City of Shakopee

Forestry Specifications Manual

SHAKOPEE

Adopted by:

City Council, Regular Session, December 21, 2021

Reviewed August 11, 2026 by Bill Egan

City Council, Regular Session, August 18, 2026

Introduction

Authority: Pursuant to authority granted under Shakopee City Code Section 151.112, Section 151.113, Section 130.15, Section 90.05 and Section 90.16, the following serves as the Forestry Specifications and Standards of Practice for the City of Shakopee, Minnesota, hereinafter referred to as the **Forestry Specifications Manual**.

Guideline: The guideline of the City of Shakopee's Tree Management Regulations is to regulate the planting, transplanting, maintenance, removal and protection of public trees and shrubs in the city in order to alleviate hazardous conditions which may result in injury to persons using the streets, sidewalks or other public property within the city. It is also a guideline to promote and enhance the beauty and general welfare of the city by protecting trees and shrubs from undesirable treatment, maintenance practice, planting and removal.

Function: The general responsibility of the Public Works Department is to maintain trees and shrubs located on all public properties, including, but not limited to, boulevards, right-of-way, medians, alleys, parks, and other public facilities and spaces. This involves all phases of forestry work from planting through removal. These specifications are to serve as a standard for the planting and maintenance of all public trees by city employees and city contractors. However, contractors or private individuals may reference these specifications to perform forestry work. In abiding by and enforcing these specifications, the Public Works Department makes reasonable efforts towards the desired goal of maintaining a safe and aesthetically pleasing urban forest allowing it to provide the maximum benefit to the community. The Public Works Department must approve exceptions to these specifications. The Forestry Specifications Manual shall be adhered to at all times, but may be amended at any time that experience, new research, or laws indicate that improved methods or circumstances make it advisable.

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Tree Planting Standards

Size: All trees planted along the right-of-way and within public spaces must be of sufficient size to absorb the abuse and conditions common to trees planted in urban areas. The minimum allowable size for shade trees is 1 ¾" caliper and 1 ½" caliper for ornamental trees; however, larger or smaller sizes may be required to ensure survival for specific situations. Tree caliper shall be measured six inches above the ground to the nearest ¼".

Condition: Unless otherwise specified, all trees shall conform to the American Nursery and Landscape Association's *American Standard for Nursery Stock*, (Z60.1-2014 or as updated). Each tree chosen for planting shall be a high-quality, healthy tree with evidence of vigorous growth during the previous year. All trees shall have a comparatively straight, single trunk, well-developed leaders and crown, and the roots shall not only be characteristic of the species, cultivar or variety, but also exhibit evidence of proper nursery pruning practices. Ornamental trees may be multiple-stemmed if they can be pruned for adequate clearance. At the time of planting, all trees must have a full healthy crown, be free of mechanical injuries and display no other objectionable features that will affect the future form, health, and beauty of the tree.

Planting Methods:

Planting a Bare Root Tree

Bare root trees are usually available only in early spring. These trees are dug from nurseries in late fall, and all soil is removed from their roots. They are held in climate controlled coolers over winter and sold bare root in spring. Bare root trees typically have a 1 ½- to 2-inch trunk diameter.

While bare root trees can be very economical, they can be highly perishable and it is very important that the roots never be allowed to dry out. When planting many bare root trees (five to ten or more), they should be ordered from the nursery ahead of time and stored in the city's gravel bed (or similar) until they are planted. Bare root trees are usually available only for a short time in spring (usually at the end of April or beginning of May in this area) so there is little flexibility for planting which is available with containerized or balled and burlapped trees. See Figure 1 for details to plant a bare root tree.

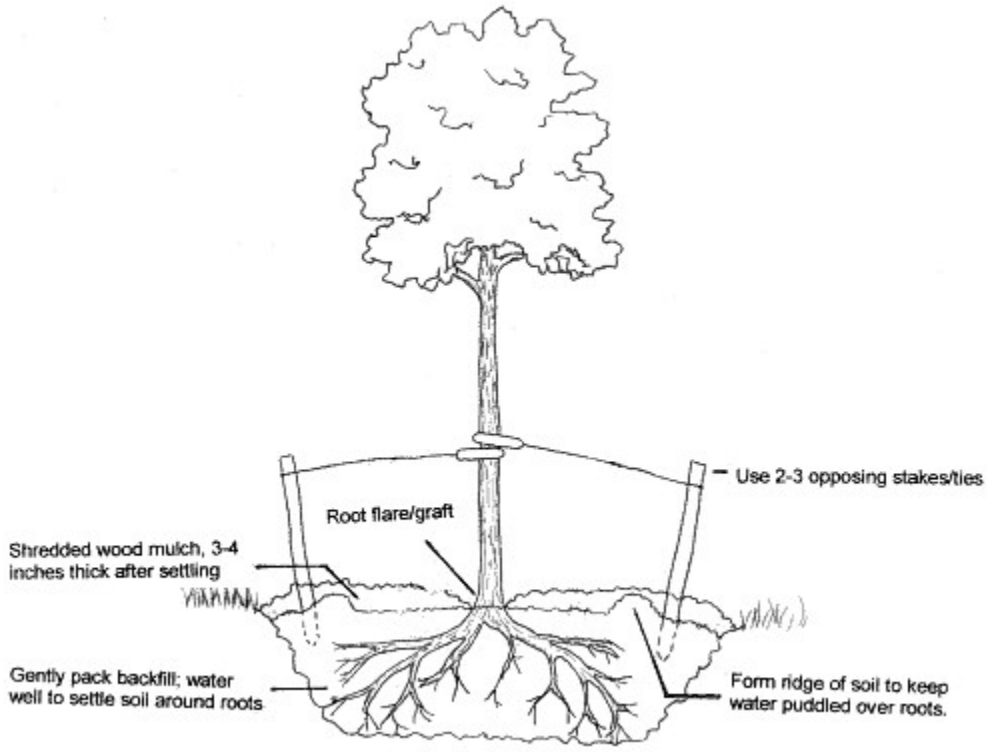

Figure 1. How to plant a bare root tree. Figure from the University of Minnesota Extension. See the city standard detail for planting trees for additional details.

Planting a Container-Grown Tree

Container-grown trees are sold in a variety of different sized pots. The pots may be plastic, paper maché, or wooden "bushel baskets." In some cases, the tree had been growing in the container since it was a seedling; in others, it was planted in the container as a bare root tree. These trees are available throughout the growing season, and can be held in the containers for quite some time, allowing for more flexibility in planting. See Figure 2 for details to plant a container-grown tree.

