



CITY OF UNIVERSITY CITY TREE MANUAL

Trees in our community provide shade for our streets, parks and homes; they beautify our streets, raise the property values of our homes and reduce our energy costs. Cities that maintain a healthy tree population can take pride in the quality of life in their neighborhoods.

This manual is designed to aid arborists and educate residents on how to best manage and protect the valuable tree resource within the City of University City.

This Tree Manual is a companion to the City of University City Tree Ordinance. It can be used as a field guide and as a reference for specific examples of requirements listed in the ordinance. It includes a list of acceptable tree species to plant on City owned property in University City, as well as examples of tree surveys and other documents, required by the ordinance. The following instructions are intended to provide practical interpretation of the University City Tree Ordinance and beneficial instruction on best management practices for urban tree populations.

The Tree Manual is not intended as a replacement for the Tree Ordinance; the Tree Ordinance will remain the official city document.

Thank you for your interest in our urban forest. Your knowledge and dedication to good tree care will contribute to the success of a healthy tree population in University City!



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The roots of a tree extend far from the trunk and are found mostly in the upper 6 to 12 inches of soil.

~DEFINITIONS~

Adjusted DBH: The DBH of a tree multiplied by the condition rating of the tree, (e.g. a 20 inch diameter tree with a condition rating of 50% has an **Adjusted DBH** of 10 inches).

Arborist Permit: An annual permit required for any person **Maintaining** a tree on **Developmental Projects** or **City** owned trees.

Caliper: The diameter of a tree 6 inches above the surface of the ground.

Carrying Capacity: The maximum number of trees on a site that can be expected to grow and thrive without an unreasonable level of competition.

City: University City, Missouri

City Forester: The official representative of the city and as such is responsible for the administration of this ordinance and a **Community Forestry Plan**.

Community Forestry Plan: A long range plan for the maintenance and improvement of the community urban forest.

Condition Rating: A percentage rating of a tree's overall health and form, a healthy tree with good form may be rated at 90%. While a tree with many broken or missing branches and in decline may only rate 20%.

Development and/ or Development Projects: The performance of any building activity; or the making of any material change to any structure; or to the natural surface of land including activities that disturb the natural surface of the land such as clearing, excavating, and filling; or any change in the use or appearance of any structure or land; or the division of land into two or more parcels. For the purposes of this Chapter, in reference to the need for a Forest Activity Permit, the terms "development" or "development projects" shall include but not be limited to the construction of **new** single family dwellings or **new** two-family dwellings and any other new construction that requires a special use permit such as Site Plan Review, Conditional Use Permit or Planned Development, the applicant must obtain a **Forestry Activity Permit**. This definition **excludes** additions to single or two family dwellings and the addition of structures such as; decks, porches, sheds, garages, fences and pools.

DBH: The diameter of a tree at breast height (4.5 feet above the surface of the ground).

Forestry Activity Permit: Required to remove, prune or plant city owned trees. Also required to remove trees from **Development Projects**.

Maintain: To plant, mulch, fertilize, water and prune as necessary, to remove if dead or diseased.

Public Community Forest: All trees owned by the City as a total resource.

Private Community Forest: All trees within the municipal boundaries not owned by the City.

Tract: The total area of land on which a ***Development Project*** is proposed regardless of the size of the proposed development.

Tree: A wood plant growing upright as a single stem sometimes (multi-stem) attaining a height of 15 feet or more.

City Tree: A tree owned by the City.

Park Tree: A ***City Tree*** that is located in a public park.

Private Tree: A tree located on private property not a ***City Tree***.

Street Tree: A ***City Tree*** located on the City right-of-way along a public street

Tree Bank: An account set up in the City's financial system to accept payments of tree replacement assessments and other sources, the funds will be used to plant and maintain ***City Trees***.

