

ARBORICULTURE TREE CARE PLAN

Carnegie Mellon University

Facilities Management and Campus Services

Plan Established November 2014

Last Updated March 2023

PURPOSE:

This plan is designed to provide a guide to be used in the maintenance of trees in the Carnegie Mellon University campus landscape. It will outline the practices and procedures to be used in this effort. It will identify tree care policies, maintenance and removal practice and plan enforcement responsibilities.

RESPONSIBILITIES:

Facilities Management Services will be responsible for operating and monitoring the University arboricultural program. The Campus Tree Care Advisory Committee will be responsible for reviewing the annual progress of the plan and providing guidance. The FMS Grounds Manager will conduct the day-to-day operations of the tree care program.

CAMPUS TREE CARE POLICIES:

Campus tree care practices and procedures will be conducted pursuant to the guidelines of tree-care established by the International Society of Arboriculture (ISA) and the American National Standard for Tree Care Operations.

CAMPUS TREE CARE ADVISORY COMMITTEE:

The Advisory Committee will have a minimum of five members: Grounds Manager, Green Practices and Sustainability Manager, a faculty member, CMU student, and a member of the local community. The committee membership roster will be reviewed on a three year cycle.

The Advisory Committee will review annual tree care program reports and provide input in both the development of campus tree initiatives and the scope of tree care maintenance practices.

PROGRAM GOALS:

- To provide a beautiful and sustainable tree canopy for the Carnegie Mellon campus community through the preservation and aesthetic enhancement of campus trees.
- To preserve historic campus trees and build upon collection with native species to reinforce the character of both the artificial and natural environments on campus.
- To maintain CMU's status as a campus arboretum.

CAMPUS TREE CARE PRACTICES:

Pruning:

- *Crown Cleaning*: pruning to remove one or more of the following non-beneficial parts: dead, diseased and/or broken branches
- *Crown Elevation*: selective pruning to provide vertical clearance
- *Crown Reduction*: selective pruning to decrease height and/or spread
- *Thinning*: selective pruning to reduce density of live branches
- *Restoration*: selective pruning to redevelop structure, form, and appearance of severely pruned, vandalized, or damaged trees
- *Visa/View*: utilization of one or more pruning methods for the purpose of enhancing a specific line of sight

Pruning Priorities:

- *Safety*: dead, dying, or structurally unstable branches will be removed to reduce the likelihood of personal injury and/or property damage
- *Security*: live foliage that can be used as cover or aid criminal activity will be removed
- *Maintenance*: the pruning methods outlined above will be employed on an as needed basis to encourage proper structure, provide adequate clearance, minimize disease and insect impact and reduce potential damage from storm activity.

Tree Removals:

Trees will generally only be designated for removal when required to protect public safety, accommodate necessary development, or improve the overall quality of the landscape.

Trees may be removed only after consultation with university officials.

Designated trees will be removed in a controlled manner utilizing one of the following methods: Climbing and rigging; Aerial lift assist; Crane assisted; or Directional felling.

All tree wood and debris will be cleaned up and hauled off site. Unless directed otherwise by the Grounds Manager, all stumps will be ground 6-8" below grade. Stump chips will be removed, disposed of offsite, and replaced with screened topsoil and area will be reseeded with grass where appropriate.

Fertilization:

NPK fertilizer will be applied to select trees to maintain optimal nutrient levels within the tree's critical root zone when visual appearance or plant analysis indicate a need. Fertilizers will be delivered utilizing "deep-feed" liquid injection of fertilizer stake soil inserts along the tree's drip-line.

TREE PRESERVATION:

To ensure minimal impact upon tree growth and development and to protect the integrity of the tree canopy tree preservation methods will be employed to trees that are within the boundaries of construction projects.

- *Fertilization*: trees that will be affected by construction activities should receive deep-feed liquid fertilization within their root zone.
- *Protective Fencing*: trees to be impacted by construction activity should receive perimeter fencing around the tree(s) at the drip-line.
- *Mulch*: a 4 inch layer of shredded bark mulch may be added to areas along tree fence lines and adjoining site areas to help decrease soil compaction resulting from construction activities. This mulch should be removed at the end of project work.

INTEGRATED PEST MANAGEMENT (IPM):

An integrated pest management (IPM) approach will be used to manage insect and disease problems in the tree canopy. IPM uses information on the life cycles of pests and their interaction with the environment to determine the most economical and environmentally effective way to employ pest control methods.

There are essentially four parts to the IPM program or process:

- *Set Action Thresholds*: Determination of what level of the pest population or environmental conditions that will require pest control action to be taken to prevent a serious aesthetic or economic threat to the tree canopy.
- *Pest Monitoring*: Not all tree pests require control measures to be taken. In monitoring the tree canopy identification of pests and population levels that can pose a serious threat can be identified and the appropriate control decisions can be made.
- *Prevention*: cultural methods employed to the tree canopy landscape in relation to irrigation, fertilization, understory growth, soil compaction etc. These cultural practices can help prevent the buildup of threatening pest and/or disease problems within the tree canopy.
- *Control*: Once monitoring, pest identification and cultural methods have been employed and there still exists a threatening pest population within the tree canopy a targeted pesticide application will be made utilizing the best effective and least hazardous chemical pesticide.

TREE DAMAGE ASSESSMENT:

Tree damage value can be determined by using an algorithm established by the ISA to determine a large tree's economic value. This equation method would be used for trees that are larger than available within the Nursery Trade.

Appraisal Value = (trunk area (in²) x basic price / in²) x species x condition x location

Trees that are of a size that are available within the Nursery Trade can be valued using the following equation: *Appraisal Value = Cost of Tree x 2*

PROHIBITED TREE PRACTICES:

- Painting of tree trunks and limbs
- Attachment of any unapproved rope, cable, brace or support to any tree
- Attachment of any item to tree wood utilizing any fastener
- Any high impact activity within the drip-line of a tree canopy
- Unapproved removal or pruning of any campus tree
- Any unapproved excavation within the drip-line of a campus tree

PLAN ACCESSIBILITY:

This plan will be made accessible to the campus community as a document that can be read and/or downloaded from the Facilities Management Services website. This Tree Care Plan will also be made available to vendors performing construction work on the CMU campus.

CAMPUS TREE INVENTORY:

Facilities Management Services has conducted a campus tree inventory that identifies tree species. This tree inventory was made accessible in 2022 via a public GIS website available to the community. Updates to inventory are made when trees are removed and new trees are planted.

In 2019 the CMU campus qualified for Level I accreditation in the ArbNet arboretum accreditation program. The CMU FMCS Grounds Operation is a member of the ISA / International Society of Arboriculture.

CAMPUS ARBORICULTURAL PARTNERS:

CMU Grounds works with arboriculture professionals to plan, service, and care for the campus tree canopy. Our professional partners are:

- Davey Tree (Eric Countryman)
- Horhut Tree Experts (Steve Horhut)
- Beaverjack Tree Service (BJ Schaltenbrand)