Tree preservation and protection are key components of the UMD Master Plan’s goal of restoring a north woods tree cover at UMD. Besides creating a welcoming image for the campus, trees provide habitat for diverse species of wildlife, improve air quality, lower ozone levels, help cool the campus and provide storm water benefits. Trees affect storm water above ground (interception, evaporation, and absorption), at the surface (temporary storage), and below ground (infiltration, permeation and filtration). For every 5% of tree cover added to a community, storm water is reduced by approximately 2%. The effects of trees on storm water runoff are greatest on sites whose soils are relatively impermeable. A tree’s weekly water needs equal a minimum of 5 gallons plus 5 gallons per caliper inch. A 2 caliper inch tree needs approximately 15 gallons per week. “Caliper inch” refers to the diameter of a tree four and a half (4.5) feet above the ground.

Tree Preservation and Replacement

Trees within construction sites are subject to the following requirements:

- The landscape designer (or UMD Project Manager) shall develop a “tree preservation plan” showing trees to be protected and those to be removed. UMD Grounds staff shall determine the type, health, and caliper of the trees slated to be removed.
- Removal of specimen trees should be avoided. A “specimen tree” is a deciduous tree twelve (12) caliper inches or greater, a coniferous tree whose height is twenty (20) feet or greater, or any size memorial or specially designated tree. If removal is required, they shall be replaced at a ratio of two (2) caliper inches per caliper inch (or feet per foot). For example; a twelve (12) caliper inch tree could be replaced with six (6) four (4) caliper inch trees or twelve (12) two (2) caliper inch trees.
- Removal of trees within 50’ of streams, wetlands, or ponds should be avoided.
- Tree preservation through tree moving is permitted. Only trees with a reasonable chance of survival can be moved. UMD Grounds staff or a certified arborist shall determine the survivability of trees slated to be moved.
- Trees should be replaced within the same watershed as those removed. Replacement of trees outside the project site can be accomplished through coordination with UMD Grounds.
- Removal of deciduous trees between four (4) to eight (8) caliper inches; coniferous trees ten (10) to fifteen (15) feet high; or groups of smaller trees which provide a buffer or screening are to be replaced at a ratio of one half (.5) caliper inch per inch (or foot per foot for coniferous trees).
- Removal of deciduous trees eight (8) to twelve (12) caliper inches or coniferous trees fifteen (15) to twenty (20) feet high will be replaced in equivalent total caliper inches (or foot per foot).
- Replacement trees shall be a minimum of one and a half (1.5) inches in diameter if deciduous, or five (5) feet in height if coniferous.
- Trees removed because of natural death, disease, invasive designation or non-construction related safety issues do not need to follow replacement requirements.
Tree Protection

For trees to remain healthy during a construction project they must be protected from construction activities. In addition to the University of Minnesota’s Construction Standards Division 1015302. Tree and Plant Protection, the following requirements apply to all construction sites:

- Trees within the construction zone shall be protected from damage and soil compaction by equipment, debris, and storage intrusion. Suggested materials for protection are concrete barricades, construction fencing or chain link fencing – protection type to be determined by owner representative (UMD project manager) in conjunction with UMD Grounds staff.
- Tree protection shall be placed at a minimum of one and a half (1.5) times (in feet) the caliper dimension (in inches) from the base of the trunk. For example; a ten (10) caliper inch tree would require protection a minimum of fifteen (15) feet from the base of the trunk.
- Trees that are necessarily impacted by construction shall be pruned and root pruned as required by UMD Grounds staff or a certified arborist.

Tree Planting

For the long term health of a tree it must be correctly situated in its environment and must not create a detriment to the safety and maintenance of the campus.

- Climate, topography, soil conditions, and surrounding vegetation should be considered when choosing trees. Native trees are preferred.
- Sites should include a mix of deciduous and coniferous trees.
- The mature size of a tree should be considered when choosing a location. Trees (at maturity) should not touch buildings or obscure signage.
- Replacement trees should be preferentially located such that they provide shade to streams, wetlands, ponds, or impervious surfaces.
- Trees shall be planted so the root collar is located four (4) to six (6) inches above the finished grade. Stock should be examined to establish the location of root collar. Remove any extra soil from around trunk.
- Netting, burlap, twine, etc. shall be removed from the upper one-third (1/3) or more of root ball.
- Tree holes shall be a minimum of three (3) times the width of the root ball or container.
- Sides and bottom of tree hole shall be scarified to encourage root growth into the existing soils. Blend existing and planting soils to refill planting hole.
- Score the outside of soil mass to redirect circling roots when necessary.
- No street tree shall be planted in boulevards less than eight (8) feet wide or closer than twenty (20) feet to any intersection.
- No tree shall be planted closer than ten (10) feet to any fire hydrant.
- No coniferous trees shall be planted such that they would be within five (5) feet of a sidewalk at their mature width.

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