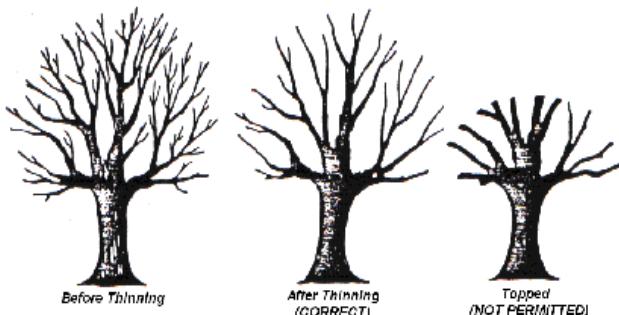
Tree Canopy Coverage: The measurement of the ground surface covered by the branch spread of a single or clump of trees.

Tree Lawn: The soil area located between the street and edge of the adjoining property line typically encompassing the street right-of-way.

Tree Manual: A manual prepared by the ***City Forester***, to explain the technical information described in the Tree Ordinance.

Tree Survey: A requirement to obtain a ***Forestry Activity Permit*** the survey is prepared as a map and narrative showing all trees 6 inches and greater in ***DBH*** on the ***Tract***. The survey must include the species, size, ***Condition Rating***, and location of each tree in relation to the proposed development. The survey must be prepared by a certified arborist, tree protection measures and limits of disturbance must be noted.

Tree Topping: Is the drastic removal or cutting back of large limbs in mature trees resulting in large open wounds, which leaves the tree susceptible to disease and decay.



~JURISDICTION~

The **City** controls all trees, shrubs, and other plantings in public areas within the city limits and has the power to **Maintain** them as the **City** sees fit. Jurisdiction also extends to **Private Trees** under the **Forestry Activity Permit** and in other cases outlined in the ordinance.

~AUTHORITY AND SUPERVISION~

City Forester: Implements and enforces the rules and regulations of the ordinance, issues, administers and supervises all permits in accordance with the ordinance. The city forester prepares and updates the **Community Forestry Plan** and also is an ex officio non-voting member of the **Urban Forestry Commission**.

Urban Forestry Commission: Comprised of the **City Forester** and seven citizen volunteers and an ex officio city council member. The commission annually updates the **Community Forestry Plan** hears appeals to the decision or determination of the **City Forester** and perform other duties provided in the ordinance.

~FORESTRY ACTIVITY PERMIT~

Private Trees on Development Projects: The removal of trees on private property **is** restricted in situations on **Development Projects**. In these cases, a permit to remove any trees 6 inches or greater on this site must be obtained. The intent is to minimize the loss of valuable trees during major construction activities. The **City** requires a **Tree Survey** for each site before granting a **Forestry Activity Permit**.

This survey should be in map and narrative form including:

- Species
- Size (**DBH**)
- **Adjusted DBH (DBH X Condition Rating)**
- **Condition Rating**
- Location
- Tree protection measures and limits of disturbance

See Appendix A. for an example of a **Tree Survey**.

Preservation of existing trees is very important to University City. However when developing a site, this is not always possible. The ordinance attempts to mitigate this problem by requiring trees that are removed to be replaced with new trees after construction is completed. These trees are to be replaced so that the combined caliper inches are equal to the **Adjusted DBH** being removed.



CASE 1: Two Sugar Maples are to be removed during a construction project. Tree "A" is 20 inches in diameter with a condition rating of 90%; and Tree "B" is 15 inches in diameter with a condition rating of 40%. The adjusted trunk diameters are then 18 inches and 6 inches respectively. The total Adjusted DBH being removed is 24 inches. Twelve 2- inch **Caliper** Sugar Maple trees would be adequate to Replace these two trees. (Any size combination of replacement trees Is acceptable as long as the final result is **24 Caliper** inches).

Why use the "adjusted DBH for a replacement value? This value is based on the current condition of the tree, as well as the diameter size of the tree. The **City** recognizes that a large tree can be an asset to a site; however, if this tree is in poor condition or even hazardous, it is reasonable to reduce the amount of required replacement.