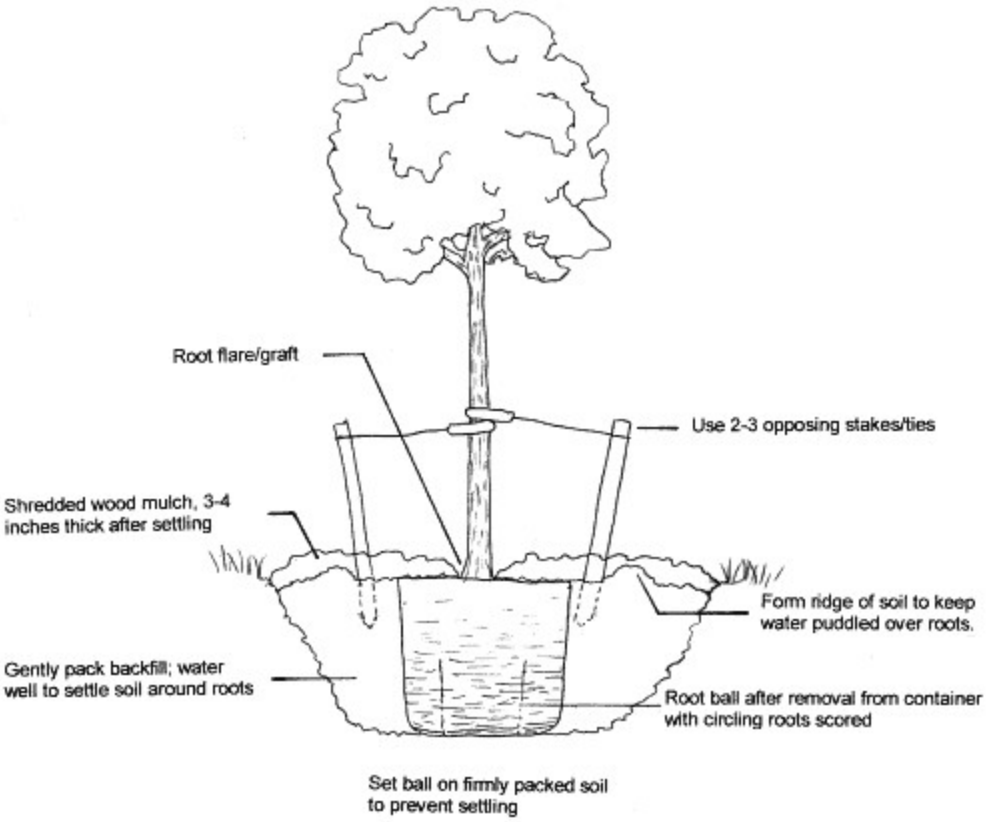

Figure 2. How to plant a container-grown tree. Note: Only use 2-3 opposing stakes/ties when needed. Figure from the University of Minnesota Extension. See city standard detail for planting trees for additional details.

Planting a Balled and Burlapped Tree

Balled and burlapped trees are trees that are dug with the soil around the roots (root ball) intact. That root ball is wrapped in burlap and enclosed in a wire basket which is tied around the trunk. Balled and burlapped trees cost more than bare root stock, but they are typically available throughout the growing season. Larger diameter trees are usually sold this way rather than as bare root or containerized. The root ball of a balled and burlapped trees can dry out very easily, so when choosing a tree, make sure that it is well mulched and does not look dry or otherwise stressed, be certain to keep the root ball moist until it is planted and, if possible, remove the burlap. See Figure 3 for details to plant a balled and burlapped tree.

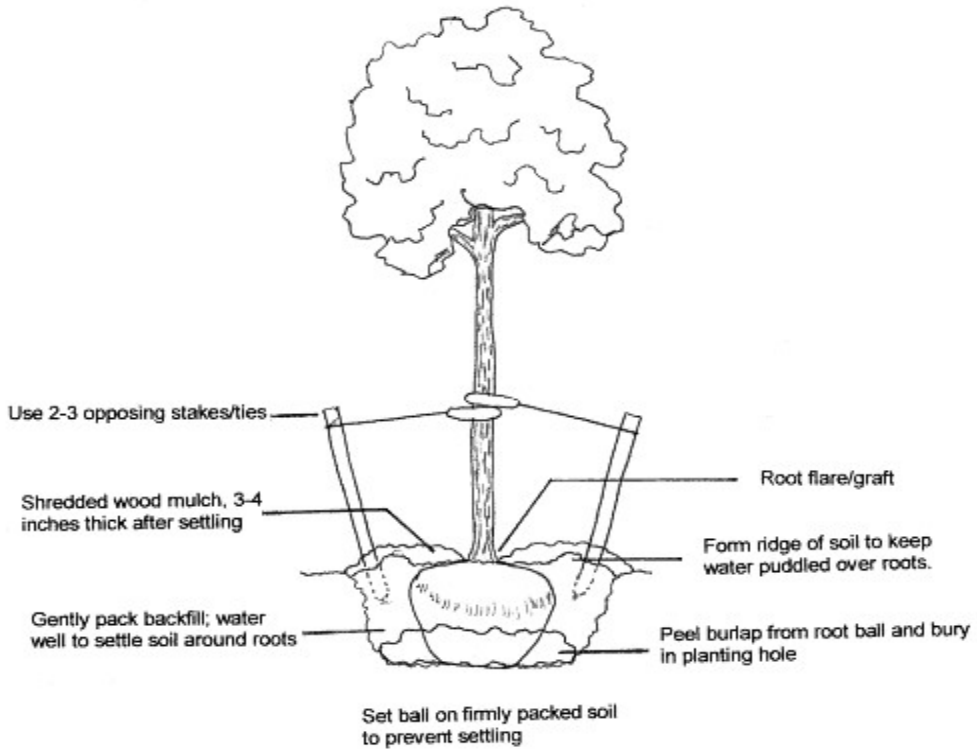

Figure 3. How to plant a B&B tree. Note: Only use 2-3 opposing stakes/ties when needed. Figure from the University of Minnesota Extension. See city standard detail for planting trees for additional details.

Location: All street trees shall be planted midway between the curb and sidewalk (or where the sidewalk would be if there is no sidewalk), unless in the opinion of the Public Works Department, there is sufficient reason to plant the trees off-center.

To allow for maintenance, minimize infrastructure damage and promote safety, trees shall be planted using the following guidelines. *The Public Works Department may make exceptions to these guidelines when circumstances warrant and public safety is not threatened.*

1. 50' from an approach corner
2. 35' from a non-approach corner
3. 20' from a street light
4. 10' from a driveway, utility pole, or fire hydrant
5. 10' from a Sanitary Sewer service, water main, or other underground utilities
6. 5' from a gas valve, water valve, or carriage walk
7. 3' from the curb

Easement Areas: Pursuant to Section 90.16 of the City Code, no trees, shrubs or bushes are allowed to be planted or located within a city easement area, right-of-way or sight triangle. In the event that the city grants permission to locate a tree, shrub or bush in its easement area or on its property, the following standards shall apply:

1. No tree shrub or bush shall be planted or allowed to be located in city-owned or managed property or within a city conservation easement area, sight triangle or right-of-way without first obtaining a permit from the city. The permit application in Appendix E is available at City Hall or on the city's website: www.ShakopeeMN.gov. The permit must be reviewed and approved by the City's Public Works Department.
2. Under no circumstances will the city issue a permit to plant or allow a tree, shrub or bush in any sidewalk or trail easement.
3. Under no circumstances will the city issue a permit to plant or allow a tree to be placed directly on top of a water, sewer or other utility service line. The city will not issue a permit to plant or allow any trees, shrubs, or bushes to be placed within two feet of the side and rear of any utility transformers, cabinets, or hydrants, or within eight feet of the front of any utility transformers, cabinets, or hydrants.
4. Under no circumstances will the city issue a permit to plant or allow a tree to be placed within a lot's front drainage and utility easements, street side easements of corner lots, or maintenance access easements. The city may permit trees to be placed within a lot's side and rear lot line easements if the easements do not contain any underground utilities and the tree does not obstruct drainage.

