Yellow-orange to red	Fall	Good branch structure & uniform canopy
Maple,Pacific Sunset Acer 'Pacific Sunset'	30	25	Upright spreading			Yellow-orange to bright red	Fall	Finer branching structure than norwegian sunset & colors earlier in fall
Northern Catalpa <i>Catalpa speciosa</i>	40-60	20-40	Oval	White	Spring-Summer	Yellow	Fall	Withstands wet or dry locations as well as alkaline soils, sun or part shade, withstands extremely hot & dry conditions; medium to fast growth rate
Oak Chinkapin <i>Quercus muehlenbergii</i>	40-50	40-80	Rounded	Brown	Spring	Yellow	Fall	No particular disease or insect problems; medium growth rate
Oak, English Quercus robur	40-60+	40-60	Broadly Rounded	Yellow-green catkins	Spring	Dark green; brown	Summer; Fall	Adaptable; long-lived; cultivar shapes range from rounded to columnar; specify powdery mildew resistant cultivar; full sun; produces acorns; slow to medium growth rate
Osage Orange <i>Maclura pomifera var. inermis</i>	35	35	Rounded	Green	Late Spring	No color	n/a	Also called hedge apple, a tough durable native tree, select male trees without fruit; medium growth rate
Pagodatree, Japanese <i>Sophora japonica</i>	40-60	40-60	Round	White-Yellow	Late Summer	Yellow	Fall	Compound leaves; tolerant of alkaline soil; well drained soil; can be long-lived; pea-like pods in winter; 25 years to flower; few disease or insect problems; legume; medium growth rate
Pear, Aristocrat Pyrus calleryana 'Aristocrat'	30-40	20-25	Broadly pyramidal	White	Spring	Lustrous dark green; yellow to red	Summer; Fall	Later blooming; fewer flowers; fruit in fall; less prone to breakage than Bradford; somewhat suseptible to fireblight; heat tolerant; full sun; medium to rapid growth rate
Pear, Capital Pyrus calleryana 'Capital'	35	15	Columnar	White	Spring	Medium green, very glossy; reddish-purple	Summer; Fall	Central leader; fruit in fall; less prone to breakage than Bradford; somewhat suseptible to fireblight; heat tolerant; full sun; medium to rapid growth rate
Pear, Chanticleer - Cleveland Select Pyrus calleryana 'Chanticleer'	40	15	Upright narrowly pyramidal	White	Spring	Green glossy; reddish	Spring; Fall	Multiple leaders; fruit in fall; less prone to breakage than Bradford; fireblight tolerant; heat tolerant; full sun; medium to rapid growth rate

TALL TREES, MORE THAN 60'

Elm, Accolade <i>Ulmus japonica x wilsoniana</i> <i>'Morton'</i>	70	60	Vase	None		Glossy dark green; yellow	Summer; Fall	Vase shaped with arching branches, resistant to elm leaf beetle, tolerant to dutch elm disease and phloem necrosis
Honeylocust, Thornless <i>Gleditsia triacanthos var. inermis</i>	30-70	50	Oval	Yellow	May-June	Yellow	Fall	Leaves fall early; full sun, one of our most adaptable native tree but over used, current borer problems with stress; fast growth rate

Kentucky Coffeetree (Male) <i>Gymnocladus diocus</i>	30-70	45-60	Oval	White	Spring	Yellow	Fall	One of the last trees to leaf out in spring; brown leathery pods 5-10" long in fall; holds pods through winter; slow to medium growth rate
Oak, Bur <i>Quercus macrocarpa</i>	70-80	60-80	Round	Brown	Spring-Summer	Yellow	Fall	Native; prefers well-drained soil; full sun; very long life; difficult to transplant large caliper trees; produces acorns; slow growth rate
Oak, Sawtooth <i>Quercus acutissima</i>	70	50	Pyramidal	Brown	Spring	Bright yellow	Fall	Fast-growing for an oak; may show some chlorosis in more alkaline soils; prefers well- drained soil; full sun; produces acorns; no serious pest or disease problems; medium growth rate
Oak, Shumard <i>Quercus shumardii</i>	60-80	35-60	Oval	Brown	April-May	Red-orange	Fall	Native; prefers well-drained soil; full sun; long lived; may be difficult to transplant; produces acorns; no serious pest or disease problems; slow to medium growth rate
Pecan <i>Carya illinoensis</i>	70-100	40-75	Oval	Green or Yellow	Early Spring	Yellow-green	Fall	Native; edible nuts; prefers moist soil; purchase hardy, northern grown nursery stock; slow to medium growth rate
Black Walnut <i>Juglans nigra</i>	50-75	50-75	Rounded	Greenish	Spring	No color	Fall	Native; edible nuts; prefers moist, well-drained soil; seed coats will stain sidewalks; tomatoes and some other plants will not grow near tree; medium growth rate

EVERGREEN TREES

Pine, Bristlecone <i>Pinus aristata</i>	40		Conical	Purple	Mid Summer	Green	Picturesque; short, dark blue-green needles with white resin dots are retained many years; oldest known tree greater than 4,000 years old; requires full sun and well drained soil; slow growth rate
Pine, Pinyon <i>Pinus edulis</i>	20-30	15-20	Round	Red-Yellow	Spring	Blue-green	Aromatic; edible nuts; short, light-green needles; requires full sun and well drained soils slow growth rate
Pine, Austrian <i>Pinus nigra</i>	60	20-40	Oval	Yellow	April-May	Green	Introduced pine; very dark green needles; Variable form; easy to grow; reported to be subject to pine wilt disease; resistant to tip moth; if crowded may be subject to needle and tip blight; medium to fast growth rate
Red Cedar, Eastern <i>Juniperus virginiana</i>	40-50	10-20	Pyramidal	Green-Yellow	April-May	Green	Common native evergreen; variable form and color; widely used in windbreaks; very easy to grow; valuable wildlife tree; alternate host for cedar-apple and hawthorn rust; d not plant near non-resistant apples, crabapples and hawthorns; medium to fast growth rate
Spruce, Colorado Blue <i>Picea pungens var. glauca</i>	50-75	25	Pyramidal	Green-Orange- Purple	April-May	Blue-green	Dense, pyramidal, ornamental evergreen with stiff blue needles; with age may lose needles on lower branches; needs regular watering in hot weather; full sun; slow to medium growth rate
Spruce, Norway <i>Picea abies</i>	60	25	Pyramidal	Reddish-pink	Mid Spring	Dark green	Many cultivars with variable growth rate form; may need some protection from hot summer winds; can tolerate some shade; medium to fast growth rate

For more information, contact the Garden City Parks Department at 620-271-1574. Also, refer to the publication titled "Tree Selection, Planting & Maintenance Guide - Garden City Parks & Tree Board".