CASE 2: A 30 inch Silver Maple is located on a soon-to-be-developed property and needs to be removed. The **Tree Survey** indicates that tree is in poor condition, with a condition factor of 30%. This rating could indicate that the tree is structurally deficient, infested with insects or disease or for some other reason is stressed. The tree may still provide shade, aesthetics, and character to the property but due to its defects it does not need to be replaced as if it were a "perfect tree". By multiplying the existing diameter by the **Condition Rating**, a reasonable replacement can be obtained. In this case a 30 inch diameter tree in poor condition needs to be replaced with a total of 10 **Caliper** inches of new trees.

Ideally all replacement tree plantings will take place on the developed tract of land after construction. However sometimes the number of replacement trees exceeds the **Carrying Capacity** of a site, when this is the case replacement trees maybe planted in a nearby city park or street right of way. When planting is not possible a payment of \$120.00 per caliper inch *not replaced* on the site may be paid to the City **Tree Bank**, the maximum amount payable may not exceed \$10,000 per acre. In the event any preserved tree or trees should die within one year the developer shall replace the tree(s) or pay an assessment equal to the value of the tree that died. **No occupancy permits will be issued until the assessed fees for damaged trees are paid.**

City Trees: Trees along most streets are located on city owned public right-of-way and so are owned by the **City**. Before you plant, prune, spray or remove any tree on city property you must obtain a **Forestry Activity Permit** from the **City Forester**. If you have a dead, diseased or damaged street tree contact the city forestry division and they will make arrangements to have it removed, the division also prunes and maintains trees on public property.

Regulations for Planting in Public Places: If you want to plant a tree on city owned right-of-way or park you must obtain a **Forestry Activity Permit**. A **Forestry Activity Permit** will only be issued for planting spaces that provide adequate root space and overhead clearance for the selected species. Tree lawns must be at least 4 feet wide; trees must not be less than 1 3/4 caliper inches and must be chosen from the city tree list, or be approved by the **City Forester**. (See Appendix B for the Approved City Tree List). The fee charged for each **Forestry Activity Permit** is \$50.00.

Annual Arborist Permits: Any person **Maintaining** or removing any tree in a **Development Project** or any tree in the Public Community Forest must first obtain an Annual Arborist Permit. To obtain the **Annual Arborist Permit** such person or business entity must show proof of liability insurance in the amount of \$500,000 and workmen's compensation insurance. The permit also requires that person or business entity be recognized by the International Society of Arboriculture as a Certified Arborist or Tree Worker. Fines for any work without the required Arborist Permit are \$500 per offense and doubles for the second offense, along with revocation of the Arborist Permit for one year.

~TREES ON PRIVATE PROPERTY~

Duty of Private Property Owners: It is your responsibility to prune any limbs from trees growing on your private property overhanging any street or right-of-way. The minimum clearance of any overhanging limb is 9 feet, except where the **City Forester** designates the need for greater clearance. Dead, decayed, diseased or hazardous private trees must be removed. No tree limb which has been pruned or fallen from a private tree can be placed on public property and must be removed at the expense of the property owner. If you fail to respond to hazardous or diseased trees on your property the **City Forester** can issue you a notice to remove the hazard tree or limb. If this is not successful the **City Forester** is authorized to remove the tree or limb and charge you for the service and can be a lien upon the property until paid. This assessment may be appealed within 30 days after the assessment is mailed to the property owner.

~ABUSE OR MUTILATION~

No unauthorized person on any **City** property or right-of-way shall damage, cut, carve, attach any nail, staple, rope or wire to any tree, shrub or plant. Unless authorized you may not dig or disturb the root area, pick flowers or seeds of any tree shrub or plant. You may not allow any gaseous liquid or solid substance harmful to trees, shrubs or plants to come in contact with them.

~TREE TOPPING~

Property owners are strongly encouraged **NOT** to top trees. It is unlawful to top any **City Tree** or tree in a **Developmental Project** and will result in the immediate revocation of the **Arborist Permit** for one year.