Sight Triangle: The city will not issue a permit to allow a tree, shrub or bush to be planted or located within a sight triangle, with the exception of low growing shrubs that are less than three feet high and trees that have branches that are able to be trimmed so that they are higher than nine feet from the ground.

Right-of-Way: The city will not allow trees to be planted in the city right-of-way without the approval of a Tree, Shrub and Bush Permit. Trees planted in the right-of-way without a permit will be removed.

Spacing: Future maintenance problems can be minimized by careful and thoughtful placement of trees. Spacing of trees is a function of local site conditions, the species or cultivar used, and their mature height, spread and form. A safe minimum spacing between trees is a distance equal to the width of the species at maturity. All Shakopee trees shall be planted a minimum 30 feet from another tree.

Recommended Street Trees: Appendix A contains the lists of tree species approved for planting in the city based upon their recommended planting sites. The list is subject to review to determine whether any species, cultivars or varieties should be added or removed from the list. The tree list is a recommendation but is subject to change based on availability of trees from suppliers.

Only small-growing trees shall be planted under overhead secondary or primary electrical distribution lines. Trees planted to the side of power lines shall be carefully selected for mature habit to minimize future conflicts.

Conditional Plantings: Conifers may be planted on city right-of-way provided the trunk is no closer than 14 feet to the back of the curb or 7 feet behind the existing public sidewalk. Also, it may not be closer than 35 feet from the non – approach corner of the intersection of two right-of-way lines and no closer than 20 feet to the edge of the nearest driveway.

Undesirable Street Trees: Unacceptable species or their varieties as listed in Appendix B shall not be planted on city property, except in special locations where, because of characteristics of adaptability or landscape effect, they can be used advantageously. Their lack of suitability is based upon objectionable growth habits, fruiting habits, form, susceptibility to serious diseases, propensity to incur storm damage, and other limitations. The limitations listed for each tree or species are the more serious problems encountered locally.

Maintenance of Newly Planted Trees

General: Newly planted trees, shrubs and other plants require special maintenance for one or two growing seasons following planting. All maintenance practices shall follow approved Forestry standards.

Watering: Watering bags should be utilized when available for newly planted trees that are planted by city employees. The recommended frequency of watering trees is one to two times per week in dry months for the first three years after planting. After three years, the need for watering is evaluated based on environmental conditions and monitoring.

Mulching: It is recommended that when planting a tree that mulch is applied around the base of the tree. Mulch is to be maintained until the tree is established which is typically 5 years. Mulch helps a tree retain moisture, control weeds, moderates soil temperature, and gives a nice appearance to the landscape. Most any organic material can be used as mulch, including

shredded wood or bark, wood chips, pine needles, cocoa beans hulls, straw, ground corncobs, or any other available organic matter.

To be effective, mulches should be applied so that when settled, the mulch is 3-4 inches deep. However, mulch should be pulled away from the trunk or stem of the tree. Mulch left against the tree's bark can cause moisture buildup which can rot the bark and cause severe injury to the tree. The "volcano" of mulch around a tree's trunk should be avoided, and instead a "donut" of mulch should be applied. If using organic mulches, do not use a landscape fabric or plastic.

Inorganic materials often used as mulch, such as landscape rocks, may also be used. However, rocks tend to absorb heat during the day and release it at night, which can be stressful for plants. Also, a landscape plastic or fabric under the rocks will be needed to control weeds, which is not needed when using organic mulch.

Pruning: No pruning should occur at the time of planting except to remove dead or broken branches. Unnecessary pruning at this time may reduce the amount of stored energy the plant holds and may stress the tree.

The city is divided into multiple pruning zones to rotate through city-wide pruning. Young trees (10 years or less) are pruned once every three years, and mature trees (greater than 10 years) are pruned once every six years.

Fertilization: Adequate quantities of the essential nutrient elements should be available after new root growth starts. Provision of good drainage and adequate soil moisture are far more important following planting than fertilization. Apply fertilizer sparingly and only to correct a specific deficiency. Since excessive fertilization can "burn" roots and stimulate crown growth faster than the roots can supply water, it is best to wait until the third year after planting to begin applications.

Staking: Bare root trees are staked with a minimum of two stakes to help stabilize trees while they establish. Container and balled and burlapped trees are not staked unless monitoring identifies a need to help stabilize while the tree establishes. If it is necessary to stake a tree after planting use only broad, soft strapping and leave some play for the tree to sway in the wind. Do not use wire surrounded by a garden hose as this may cause serious damage to the trunk. All staking material should be removed within two years unless deemed necessary for continued stability. Please also note that not all trees require staking to stabilize the trees. Contact your local forester or arborist for advice.

Wrapping: Tree guards should be utilized when available for the first three years of establishment of newly planted trees when they are planted in areas that would be prone to damage from mowing, snow and ice, rodents, and sun scald.

Planting Guidelines

General: The following standards shall apply to trees and shrubs in city owned property such as right-of-way and park and open space. In addition, the standards shall apply to private property trees during a state of emergency declared by the Mayor or City Council.

Restrictions to Planting Trees: The following are general restrictions to planting trees within the City of Shakopee:

1. Have underground utilities located.
2. Do not plant trees within city owned property such as park and open space without prior written approval. These trees will become the property of the city.
3. Do not plant trees within city owned right-of-way without prior written approval. These trees will become the property of the city and may be removed as determined by the city.
4. Do not plant trees within drainage and utility easements without prior written approval. Future city improvement projects may require the removal of these trees.
5. Do not plant trees within Conservation Easements without prior written approval from the city.
6. Trees are to be planted a minimum of 5 feet from all property lines. The city recommends planting trees 10 feet from all property lines.

Reconstructed and Widened Streets: When trees are removed in preparation for reconstruction or widening of any established street, new trees will be planted provided there is adequate space in the right-of-way to support tree growth. The expense of this planting shall be borne by the city and incorporated into the project. The Department of Public Works shall determine the amount, location and species of these trees.

New Subdivisions: In the development of new subdivisions or commercial property, removal and planting of trees must meet the requirements of City Code Sections 151.112 and 151.113.

Unimproved Streets: Trees shall not be planted in the right-of-way of unimproved streets or where no curb and gutter exists without approval from the Department of Public Works.

