

University of Maryland, Baltimore Tree Care Plan

Contents

- Introduction..... 1
 - Purpose..... 1
 - Targets and Goals..... 1
 - Responsible Department/Party..... 2
- Campus Tree Advisory Committee..... 2
- Communication Strategy 2
 - Future Outreach and Engagement 3
- Tree Care and Maintenance..... 3
 - Planting Guidelines 3
 - Approved Plant List..... 3
 - Prohibited Plant List..... 3
 - Tree Maintenance 3
 - Well Established and Older Trees and Shrubs..... 4
 - Fertilization: Trees and Shrubs..... 4
 - Tree & Shrub Pest Management..... 4
 - New Planting and Young Trees..... 5
 - Mulching 5
 - Tree Protection and Preservation 6
 - Tree, Plant, and Soil Protection During Design and Construction 6
 - Catastrophic Events 7
- Definitions..... 7
- References 8



Introduction

The University of Maryland, Baltimore (UMB) a public university that is a part of the University System of Maryland, a public institution that is instrumental to the State of Maryland. It is Maryland's public health, law, and human services university. The 71-acre research and technology complex encompasses 67 buildings located in West Baltimore, a city that has become a model for urban rebirth and vitality. The UMB complex has over 7,800 faculty members and staff, as well as 7,000 students enrolled in across seven schools: Dentistry, Law, Medicine, Nursing, Pharmacy, Social Work, and Graduate.

UMB is home to Davidge Hall, the oldest continuously used medical education building in the United States. An 80-foot English elm, known as the Davidge Elm, once resided next to the building for almost 200 years. It is estimated to have been planted around Davidge Hall's construction in 1811. The elm has been a symbol for the University and was listed in the American Forestry Association of Washington, D.C.'s list of famous historical and noteworthy trees in 1989. The tree was removed in 2001 when it was deemed unsafe due to age and disease, but its legacy carries on. A sapling grown from seeds taken from the original Davidge Elm was planted next to the building during the 200th anniversary celebration of Davidge Hall in 2011.

Purpose

The purpose of the University of Maryland, Baltimore Campus Tree Care Plan is to identify and promote best practices in policies, procedures, and standards used in the care of trees on campus. This document serves as a resource for the University's stakeholders involved in tree management and maintenance, including UMB's contracted landscaper.

Targets and Goals

UMB's Sustainability Strategic Plan outlines overarching goals and strategies for the University, with four dimensions of focus: utilities and emissions, campus planning and design, waste and procurement, and education and engagement. Within this plan, UMB has identified the following tactics for improving practices and providing landscapes that benefit all life within its campus community:

- Support the City of Baltimore's goal of establishing 40% tree cover by 2030 to combat urban heat island effect for UMB and its neighbors by increasing tree plantings on campus.
 - Increase total number of campus trees by 10% over 5 years
- Utilize UMB's landscaping contract to ensure maintenance and care of existing trees on campus.

Furthermore, the University is committed to the greater Baltimore community. By protecting existing old growth trees and expanding access to green space on campus, the University provides shaded areas for the public as they travel through the campus.

Responsible Department/Party

UMB's landscaping services are currently contracted out to BrightView. This contract is managed by the University's department of Environmental Services (EVS).

Campus Tree Advisory Committee

The University established a Tree Advisory Committee in July 2022. This committee is led by the University's Office of Sustainability and currently has members from students, faculty, facilities, and the local community. The committee is to meet semiannually or as needed. Term limits are laissez-faire.

The committee's role is to establish a tree care plan and identify areas on campus in which additional plantings may take place. The committee will consider proper conditions for tree planting success including site location and type of tree to be planted, areas of campus that lack green space, and strategies to best serve the UMB and Baltimore community by providing additional shaded areas on campus.