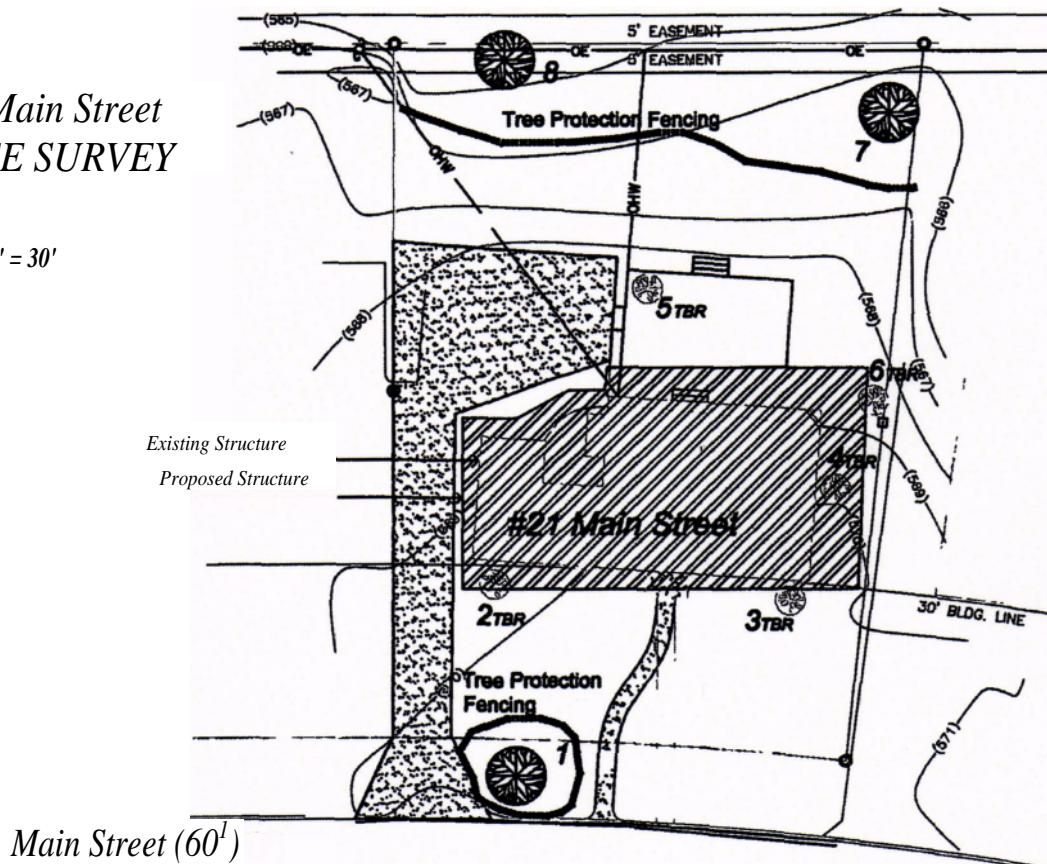
~INTERFERENCE WITH CITY FORESTER OR CITY EMPLOYEES~

It is unlawful to interfere with the City Forester or any other City employee engaged in their duties

~APPENDIX A. EXAMPLE TREE SURVEY~

#21 Main Street TREE SURVEY

Scale: 1" = 30'



Tree Notes:

Limits of disturbance are located outside of the Tree Protection Fencing.

No construction shall disturb the area protected by the tree protection fencing. All construction activities, material storage and equipment shall be kept outside of the tree protection area.

EXISTING TREE LIST

Tree Number	Species	Diameter On Inches)	Condition	Adjusted DBH (In inches)	Comments
1	Pin Oak	32.5	50%		<i>some dieback in crown</i>
2	Holly	8.8	65%	5.7	<i>To be removed</i>
3	Holly	72	70%	5.0	<i>To be removed</i>
4	Holly	5.4	50%	2.7	<i>To be removed</i>
5	Redbud	5.6	75%	4.2	<i>To be removed</i>
6	Redbud	5.0	75%	3.8	<i>To be removed</i>
7	Siberian Elm	22.0	60%		
8	Norway Spruce	18.7	85%		
21.4"					

