



Tree Preservation Specifications

Construction Damage Prevention

Forestry Division
Tree Care Standards
Quick Reference Fact Sheet
#2

❖ Purpose

Every year, large numbers of trees are damaged by construction activities. In many cases, the construction damage that trees sustain is preventable or the severity can be greatly reduced when tree preservation is incorporated into the design and building phases of construction. Trees are a valuable public resource that enhances the quality of life and the general welfare of city residents and visitors. Trees also enhance the unique character and the physical, historical and aesthetic environment of the City of St. Louis. Therefore, it is difficult to justify the loss of any tree, especially mature trees, which provide the greatest amount of benefits, to any type of preventable damage. The Forestry Division has developed tree preservation specifications to assist all parties involved in construction and land development activities on how to properly preserve, protect and work around trees during those activities.

City of St. Louis Tree Preservation / Protection Ordinance Ordinance 49722

- ❖ In the erection or repair of a building or any structure the owner thereof shall place or cause to be placed guards around all nearby trees in the street as shall effectively prevent injury to them. *(Protecting Trees During Construction-Ord. 49722-2(38))*
- ❖ No person shall permit any toxic chemical or other injurious substance to seep, drain or be emptied on or about any tree in the streets of the city. *(Chemical Injury-Ord. 49722-2(33))*
- ❖ No person shall place any stone, cement or other substance about any tree in any street, which shall impede the free entrance of water or air to the roots of such trees without leaving an open space of ground around the trunk of such tree of not less than four feet square. *(Open Space Around Trunk-Ord. 49722-2(34))*
- ❖ Except upon written permit issued by the Commissioner of Forestry, no person shall himself, or by another, plant or set any shrub in any street or pull up, cut down, burn, destroy, remove, prune, paint, spray or any manner interfere or tamper with any tree or shrub located in any public street of the city...*(Ord. 49722-2(32))*

❖ Specification Coverage

These tree preservation specifications apply:

- To projects where the Forestry Division has to approve or sign off on the project as a condition of its completion.
- To property owners with projects that involve or will occur in close proximity to street trees. These specifications are written to comply with Ordinance 49722 (above).
- Public works projects involving other city agencies where applicable.

The Forestry Division does not regulate the preservation of trees on private property. It is important to remember that trees can increase property values by as much as 25% and that the loss of a tree is often not fully appreciated until after it is gone. Therefore, these preservation specifications are readily adaptable for use by property owners and their use is encouraged. Although private tree preservation is not regulated, Ordinance 64804 does authorize the Forestry Division to cite property owners for dead, defective and diseased trees found on their property, and requires them to correct these conditions. Construction damage can create or hasten all three of the above listed problems.

Common Causes of Construction Damage

1. Heavy construction equipment operated around or under trees can create mechanical damage when this equipment strikes a tree's trunk and branches. Mechanical damage stresses a tree and making it more susceptible to disease and insect attack. Injuries also create wounds that invite decay causing fungi. Heavy equipment can also compact the soil creating an environment unsuitable for root growth.
2. Construction material left around trees can compact the soil, leach into the soil or contribute to a tree sustaining mechanical damage when equipment is brought in to move the material.
3. Tree roots are damaged during soil excavation. This damage is exacerbated when roots are torn, ripped or pulled with a backhoe rather than cleanly cut. The majority of a tree roots grow within the upper 18 inches of the soil and any type of excavation or utility trenching can severely damage a tree.
4. Soil left around a tree for an extended period of time can suffocate the roots of a tree. In addition, a tree can sustain mechanical damage when equipment is brought in to move the soil.
5. Even the benefits trees provide can result in negative consequences during construction. Construction equipment is often left or parked under trees because of the shade they provide. This results in soil compaction and can lead to mechanical damage from equipment striking a tree's trunk and branches.
6. The extensive removal of tree roots can affect the structural stability of the tree.

REPORT CONSTRUCTION DAMAGE

Construction damage to street and park trees can be reported by calling the Citizens' Service Bureau at (314) 622-4800. Please provide the problem address and if possible the name of the responsible contractor. Damage can be reported anonymously.

❖ Tree Preservation Specifications

I. Tree Protection Zone

- a) A tree protection zone shall be established around every tree that is being preserved in the construction area. Protective fencing shall be installed to identify and delineate the tree protection zone around each tree. The installation of protective fencing around a group of trees is acceptable. Group fencing shall use the critical rooting area of the outermost trees to establish a tree protection zone.
- b) The tree protection zone shall be established for each tree by determining its critical rooting distance. Critical rooting distance is determined by multiplying the trees diameter at 4.5 feet above soil line by 2.5.
 - *Example: A tree with a diameter of 6 inches would have critical rooting area of 15 feet. Protective fencing would then be installed in a circle extending 7.5 feet from the trunk to create a circle with a radius of 15 feet.*