Student Representation

- Kimia Abtahi, Sustainability Fellow and 4th Year Medical Student

Faculty Representation

- Lane Victorson, Clinical Instructor at School of Social Work and Director of Community Organizing and Field Education at Social Work Community Outreach Service
- Nicole Mattocks, Research Assistant Professor at School of Social Work

Facilities and Operations Representation

- Anna Borgerding, Director of Operational Excellence and Sustainability
- Elizabeth Main, Associate Director of Sustainability and Operational Excellence
- Angela Ober, Senior Sustainability & Effectiveness Specialist
- Mark Drymala, Assistant Director of Environmental Services (Administrative)
- Anthony Consoli, University Architect
- Sean Ryan, BrightView Landscape Services Account Manager

Community Representation

- Bill Joyner, Associate Vice President of Community Engagement

Communication Strategy

The University of Maryland, Baltimore's Office of Sustainability will regularly communicate on its tree planting efforts and share tree planting opportunities (both on- and off-campus) via the office's website; newsletter; social media platforms (Facebook, Instagram, and Twitter); and publish stories and announcements in *The Elm*, a university-wide publication.

UMB will share the Campus Tree Plan on the sustainability website for public access and work with contractors to ensure the plan is being followed.

Future Outreach and Engagement

UMB's Office of Sustainability plans to hold annual tree planting and maintenance events as educational opportunities for campus and community members to learn about the benefits of trees. A GIS-based tree inventory will be created to map the University's existing trees on campus, and a public facing StoryMap will be created to assist with communicating UMB's efforts to increase tree canopy on campus.

Tree Care and Maintenance

Planting Guidelines

Street tree species selected for the campus must have the ability to withstand urban conditions, be pollution and drought tolerant, have long life spans, and ideally have a rapid growth rate when young that slows with maturity. Street trees also need to have a root structure that will not easily upend curbs and pavements. In all cases, the designer shall consider site conditions, such as shallow utility lines and pedestrian lighting, before choosing a tree species for planting. In the case of shallow utilities, smaller trees or a raised planter may be used.

UMB's landscaping contractor will provide trees, shrubs, sod, and other plant material that complies with recommendations and requirements of the "American Standard for Nursery Stock (ANSI Z60.1)" All plant material is to be No. 1 grade or better, in accordance with requirements of the applicable standard referenced above.

Approved Plant List

UMB has created a Native Landscaping Master List of plantings that are acceptable for the campus. These plants are what UMB prioritizes for its plantings, but alternatives that may be non-native may be planted depending on site conditions. Please see the attached list (Appendix A).

In addition to UMB's Native Landscaping Master List, Baltimore Recreation and Parks' TreeBaltimore Baltimore City Street Tree Species List is also considered when planting trees on campus (Appendix B).

Prohibited Plant List

UMB prohibits any new plantings of invasive species on its campus, following guidelines as a state institution from the Maryland Department of General Services' [Maryland Green Purchasing Committee's Approved Specifications for Landscaping Plants](#).

Tree Maintenance

All landscape maintenance and enhancement work performed for the University shall be done using nothing but the highest of standards using current editions of the "[Landscape Contractors Association \(LCA\), MD - DC - VA](#)" and "[Associated Landscape Contractors of America \(ALCA\)](#)" as guidance.

Well Established and Older Trees and Shrubs

1. All trees and shrubs shall receive no less than the following: All trees and shrubs that are not in a lawn area, as well as that are in-lawn, shall receive the following. Two and a half inches (2 ½) of new high quality shredded hardwood bark mulch applied twice each year, once in the spring and once in the fall. Remove excess mulch when the buildup exceeds that recommended by the industry. In-lawn trees shall have a well-defined "Tree Ring". Weed and grass control shall be maintained by the use of pre- and post-emergence chemicals. Weeds and grasses that survive treatment must be removed by hand. All beds must have clean, sharp, well-defined edges, thus permitting rapid, level mowing around trees without damaging the trees with mower wheels and other mower parts.
2. Irrigation: All planting beds not in the lawn areas shall be watered as necessary to maintain a uniform healthy growth pattern. Care must also be taken to not over water or "water log" any area watered. "In-Lawn" trees and other plantings shall be protected from over watering and run-off drowning.
3. All trees and shrubs shall be pruned and maintained clear of all roads, drives, and sidewalks so as not to inhibit pedestrian and vehicle traffic. Prune hedges so they're wider at the base than at the top, to allow all parts to receive sunlight and prevent legginess. Winter pruning may be necessary due to heavy snow loads.
4. Pruning shall be done to keep plants clear of all doorways and windows. Any limbs and branches touching or brushing buildings or other structures shall also be removed.
5. Pruning shall be provided to encourage a healthy natural growth pattern for each specific variety of plant materials. All pruning will be accomplished in accordance with accepted practices and standards.