~ APPENDIX B. APPROVED TREE LIST ~

Trees with one asterisk * are appropriate street trees Trees with two asterisk ** are desired street trees



SMALL TREES: 15-30 FEET IN HEIGHT (SPACED NO LESS THAN 30 FEET APART)

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>
<i>Acer beurgeranum</i>	<i>Trident Maple</i> *
<i>Acer campestre</i>	<i>Hedge Maple</i> **
<i>Acer ginnala</i>	<i>Amur Maple</i>
<i>Acer griseum</i>	<i>Paperbark Maple</i>
<i>Acer tataricum</i>	<i>Tartarian Maple</i> * (<i>single-stem tree-form only</i>)
<i>Amelanchier</i> species	<i>Serviceberry</i> ** (<i>single stem tree-form only</i>)
<i>Carpinus caroliniana</i>	<i>American Hornbeam</i> *
<i>Cercis canadensis</i>	<i>Eastern Redbud</i> *
<i>Chionanthus virginicus</i>	<i>White Fringe Tree</i>
<i>Comus</i> species	<i>Dogwood</i> species (<i>requires special conditions</i>)
<i>Hamamelis</i> species	<i>Witch hazel</i>
<i>Malus</i> species	<i>Crabapple</i> species (<i>disease resistant varieties</i>)"
<i>Styrax japonicus</i>	<i>Japanese Snowbell</i>
<i>Syringa reticulata</i>	<i>Japanese Tree Lilac</i> **

MEDIUM TREES: 30-40 FEET IN HEIGHT (SPACED NO LESS THAN 40 FEET APART)

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>
<i>Aesculus glabra</i>	<i>Ohio Buckeye</i>
<i>Cladrastis kentukea</i> (<i>lutea</i>)	<i>Yellowwood</i> *
<i>Koelreuteria paniculata</i>	<i>Goldenraintree</i>
<i>Maackia amurensis</i>	<i>Amur Maackia</i>
<i>Magnolia</i> species	<i>Magnolia</i> species
<i>Ostrya virginiana</i>	<i>Hophornbeam</i>
<i>Parrotia persica</i>	<i>Persian Parrotia</i>
<i>Phellodendron amurense</i>	<i>Amur Corktree</i> *
<i>Prunus serrulata</i>	<i>Kwana Cherry</i> z *
<i>Pyrus calleryana</i>	<i>Callery Pear</i> (<i>upright cultivars "Cleveland Select"</i>)"
<i>Sassafrass albidum</i>	<i>Common Sassafrass</i>

LARGE TREES: OVER 40 FEET IN HEIGHT (SPACED 40-50 FEET APART)

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>
<i>Acer rubrum</i>	<i>Red Maple (cultivars)**</i>
<i>Acer saccharum</i>	<i>Sugar Maple*</i>
<i>Aesculus hippocastanum</i>	<i>Horsechestnut*</i>
<i>Alnus glutinosa</i>	<i>European Alder*</i>
<i>Betula nigra</i>	<i>River Birch (single stem for street tree)*</i>
<i>Carpinus betulus "Fastigiata"</i>	<i>Upright Hornbeam**</i>
<i>Celtis species</i>	<i>Hackberry/ Sugarberry*</i>
<i>Cercidiphyllum japonicum</i>	<i>Katsuratree</i>
<i>Corylus colurna</i>	<i>Turkish Filbert**</i>
<i>Eucommia ulmoides</i>	<i>Hardy Rubber Tree**</i>
<i>Fagus species</i>	<i>Beech species</i>
<i>Fraxinus species</i>	<i>Ash species*</i>
<i>Ginkgo biloba</i>	<i>Ginkgo (male only)**</i>
<i>Gleditsia triacanthos var. inermis</i>	<i>Thornless Honeylocust</i>
<i>Liriodendron tulipifera</i>	<i>Tuliptree*</i>
<i>Metasequoia glyptostroboides</i>	<i>Dawn Redwood*</i>
<i>Nyssa sylvatica</i>	<i>Blackgum**</i>
<i>Platanus x acerifolia</i>	<i>London Planetree "Bloodgood"</i>
<i>Prunus x yedoensis</i>	<i>Yoshino Cherry*</i>
<i>Quercus alba</i>	<i>White Oak *</i>
<i>Quercus acutissima</i>	<i>Sawtooth Oak*</i>
<i>Quercus bicolor</i>	<i>Swamp White Oak**</i>
<i>Quercus imbricaria</i>	<i>Shingle Oak*</i>
<i>Quercus macrocarpa</i>	<i>Bur Oak*</i>
<i>Quercus phellos</i>	<i>Willow Oak*</i>
<i>Quercus robur</i>	<i>English Oak*</i>
<i>Quercus rubra</i>	<i>Red Oak**</i>
<i>Quercus velutina</i>	<i>Black Oak*</i>
<i>Sophora japonica</i>	<i>Japanese Pagodatree*</i>
<i>Taxodium distichum</i>	<i>Baldcypress**</i>
<i>Tilia species</i>	<i>Linden species*</i>
<i>Ulmus americana</i>	<i>American Elm (hybrids only)*</i>
<i>Ulmus parvifolia</i>	<i>Lacebark Elm**</i>
<i>Zelkova serrata</i>	<i>Japanese Zelkova*</i>