Pruning Standards

General: All pruning shall follow the USDA Forest Service's *How to Prune Trees* manual (see references) for the purpose of crown cleaning, crown thinning, crown raising, and structure development. Pruning shall improve the appearance of the trees and maintain the crown shape and symmetry typical of the species at its given size and age. Permission from the city is required before any pruning is done on city owned and maintained trees.

Pruning Cuts: All final cuts shall be "collar cuts" made sufficiently close to the trunk or parent limb, without cutting into the branch collar or leaving a protruding stub, so that closure can readily begin under normal conditions. The face of the "collar cut" or wound area shall be circular in form. "Flush" cuts to the main stem behind the branch collar and that leave oval exposed wounds shall not be made. Cuts shall be clean and made such that all wound sides are even edged and do not leave "dog ear" ridges on one side or another.

All limbs removed shall be cut in such a manner so as to prevent any ripping or tearing of the wood or bark on the parent or remaining stem. Large limbs shall be cut using the three-cut pruning method as shown in Figure 4. Limbs shall be brought to the ground as to prevent any damage to property, publicly or privately owned.

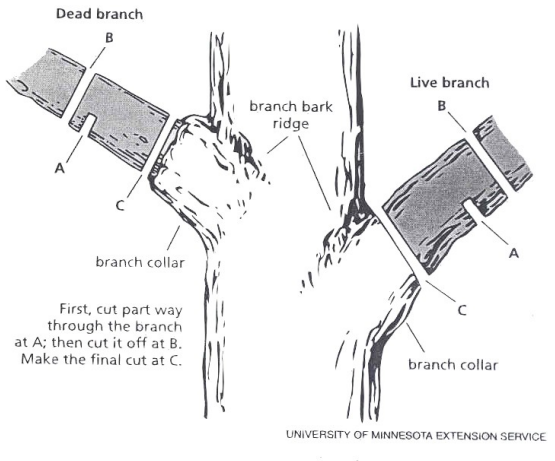

Figure 4 Proper Pruning Techniques – 3 Cut Method

Crown Cleaning: Crown cleaning should remove all dead, dying, diseased, crowded, weakly attached and low-vigor branches. Interior crowding and crossed or rubbing branches should be pruned where practical so as not to leave large holes in the general form of the tree. Trunk suckers and water sprouts, especially where they are present below the bottom 1/2 of the tree, should also be removed as part of crown cleaning. Suckers and sprouts that add to the shape of the tree above 14 feet may remain in mature trees that may not have an optimum crown or shape.

Crown Thinning: Crown thinning, primarily for hardwoods, is the selective removal of branches to increase light penetration and air movement throughout the crown of a tree. The intent is to maintain or develop a tree's structure and form. To avoid unnecessary stress and prevent excessive production of epicormic sprouts, no more than one-quarter of the living crown should be removed at a time. If it is necessary to remove more, it should be done over successive years.

Branches with strong U-shaped angles of attachment should be retained. Branches with narrow, V-shaped angles of attachment often form included bark and should be removed. Included bark forms when two branches grow at sharply acute angles to one another, producing a wedge of inward-rolled bark between them. Included bark prevents strong attachment of branches, often causing a crack at the point below where the branches meet. Co-dominant stems that are approximately the same size and arise from the same position often form included bark. Removing some of the lateral branches from a co-dominant stem can reduce its growth enough to allow the other stem to become dominant.

Lateral branches should be no more than one-half to three-quarters of the diameter of the stem at the point of attachment. Avoid producing "lion's tails," tufts of branches and foliage at the ends of branches, caused by removing all inner lateral branches and foliage. Lion's tails can result in sun-scalding, abundant epicormic sprouts, and weak branch structure and breakage. Branches that rub or cross another branch should be removed.

Conifers that have branches in whorls and pyramidal crowns rarely need crown thinning except to restore a dominant leader. Occasionally, the leader of a tree may be damaged and multiple branches may become co-dominant. Select the strongest leader and remove competing branches to prevent the development of co-dominant stems.

Crown Raising: Crown raising is the practice of removing branches from the bottom of the crown of a tree to provide clearance for pedestrians, vehicles, buildings, lines of site, or to develop a clear stem for timber production. Also, removing lower branches on white pines can prevent blister rust. For street trees the minimum clearance is often specified by municipal ordinance. After pruning, the ratio of the living crown to total tree height should be at least two-thirds (e.g., a 12 m tree should have living branches on at least the upper 8 m).

On young trees "temporary" branches may be retained along the stem to encourage taper and protect trees from vandalism and sun scald. Less vigorous shoots should be selected as temporary branches and should be about 10 to 15 cm apart along the stem. They should be pruned annually to slow their growth and should be removed eventually.

Crown Reduction: Crown reduction pruning is most often used when a tree has grown too large for its permitted space. This method, sometimes called drop crotch pruning, is preferred to topping because it results in a more natural appearance, increases the time before pruning is needed again, and minimizes stress (see drop crotch cuts in the next section).

Crown reduction pruning, a method of last resort, often results in large pruning wounds to stems that may lead to decay. This method should never be used on a tree with a pyramidal growth form. A better long term solution is to remove the tree and replace it with a tree that will not grow beyond the available space.

Clearance Pruning: Clearance of houses and buildings should be such that branches are a minimum of 15 feet from rooftops. Trees and other vegetation shall be pruned to maintain a clear line of sight when approaching all traffic control devices and intersections.

Tools: Proper tools such as hand pruners, pole saws, handsaws, and chain saws shall be used for each cut. The cutting edge of each tool shall be positioned to obtain a proper pruning cut so it will not cut, rip, or harm adjacent bark areas. At no time shall any person working in trees for pruning purposes, wear spurs or any other footwear, which, in the opinion of the Public Works Director or designate, may injure the tree being pruned.

Site Appearance and Clean Up: Pruned limbs and branches temporarily placed in the right-of-way area shall be placed in such a manner as to eliminate any obstruction to motor vehicles and pedestrians. Site cleanup shall include removal of small twigs, chips, leaves and limbs from the street, curb, right-of-way, sidewalk, private lawns and driveways with the appropriate tools for the job. The site shall be returned to the same state it existed in prior to the pruning work. Under no circumstances shall any materials be allowed to lie in the right-of-way overnight.

Topping: It is an unacceptable practice to top any public tree in the city and it is not recommended for any private tree. Topping is the indiscriminate cutting back of tree branches to stubs or lateral branches that are not large enough to assume the terminal role of growth. Property owners often feel that their trees have become too large for their property and feel the need to reduce the tree’s height. Topping, however, is not a viable method of height reduction and will make a tree more hazardous in the long term by encouraging excessive growth and extensive decay.