Fertilization: Trees and Shrubs

All ornamental trees up to 6" caliper shall be fertilized with 10-6-4 analysis fertilizers at the rate of 1 pound per inch of trunk caliper. Shrubs and ground cover shall be fertilized with 10-6-4 analysis fertilizers at the rate of 4 pounds per 100 square feet of bed areas once in the spring. Acid-loving plant material shall be fertilized with an ericaceous fertilizer, i.e., Hollytone, at the manufacturer's recommended rate.

Tree & Shrub Pest Management

Application of pesticides must comply with the [Maryland Department of Agriculture, Maryland's Pesticide Applicator's Law](#) - Pesticide Regulation Section, current edition.

The landscaping contractor shall be responsible for the detection, monitoring, and control of plant-damaging insects. The contractor shall be aware of the potential pests and shall make regular inspections of the plant material and treat as necessary. The goal is to limit damage done to landscape plants by utilizing Integrated Pest Management (IPM) techniques. Plants subject to problems are targeted, inspected and when necessary treated.

1. Spraying operations will cover plant material up to a height of 25'. Plants and trees exceeding this height can be serviced as needed under a separate agreement. Horticulture oil shall be applied in early April to plants which have scale present or are known to be prone to infestation by mites or other insects (e.g. needled evergreens, juniper, Euonymus, holly, ornamental cherry, oak, and maple).
2. Disease of ornamental plant material will be treated on a curative basis as needed.
3. In all mulched areas, pre-emergent (early/late spring) and post-emergent (summer/fall) weed control applications shall be made. An additional application to control hard-to-manage weeds is also included. Weeds that survive treatments may require hand removal.
4. Any/all pesticide applications must be made in accordance with Federal and State requirements and must be supervised by a certified pesticide applicator licensed by the Department of Agriculture for the State of Maryland.

New Planting and Young Trees

All shrubs and trees shall receive no less than the following:

1. Eliminate all bracing and tree supports as rapidly as plants can become self-supporting. Tree supports that must remain should be kept in good repair and functioning at all times, keeping trees fully protected.
2. All new trees and shrubs should be deep soaked at installation and otherwise as necessary. Local soil and moisture conditions may dictate otherwise. Compliance with techniques currently recognized for standard landscape maintenance should be maintained.
3. Side shoots or branches may be "headed back" but are to be left on and encouraged on all thin or spindly tree trunks, as well as on all trees still in need of bracing or staking. This is to encourage more rapid trunk growth and natural strengthening.
4. Sucker growth from the base, ground level, or below should be removed.
5. On all trees (such as weeping cherry, globe catalpa, etc.) where budding or grafting of a unique growth form has been worked on to the top of a vertical stem, all twig or leaf growth below this union should be restricted and removed.
6. Pruning shall be provided to encourage a healthy natural growth pattern for each specific variety. All pruning shall be designed to develop and improve the future branching structure.
7. All pruning shall be done according to accepted practices and standards.

Mulching

Mulching is required twice each year, once in the spring completing all mulching prior to April 1 each year - and a second time in the fall beginning once most of the leaves are down and being completed no later than the second Friday in December. All mulching operations shall be in full compliance with procedures and techniques currently recognized as standard landscape maintenance practices. Mulching

operations must be done in a timely manner. The landscaping contractor will only utilize high quality shredded hardwood bark mulch. The contractor will provide a sample area designated by the University prior to installation for the entire campus. The University project manager or designee is required to approve mulch material provided for the sample area.

Tree Protection and Preservation

Tree, Plant, and Soil Protection During Design and Construction

Construction contractors are to conduct a pre-construction meeting with the University and A/E team arborist to review the existing trees on site to determine if any trees are to be removed and replaced. This meeting is to take place prior to the start of project mobilization or any construction activities. UMB will coordinate the replanting of existing trees from one construction site to another area of campus instead of removing the tree completely if conditions allow.