Specifications Continued On Back

I. Tree Protection Zone Continued

- c) Trees growing in confined areas that are less than their critical rooting distance shall have a tree protection zone that extends to the furthest edge of that confinement.
- Example: A tree growing in a 4 ft x 4 ft tree box would have a tree protection zone the size of that tree box.
 - Example: A 12 inch diameter tree growing in a 4 foot tree lawn (the area between the sidewalk and curb) would have protective fencing installed in a square 4 feet wide (to the edge of the curb and sidewalk) and 30 feet long (15 feet on both sides of the trunk) along the tree lawn.
- d) Construction equipment, trailers, traffic and storage must remain outside of the tree protection zone at all times.
- e) No materials, equipment, spoil or waste or washout water may be deposited, stored or parked within the tree protection zone.
- f) Erosion control devices such as silt fencing, debris basins and water diversion structures shall be installed in such a manner to prevent siltation and/or erosion within the tree protection zone.
- g) Spoil from trenches, basements, or other excavations shall not be placed within the tree protection zone, either temporarily or permanently.
- h) No burn piles or debris pits shall be placed within the tree protection zone. No ashes, garbage or debris may be dumped or buried within the tree protection zone.

II. Protective Fencing

- a) Protective fencing shall be installed in such a manner that it maintains its rigidity and its effectiveness as a barrier. It shall also have a minimum height of 4 feet.
- b) Protective fencing shall be installed before construction begins.

III. Tree Maintenance

- a) A qualified arborist and not construction personnel will perform any additional tree pruning required for clearance during construction.
- b) City trees may not be pruned or removed without first contacting the Forestry Division for a permit pursuant to Ordinance 49722. Permits are issued at the discretion of the Commissioner of Forestry.
- c) Tree(s) to be removed that have branches extending into the canopy of other tree(s) that are being preserved must be removed by a qualified arborist and not by construction personnel. Trees requiring removal, shall be removed in such a way to cause the least amount damage to under story and other nearby trees being preserved.
- d) Any brush clearing required within the tree protection zone shall be accomplished using hand-operated equipment.
- e) All tree pruning shall be in accordance to the most recently published *ANSI A300 (Part I) Pruning Standards*. (American National Standard For Tree Care Operations)

IV. Pesticides

- a) Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. It is a violation of Federal law to use any pesticide in a manner inconsistent with its label. Any pesticide used on the construction site must be safe for use around trees and not readily transported by water.

V. Site Access

- a) A temporary access road(s) shall be created using 6 inches of mulch to protect the soil from compaction in areas subject to repeated construction traffic. The mulch shall be replenished as necessary to maintain a 6 inch depth.

VI. Root Pruning

- a) Trees shall be root pruned before grading, pad preparation or excavation for foundations, utility trenching or walls occurs. Roots shall be pruned 1 foot outside of the established tree protection zone by cutting all roots cleanly to a depth of 30 inches. Roots shall be cut manually by digging a trench and cutting exposed roots with a saw, loppers, chainsaw, vibrating knife, rock saw, narrow trencher (with sharp blades) or other approved root pruning equipment. A backhoe or other equipment that rips, tears or pulls roots from a tree is not an approved or acceptable method of root pruning.

VII. Underground Utilities

- a) All underground utilities and drain or irrigation lines shall be routed around the tree protection zone. If underground utilities must pass through the tree protection zone, they shall be tunneled or bored under the tree for the duration of the tree protection zone.

VIII. Consultation

- a) The Forestry Division will inspect all construction sites upon request that involve city trees and provide recommendations for tree preservation. The Forestry Division **will not** make recommendations or site inspections for projects involving trees on private property. A construction site consult can be scheduled by calling 613-7200. The Forestry Division should be consulted before work begins. This consultation should involve more than a request to discuss what trees require removal, but also steps that can be taken to preserve trees as well.
- b) Protective fencing shall not be removed or relocated without prior permission from the project manager.
- c) The Forestry Division shall be notified as soon as possible when a street or park tree sustains construction damage so corrective actions can be recommended and pursued.

IX. Enforcement

- a) The City of St. Louis Board of Public Service (BPS) is the overall project manager for most city construction projects. Therefore, they are responsible for the enforcement of tree preservation during these projects. Where applicable, the Forestry Division will issue a *Tree Preservation Notice* to construction contractors and property owners with construction sites that lack or have insufficient tree protection. This notice is not a citation, but a reminder that they need to practice tree preservation on their construction site. BPS will receive a copy of this notice if they are construction manager for that site.
- b) The Forestry Division may not sign off on, or may submit documentation about lapses in tree preservation on projects the division is required to sign off on as a condition of their completion.
- c) Street trees are public property and the Forestry Division may forward cases of extensive street tree damage inflicted by an adjoining property owner to the city counselor's office for prosecution as authorized by Ordinance 49722.

Questions???

If you have questions about tree preservation please contact the Forestry Division at 613-7200.

TREE PRESERVATION IS AN ESSENTIAL PART OF PROGRESS