Topping trees for utility clearance purposes should not be the standard operating procedure. Pruning trees for line clearance is necessary and understandable. However, proper pruning cuts need to be made and only those limbs necessary for proper clearance should be

pruned. Trees located under utility lines that require excessive pruning or pruning needs beyond what is acceptable for proper pruning, should be considered for outright removal and replaced with a suitable tree species for under utility lines. Topping trees is not an acceptable method of pruning under any circumstances and should not be done to any tree or part of within city right-of-way, park, or open space.

Trees damaged by storms or other causes, or trees under utility lines or other obstructions where other pruning practices are not practical may be exempt from City Code Section 151.113 at the determination of the Director of Public Works, or SPUC Utilities Manager or delegate.

Pruning of Oaks: In an effort to minimize the spread of Oak Wilt (*Ceratocystis fagacearum*), Shakopee City Code Section 151.113 states that the pruning of Oak trees or collateral damage to Oak trees from adjacent tree removal shall be avoided from April 1st thru July 31st which is the most susceptible period of infection, except by written permission of city personnel. Trees damaged by storms or other causes during this time may be treated with a nontoxic wound dressing. Final pruning cuts should be made in dormant season to remove stub with wound dressing.

Treating Wounds: Tree sap, gums, and resins are the natural means by which trees combat invasion by pathogens. Although unsightly, sap flow from pruning wounds is not generally harmful; however, excessive "bleeding" can weaken trees.

When oaks or elms are wounded during a critical time of year (usually spring for oaks, or throughout the growing season for elms) -- either from storms, other unforeseen mechanical wounds, or from necessary branch removals -- some type of wound dressing should be applied to the wound. Do this immediately after the wound is created. In most other instances, wound dressings are unnecessary, and may even be detrimental. Wound dressings will not stop decay or cure infectious diseases. They may actually interfere with the protective benefits of tree gums and resins, and prevent wound surfaces from closing as quickly as they might under natural conditions. The only benefit of wound dressings is to prevent introduction of pathogens in the specific cases of Dutch elm disease and oak wilt.

Tree Removal Guidelines

General: There are many factors that contribute to transforming a tree from an asset to a liability. They include: disease, infestation, decay, and mechanical damage, which can cause a tree to be structurally unsound, and therefore unsafe. It is the guideline of the city to base tree removals on safety related criteria and liability. As specified in the City of Shakopee ordinances, the only persons who may authorize the planting or removal of a city tree is the Public Works Director or designee.

Any person who desires to remove any Tree on any parcel of land may be required to submit a Tree Preservation Plan to the city and must demonstrate that there are no feasible or prudent alternatives to removing any tree.

Control Areas: In accordance with state law, the City of Shakopee has designated the populated areas of the city as the areas where the diseased tree and shade tree pest program will be strictly enforced. The control area consists of the developed areas of the city including any scattered subdivisions.

In areas outside of the control areas, the diseased tree and shade tree pest program will be strictly enforced by the city only in those areas within ¼ mile of non-farm homesteads.

Public Trees: The city will remove trees located on public property which contain a shade tree disease or shade tree pest which cause the trees to die. The city will remove these trees as quickly as possible for trees that create hazards located on street boulevards and in city park areas. For trees that have died or fallen that do not create hazards in city open space areas will not be removed. Anyone finding a tree on public property which appears to be diseased or infested but which has not been marked for removal should report the tree to the city.

Private Trees: See City Code Section 130.15 for the removal of trees with a shade tree disease or shade tree pest from private property. See Appendix D for the Shade Tree Disease or Pest Inspection Form.

Reforestation: The city will, to the extent possible under the current budget and/or project plans, attempt to replace boulevard and park trees removed because of shade tree diseases or shade tree pests by planting new trees.

Stump Removal – Public Trees: The city or contractor hired by the city will remove stumps of public trees along right-of-way, parks, or other public open spaces. The city will not remove or grind out stumps for private trees, but rather this is the property owner's responsibility.

Shakopee Tree and Shrub Maintenance Standards

General: The following standards shall apply to trees and shrubs in city owned property such as right-of-way and park and open space. In addition, the standards shall apply to private property trees during a state of emergency declared by the Mayor or City Council.

Boulevard Trees and Public Lands: The City of Shakopee will maintain all boulevard trees and public trees so as to not cause a hazard by trimming branches, pruning, etc. Trees that create hazards are those that are blocking street signs, traffic control devices or street lighting or have low hanging branches that cause hazards to vehicles or trucks such as garbage trucks, snowplows, fire trucks, etc. The city will maintain and trim branches so that there is a minimum of a nine foot clearance over sidewalks and a fifteen foot clearance over streets and alleys.

Duties of Private Property Owners: Any trees and shrubs that are located on private property, but overhang public rights-of-way such as alleys, sidewalks, trails, or streets, shall be trimmed to the same standards above by the city or by the property owner as required by the city per City Code Section 90.05. In no case will the city trim private trees that are not overhanging onto right-of-way, park or other public property.

Storm Damage: Any public trees that are damaged by storms will be maintained by the city, including picking up any tree branches that were blown down. The city will, to the extent possible under the current budget, attempt to replace public trees removed because of storm damage.

Any private trees damaged or that have branches blown down due to a storm shall be maintained or disposed of by the property owner, unless the City Council or Mayor declares a state of emergency. In that case, the city will provide assistance in picking up and disposing of storm damaged trees and branches for a specific length of time as determined by the Public Works Director. In these instances, the following requirements should be adhered to:

a. The property owner should notify the city at least three days in advance of trees/branches needing pick up.

b. Large tree pieces must be cut to 6 feet in length or less.

c. Branches must be piled as follows:

    1. All stems at the same end.

    2. Stems pointing in the same direction as the flow of traffic.
    3. Laid on the ground parallel to the curb.

d. Trees and branches must be placed next to the curb, or edge of the street (not in the street and if possible, not on the sidewalk).

e. City crews will not enter private property to pick up trees or branches.

Unauthorized Removals: See City Code Section 151.113 for information on unauthorized removals.

Miscellaneous Maintenance Practices

Stump Removal: The stumps of all removed trees shall be ground to a depth of at least eight inches (8") below the surrounding ground level. The excess stump chips shall be removed, the hole filled with clean topsoil, and the site graded and seeded. Watering of newly established grass will then be the responsibility of the adjacent property owner. All costs associated with stump removal shall be borne by whoever bears the cost of tree removal.

Fertilization: The city does not, in general, fertilize boulevard trees. A resident who wishes to fertilize the boulevard tree(s) adjacent to their property shall request written permission from the city. The Department of Public Works has the authority to approve or deny a fertilization request. All fertilization shall adhere to the American National Standards Institute's *Standard Practices for Tree Care Operations – Fertilization (ANSI A 300 (Part 2)*.

Cabling and Bracing: Tree support systems are used to provide supplemental support to leaders, individual branches, and /or entire trees by limiting their movement. When a tree has a structural defect or condition that poses a high risk of failure, a supplemental support system can often reduce the risk. However, not all potential hazards can be mitigated by their installation and cabling and bracing will be prohibited in boulevards. It is essential that each tree be carefully examined for risk of failure by a qualified arborist to ensure that the system

will achieve its objective of providing added support, without increasing the risk of tree failure.