NOTE: All trees should be single stem unless the species is multi-stemmed by form. Select the appropriate tree for the site. Consider the following factors: height, spread, sunlight, soil conditions, width of planting area, overhead lines and underground utilities.

~APPENDIX C. SAMPLE FORESTRY ACTIVITY PERMIT~



Department of Parks, Recreation and Forestry
6801 Delmar Blvd., University City, MO. 63130, (314) 505-8619

FOREST ACTIVITY APPLICATION

Required for:

- 1. Development Projects – for removal of any tree six (6) caliper inches or larger**
- 2. City Trees – To plant, prune, spray or remove any tree**

Applicant Name: _____ Date: _____

Applicant Address: _____

Address of Work Site: _____

PERMIT FEE DUE THE CITY: \$50.00

_____ SIGNATURE OF APPLICANT

FOREST ACTIVITY PERMIT

PERMIT#: _____ DATE: _____

THIS PERMIT IS ISSUED SUBJECT TO THE PROVISIONS OF THE MUNICIPAL CODE AND REGULATIONS. PROJECT MUST COMPLY WITH THIS PERMIT. ANY MODIFICATIONS REQUIRE ADVANCED WRITTEN APPROVAL FROM THE DIRECTOR OF PARKS, RECREATION AND FORESTRY. FAILURE TO COMPLY IS A VIOLATION OF MUNICIPAL CODE.

This Permit Issued By:

_____ FORESTRY SUPERVISOR

~APPENDIX D. SAMPLE ANNUAL ARBORIST PERMIT~



Department of Parks, Recreation and Forestry
6801 Delmar Blvd., University City, MO. 63130, (314) 505-8619

ANNUAL ARBORIST APPLICATION

Required for:

Businesses engaged in pruning, treating or removing any City Tree or trees in a Development Project over 12" DBH

Applicant Name: _____ Date: _____

Applicant Address: _____

Certified Arborist and Certification #: _____

Proof of Liability Insurance Declaration attached (\$500,000) _____

Proof of Workman's Compensation Insurance Declaration attached _____

Address of Work Site: _____

PERMIT FEE DUE THE CITY: \$28.50

SIGNATURE OF APPLICANT

ANNUAL ARBORIST PERMIT

PERMIT#: _____ DATE: _____

THIS PERMIT IS ISSUED SUBJECT TO THE PROVISIONS OF THE MUNICIPAL CODE AND REGULATIONS. PROJECT MUST COMPLY WITH THIS PERMIT. ANY MODIFICATIONS REQUIRE ADVANCED WRITTEN APPROVAL FROM THE DIRECTOR OF PARKS, RECREATION AND FORESTRY. FAILURE TO COMPLY IS A VIOLATION OF MUNICIPAL CODE.

This Permit Issued By:

CITY FORESTER