Trees shall be protected during construction and assessed after construction completion. Any damage to trees shall be noted, and damaged trees shall be replaced by the contractor at no cost to the owner. If trees are to be replaced, they shall be of the same species and indicated in the replacement tree schedule of the landscaping plans. Trees may be replaced by a different species if the original tree is not a UMB-approved tree or is an invasive species.

UMB's Office of Sustainability is currently working with Design & Construction to update its *A/E Procedural Manual for Design & Build* to ensure that tree protection standards are met for every construction project on campus. Current recommendations include only considering removing a tree if it is diseased and unhealthy and/or is a risk to public safety, and fencing off the area around a tree's critical root zone to avoid compaction and damage to the tree's roots.

Additionally, the University abides by the Reforestation Procedures laid out in its Policy chapter in UMB's *A/E Procedural Manual for Design & Build*:

Reforestation Procedures

Requirements: In accordance with Natural Resources Article, Section 5-103, all construction activities, let for bid involving land clearing of one acre or more by a unit of State government or any person using State funding for a construction project, shall clear only a minimum number of trees and other woody plants that are necessary and consistent with sound design practices. When clearing is conducted, an area equivalent to that cleared is to be reforested.

Site: Reforestation is to take place on the construction site or in the project right-of-way being used for construction if a suitable planting site is available. If not, then the constructing Agency or person may locate a suitable planting site on State owned or other publicly owned land in the county in which the construction activity is located. Reforestation may occur on these lands only when the Agency owning the land agrees to the proposed reforestation.

State Funds: Constructing agencies or other persons using State funds for construction activities are required to consult with the Department of Natural Resources prior to cutting in or clearing forest land and prior to the selection of an area of reforestation.

Unavailable Site: If a suitable planting site cannot be located, the construction Agency or person using State funds shall deposit five hundred dollars and no cents (\$500.00), for each acre cleared, into the Reforestation Fund of the Department of Natural Resources to be used for reforestation of suitable sites as they become available.

Construction Site: An Agency or person using State funds for construction projects shall request a review of the proposed construction site no less than two (2) months prior to clearing. The Request should be in writing to a designated representative of the State forester with a copy of the transmittal letter and review request form to the State forester.

Catastrophic Events

During the event of a storm, if campus trees are reported damaged and branches have fallen, UMB's landscape contractor and grounds crew will remove tree debris as necessary to prevent blocked pathways or other posed threats. When major tree damage occurs, the University's landscape contractor will be used to remove the tree.

Definitions

Arborist: a professional that practices the cultivation, management, and study of trees, shrubs, vines, and other woody plants.

Caliper: diameter of a tree trunk 4.5 feet above ground.

Compaction: compression of soil resulting in reduced pore space and denser soil. This can lead to a plant's decline in health. Common causes include high pedestrian traffic, saturated soils, construction, high clay content soils that are more likely to compact.

Critical root zone: also called the "tree protection zone." The minimum area beneath a tree that must be protected to ensure the health of the tree. This is estimated to be at least 1.5 times the width of the tree's canopy.

Fertilizer: nutrients provided to a plant, generally via soil.

Heading back: a pruning technique where a terminal branch is cut down to a side bud.

Invasive Species: a species introduced to an environment where it is not native and has caused economic, environmental, or human harm in its non-native area.

Landscape: the visible features of an area of land, its landforms, and how they integrate with natural or human-made features.

Legginess: description of excessive green growth of a plant.

Mulch: organic matter used as a protective covering around plants to prevent moisture loss, freezing roots, and growth of weeds.

Native Plant: a plant that occurs naturally in a geographic range where it has adapted to the location's physical conditions and co-evolved with other species in the local ecosystem.

Pruning: a practice comprising of select removal of specific branches of a tree. Pruning can remove unwanted branches, improve structure, and direct new growth.

Sucker: a fast growing stem originating from the root system that take up nutrients and energy away from the tree it grows on.

Tree canopy: the above ground portion of a tree's branches and leaves.

References

UMB Landscaping Contract Section 00400, Scope of Work, Articles 1-4

Urban Design Guidelines, [Urban Horticulture Section \(page 86\)](#)

A/E Procedural Manual for Design & Build, [Policies \(Chapter 3\)](#)

[Remembering the Davidge Elm During Founders Week 2021](#)

[University of Maryland Extension: Problems Caused by Compacted Soil](#)