As a general rule, cables should be located above the crotch at a point approximately two-thirds (2/3) of the distance between the crotch and tops of the branch ends. Rust-resistant cables, thimbles and lags should be used and thimbles must be used in the eye splice in each end of the cable. Under no circumstances shall cable be wrapped around a branch. All cabling and bracing practices shall follow the American National Standards Institute's *Standard Practices for Tree Care Operations – Support Systems, Cabling, Bracing, and Guying (ANSI A300 (Part 3)*-2000) and the International Society of Arboriculture's companion publication *Best Management Practices – Tree Support Systems: Cabling, Bracing, and Guying* (2001).

Chemical Treatment: The city, in general, limits the use of pesticides, fungicides and herbicides on its public trees. Applications may be done for the control of specific diseases or insects with the proper timing and materials to obtain the desired level of control. Suitable precautions shall be taken to protect and warn the public chemical treatment is being done. All application practices shall conform to the appropriate State and Federal regulations.

A resident who wishes to apply chemical treatments to the boulevard tree(s) adjacent to their property shall request written permission from the city. The Department Public Works has the authority to approve or deny a chemical treatment application request. Residents applying for permission to apply chemical treatments must submit the following information: type of chemical, timing (weeks(s) to be applied), quantity to be used, application method, reason for chemical use and proof of a valid Minnesota Department of Agriculture Commercial Applicator License Number.

Gopher State One and Local Utilities

Upon issuance of a permit, a person planting an item shall have underground utilities located prior to digging or planting by calling Gopher State One at 651-454-0002 or online at www.gopherstateonecall.org. Proper marking of excavation sites prior to calling ensures that no resident, employee or utility are at risk from damage to unmarked utilities. Work within 18" of any underground utility requires hand digging to expose the facility and prevent unnecessary damage to utilities. Private utilities (i.e. irrigation, pet fences, private lighting etc.) located within the public right-of-way shall be marked by the adjacent property owner at their expense. The city cannot assume responsibility for any damage as a result of unmarked private utilities in the right-of-way.

References

American National Standards Institute. *American National Standards for Forestry Operations-Pruning, Repairing, Maintaining and Removing Trees, and Cutting Brush-Safety Requirements (*Z133.1-2000). International Society of Arboriculture, Champaign, IL.

American National Standards Institute. *American Standard for Nursery Stock*, (Z60.1-2014). American Nursery and Landscape Association, Washington D.C..

American National Standards Institute. *American National Standards for Tree Care Operations-Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices (Pruning)* (A300, Part 1-2001). National Arborist Association, Manchester, NH.

American National Standards Institute. *American National Standards for Tree Care Operations-Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices (Fertilization)* (A300, Part 2-1998). National Arborist Association, Manchester, NH.

American National Standards Institute. *American National Standards for Tree Care Operations-Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices (Support Systems a. Cabling, Bracing, and Guying* (A300, Part 3-2000). National Arborist Association, Manchester, NH.

City of New London, *Forestry Specifications Manual*. New London Tree Board, 2005. New London, WI. 28 pp.

Council of Tree and Landscape appraisers, 2000. *Guide for Plant Appraisal*. International Society of Arboriculture, Champaign, IL. 143 pp.

Smiley, E.T. and S. Lilly. 2001. *Best Management Practices Tree Support Systems: Cabling, Bracing and Guying.* International Society of Arboriculture, Champaign, IL. 30 pp.

Bedker, Peter J., O'Brien, Joseph G., and Mielke, Manfred M. *How to Prune Trees*. USDA Forest Service. Northeastern Area State and Private Forestry. NA-FR-01-95. 12 pp.

USDA Forest Service Northeastern Area. *Urban Tree Risk Management: A community Guide to Program Design and Implementation* (NA-TP-03-03). 1992 Folwell Avenue, St Paul, MN.

APPENDIX A – RECOMMENDED TREE SPECIES TO PLANT

The following are recommended tree species to be planted along boulevards and non-boulevards:

Buckeye, Autumn Splendor	(*Aesculus x arnoldiana 'autumn splendor'*)
Elm, Discovery	(*Ulmus davidiana var. japonica*)
Elm, Patriot	(*Ulmus x 'Patriot'*)
Gingko (Male Only)	(*Ginkgo biloba*)
Hackberry	(*Celtis occidentalis*)
Honeylocust, Thornless	(*Gleditisia triacanthos var. intermis*)
Kentucky Coffeetree	(*Gymnocladus dioicus*)
Linden, American	(*Tilia americana var. Redmond*)
Northern Catalpa	(*Catalpa speciosa*)
Oak, Bur	(*Quercus macrocarpa*)
Oak, Northern Red	(*Quercus rubra*)
Oak, White	(*Quercus alba*)

The following are recommended tree species to be planted only in non-boulevard areas:

American Hornbeam	(*Carpinus caroliniana*)
American Mountain Ash	(*Sorbus americana*)
Birch, River	(*Betula nigra*)
Black Cherry	(*Prunus serotina*)
Black Walnut	(*Juglans nigra*)
Butternut Tree	(*Juglans cinerea*)
Hickory, Bitternut	(*Carya cordiformis*)
Hickory, Shagbark	(*Carya ovata*)
Horse Chestnut	(*Aesculus hippocastanum*)
Maple, Sugar	(*Acer saccharum*)
Maple, Black	(*Acer nigrum*)
Oak, Northern Pin	(*Quercus ellipsoidalis*)

The following are recommended tree species to be planted as visual barriers and non-boulevard areas:

Cedar, Eastern Red	(*Juniperus virginiana*)
Cedar, White	(*Thuja occidentalis*)
Fir, Balsam	(*Abies balsamea*)
Fir, Douglas	(*Pseudotsuga menziesii*)
Fir, Fraser	(*Abies fraseri*)
Fir, White	(*Abies concolor*)
Larch, American	(*Larix laricina*)
Larch, European	(*Larix decidua*)
Larch, Japanese	(*Larix kaempferi*)
Larch, Siberian	(*Larix sibirica*)
Pine, Eastern White	(*Pinus strobes*)
Pine, Jack	(*Pinus banksiana*)

Pine, Ponderosa	(*Pinus ponderosa*)
Pine, Red	(*Pinus resinosa*)
Pine, Scots	(*Pinus sylvestris*)
Spruce, Black Hills	(*Picea glauca var. densata*)
Spruce, White	(*Picea glauca*)

The tree lists above are recommendations but are subject to change based on availability of trees from suppliers. Additional species and cultivars may be approved by the Public Works Director or their designee. Please contact the city regarding approved trees to be planted in conservation easements.

CALL GOPHER STATE ONE BEFORE YOU DIG
TO HAVE UNDERGROUND UTILITIES LOCATED

651-454-0002

Online at

www.gopherstateonecall.org

APPENDIX B - UNDESIRABLE SPECIES

The list below is subject to change and is based on the Minnesota Noxious Weed List managed by the Minnesota Department of Agriculture. Additional species may be determined as undesirable by the Public Works Director or their designee.

Scientific Name	Common Name	Problem(s) or Limitation(s)
Acer negundo	Boxelder	Weak wooded, female attracts the Boxelder bug.
Acer saccharinum	Silver Maple	Weak wooded, susceptible to storm damage, aggressive root system
Acer x freemanii 'Jeffersred'	Freeman Maple	Weak wooded, commonly planted
Acer platanoides	Norway Maple	Invasive
Acer ginnala	Amur Maple	Invasive
Acer tataricum	Tatarian Maple	Invasive
Alianthus altissima	Tree of Heaven	Weak wooded, invasive
Alnus glutinosa	European Alder	Invasive
Eleagnus angustifolia	Russian olive	Invasive
Fraxinus	Ash (All Species)	Disease prone (EAB)
Populus alba	White Poplar	Roots block sewers, weak wooded, cotton type seeds
Populus deltoides	Cottonwood	Weak wooded, susceptible to storm damage, cotton type seeds
Populus nigra italicia	Lombardy Poplar	weak wooded
Rhamnus cathartica	Buckthorn	Invasive
Robina spp.	Black Locust	Shallow rooted, borers
Sorbus aucuparia	Rowan Mountain Ash	Invasive
Ulmus pumila	Siberian Elm	Weak wooded
Ulmus Americana	American Elm	Disease prone (Dutch Elm)

APPENDIX C- RISK EVALUATION GUIDELINES
(Companion guide to the USDA Community Tree Risk Evaluation Form)

Risk evaluation guidelines are from the reference Urban Tree Risk Management: A community Guide to Program Design and Implementation.

PROBABILITY OF FAILURE: 1-4 points

1. Low: some minor defects present:
- Minor branch/ crown dieback
- Minor defects or wounds

2. Moderate: several moderate defects present
- Stem decay or cavity within safe shell limits: shell thickness > 1 inch of sound wood for each 6 inches of stem diameter
- Crack(s) without extensive decay
- Defect(s) affecting 30-40% of the tree's circumference
- Crown damage/breakage: hardwoods up to 50%; pines up to 30%
- Weak branch union: major branch or co-dominant stem has included bark
- Stem girdling roots: <40% tree's circumference with compressed wood
- Root damage: < 40% of roots damaged within the CRR

3. High: multiple or significant defects present:
- Stem decay or cavity at or exceeding shell safety limits: shell thickness < 1 inch of sound wood for each 6 inches of stem diameter
- Cracks, particularly those in contact with the soil or associated with other defects
- Defect(s) affecting > 40% of the tree's circumference
- Crown damage/breakage: hardwoods >50%; pines >30%
- Weak branch union with crack or decay
- Girdling roots with > 40% of tree's circumference with compressed wood
- Root damage: > 40% of roots damaged within the CRR.
- Leaning tree with recent root breakage or soil mounding, crack or extensive decay
- Dead tree: standing dead without other significant defects

4. Extremely High: multiple and significant defects present; visual obstruction of traffic signs/lights or intersections:
- Stem decay or cavity exceeding shell safety limits and severe crack
- Cracks: when a stem or branch is split in half
- Defect(s) affecting > 40% of the tree's circumference or CRR and extensive decay or crack(s)
- Weak branch union with crack and decay
- Leaning tree with recent root breakage or soil mounding and a crack or extensive decay - Dead branches: broken (hangers) or with a crack
- Dead trees: standing dead with other defects such as cracks, hangers, extensive decay, or major root damage
- Visual obstruction of traffic signs/lights or intersections
- Physical obstruction of pedestrian or vehicular traffic

SIZE OF DEFECTIVE PART (S): 1-3 points

1. Parts less than **4** inches in diameter
2. Parts from **4 to 20** inches in diameter
3. Parts **greater than 20** inches in diameter

PROBABILITY OF TARGET IMPACT: 1-3 points

1.**Occasional Use:**
- Low use roads and park trails; parking lots adjacent to low use areas; natural areas such as woods or riparian zones; transition areas with limited public use; industrial areas.

2.**Intermediate Use:**
- Moderate to low use school playgrounds, parks, and picnic areas; parking lots adjacent to moderate use areas; secondary roads (neighborhoods) and park trails within moderate to high use areas; and dispersed campgrounds.

3.**Frequent Use:**
- Emergency access routes, medical and emergency facilities and shelters, and handicap access areas; high use school playgrounds, parks, and picnic areas; bus stops; visitor centers, shelters, and park administrative buildings and residences; main thoroughfares and congested intersections in high use areas; parking lots adjacent to high use areas; interpretive signs, kiosks; scenic vistas; and campsites (particularly drive-in).

OTHER RISK FACTORS: 0-2 points

- This category can be used if professional judgment suggests the need to increase the risk rating.
- It is especially helpful to use when tree species growth characteristics become a factor in risk rating. For example, some tree species have growth patterns that make them more vulnerable to certain defects such as weak branch unions (silver maple) and branching shedding (beech).
- It can also be used if the tree is likely to fail before the next scheduled risk inspection.

Table 1. Defect Codes

Code	*Defect*
D	Decay
CR	CRack
Root	Root Problems
RSG	Stem Girdling
RS	Severed
RPD	Planting Depth (too deep)
RGC	Grade Change
RSB	Sidewalk Buckling
WBU	Weak Branch Union
CA	CAnker
PTA	Poor Tree Architecture
PTA:LT	Leaning Tree
PTA:TT	Topped Tree
EE	Excessive Epicormics
DEAD	DEAD tree, tops or branches
VO	Visible Obstruction
PO	Physical Obstruction

Table 2. Corrective Action(s) Codes

Prune	
PD	Deadwood
PW	Weakwood (defective part(s))
PC	for Clearance
PT	to Thin crown or reduce crown weight
PR	to Reduce crown height
Target	
TM	Move
TEV	Exclude Visitors from Target Area
CB	Cable/Bracing
CWT	Convert to Wildlife Tree
RT	Remove Tree
Monitor	Monitor regularly
NA	No Action Required

USDA COMMUNITY TREE RISK EVALUATION FORM
Example Form *

Location:_____ Date:_____ Inspector(s):_____

Tree #	Species	DBH	Location (Street Address)	Defect Code(s)	1 Probability of Failure	2 Size of Defective Part(s)	3 Probability of Target	4 Other Risk Factors (Optional)	Description of Other Risk Factors	Risk Rating (Sum of Columns 1-4)	Corrective Action Code(s)	Action Completed	
					1-4 pts	1-3 pts	1-3 pts	0-2 pts		3-12 pts		Date	Initials

* This is an *example* form adapted from various sources by the US Forest Service, Northeastern Area Hazard Tree Training Team. The US Forest Service assumes no responsibility for conclusions derived from the use of this form. Managers should construct their own forms, based on need and experience. Revised: 4/03

APPENDIX D - Shade Tree Disease or Pest Inspection Form

CITY OF SHAKOPEE
SHADE TREE DISEASE/SHADE TREE PEST
TREE INSPECTION FORM

DATE:_____ TREE INSPECTOR:_____

TREE TAG NUMBER
(PID#):_____

PROPERTY
ADDRESS:_____

The City Tree Inspector inspected _____trees within your property. Based on this inspection the following has been determined:

□ One or more trees within your property have been diagnosed as diseased, dying or containing a shade tree pest and are required to be removed within _____days of this notice according to Minnesota Department of Agriculture regulations and Section 130.15 of the City Code.

PLEASE FILL OUT AND RETURN THE ATTACHED POSTCARD WITHIN FIVE DAYS INDICATING HOW YOU WISH TO HANDLE THE REMOVAL OF YOUR TREE CONTAINING A SHADE TREE DISEASE/SHADE TREE PEST.

REMOVAL OF THE MARKED TREES WITHIN YOUR PROPERTY WILL COST _____.

PLEASE SEE THE ATTACHMENTS FOR PAYMENT OPTIONS AND ADDITIONAL INFORMATION.

□ Quantities of _____wood were found on your property. This situation is capable of harboring the beetles or insects that can infect other trees. This wood must be destroyed in a heating appliance, debarked or hauled for disposal 20 days following the date of this notification.

□ We have marked your boulevard tree for removal. The City of Shakopee will do the removal work at no cost to you.

□ Other:

_____

_____

_____

If you have any questions please call the City of Shakopee Public Works Department at (952) 233-9550.

APPENDIX E - Tree, Shrub and Bush Planting Permit Application

CITY OF SHAKOPEE

485 GORMAN STREET, SHAKOPEE, MN 55379
Phone (952) 233-9300 Fax (952) 233-3801
www.ShakopeeMN.gov

Tree, Shrub and Bush Permit Application

A permit is required to plant or place trees, shrubs or bushes in a city easement area or sight triangle or on city-owned or managed property

Site Address:_____

Applicant Name:_____

Address:_____

City:_____**State**:_____**Zip**:_____

Day Phone: (_____)_____**Cell Phone**: (_____)_____

Proposed Planting Location (Check Box):

< Right-of-way (Boulevard)
< Park and Open Space
< Conservation Easement
< Drainage & Utility Easement

Type of Species Planting (Check Box):

Species	Quantity	Size	(Scientific Name)
< American Hornbeam			(*Carpinus caroliniana*)
< American Mountain Ash			(*Sorbus americana*)
< Black Cherry			(*Prunus serotina*)
< Black walnut	_____	____	(*Juglans nigra*)
< Birch, River	_____	____	(*Betula nigra*)
< Buckeye, Autumn Splendor			(*Aesculus x ardoldiana 'Autumn Splendor'*)
< Butternut Tree			(*Juglans cinerea*)
< Cedar, Eastern Red	_____	____	(*Juniperus virginiana*)
< Cedar, White			(*Thuja occidentalis*)
< Elm, Discovery	_____	____	(*Ulmus davidiana var. japonica*)
< Elm, Patriot			(*Ulmus x 'Patriot'*)
< Fir, Balsam			(*Abies balsamea*)
< Fir, Douglas			(*Pseudotsuga menziesii*)
< Fir, Fraser			(*Abies fraseri*)
< Fir, White			(*Abies concolor*)
< Ginkgo (male only)			(*Ginkgo biloba)*
< Hackberry	_____	____	(*Celtis occidentalis*)
< Hickory, Bitternut	_____	____	(*Carya cordiformis*)
< Hickory, Shagbark	_____	____	(*Carya ovata*)
< Honeylocust, Thornless	_____	____	(*Gleditisia triacanthosvar.intermis*)
< Horse chestnut			(*Aesculus hippocastanum*)
< Kentucky Coffeetree			(*Gymnocladus dioicus*)
< Larch, American			(*Larix laricina*)

< Larch, European			(*Larix decidua*)
< Larch, Japanese			(*Larix kaempferi*)
< Larch, Siberian			(*Larix sibirica*)
< Linden, American	_____	____	(*Tilia americana var. Redmond*)
< Maple, Black			(*Acer nigrum*)
< Maple, Sugar			(*Acer saccharum*)
< Northern Catalpa			(*Catalpa speciosa*)
<			
<			
< Oak, Bur	_____	____	(*Quercus macrocarpa*)
< Oak, Northern Pin	_____	____	(*Quercus ellipsoidalis*)
< Oak, Red	_____	____	(*Quercus rubra*)
< Oake, White			(*Quercus alba*)
< Pine, Eastern White	_____	____	(*Pinus strobes*)
< Pine, Jack			(*Pinus banksiana*)
< Pine, Ponderosa			(*Pinus ponderosa*)
< Pine, Red			(*Pinus resinosa*)
< Pine, Scots			(*Pinus sylvestris*)
< Spruce, Black Hills	_____	____	(*Picea glauca var. densata*)
< Spruce, White	_____	____	(*Picea glauca*)
<			

< Other: Name and Quantity:_____

PLEASE FILL OUT BACKSIDE OF APPLICATION

ACKNOWLEDGEMENT OF OWNER

I hereby acknowledge the following:

a) **I have reviewed and understand the requirements of the Shakopee Tree, Shrub and Bush Planting and Placement Policy and Standards, the Shakopee Tree and Shrub Maintenance Standards, and the Shakopee Diseased Tree Removal Guideline.**

b) **I agree to install my permitted tree, shrub or bush in the approved location in accordance with these standards and policies.**

c) **I agree to indemnify, defend and hold the City of Shakopee harmless with respect to any injury or property damage caused by my work within the easement area or on city property in connection with this permit.**

d) **Pursuant to Section 90.16 of the City Code I understand that city staff may require that these items placed within an easement area be removed at my expense at any time, even these items that have been previously approved by the city and a permit has been issued. If I do not remove these items upon the request of the city or if an emergency situation exists, I understand that the city may remove these items for me and may charge me for any removal expenses that are incurred.**

e) **I also understand that if the items are required to be removed, the city is not required to compensate me for the costs of the items. The city is also not required to replace any of the items.**

_____ _____

Signature of Applicant **Date**

RESIDENTS MUST CONTACT GOPHER ONE STATE PRIOR TO DIGGING OR PLANTING TO HAVE UNDERGROUND UTILITIES LOCATED

651-454-0002 or online at www.gopherstateonecall.org

Office Use Only:

Public Works: Approve/Deny By:_____Date:_____

Natural Resources: Approve/Deny By:_____Date:_____

SPUC: Approve/Deny By:_____Date:_____

(SPUC Approval Necessary as Determined by Public Works or Natural Resources)

Installation Inspection By:_____Date:_____

GPS Data Collected (Circle): (Yes) (No)

GPS Coordinates Obtained (Circle): (Yes) (No)

Latitude:_____Longitude:_____