

# Northwestern University Evanston Campus Tree Care Plan 2015

## Purpose

Northwestern University's Tree Campus USA Tree Care Plan is used to identify the policies, procedures, and practices that are used in establishing, protecting, maintaining, and removing trees on NU's campus. The goal of the plan is to preserve and maintain a safe, attractive, and sustainable campus forest.

Preserving these natural spaces is achieved by:

- Planting adaptive, low-maintenance, and drought-tolerant plants where possible to limit the need for fertilizer and irrigation.
- Choosing perennial species in landscape design.
- Nurturing existing plants, like the campus' mature trees, especially during campus construction.
- Encouraging walking by constructing wide, plentiful walkways and placing new parking lots on the perimeter of campus where possible.

This is a living document to be revised as needed with changes and or additions based on University, Department, Municipal, and or other Regulatory agency policies or information.

## Responsible Department

Northwestern University's Facilities Management Department oversees the care of all outdoor environments including all landscape plant material and enforces the Landscape Maintenance and Care Plan.

## Campus Tree Advisory Committee

Northwestern University's Campus Tree Advisory Committee is comprised of:

- Steve Camburn, Assistant Grounds Services Supervisor, s-camburn@northwestern.edu
- Christina Cilento, student, ChristinaCilento2017@u.northwestern.edu
- Wendy Pollock, Evanston Treekeepers member, wendy.pollock@gmail.com

- Allison Potteiger, Sustainability Communications Coordinator, Office of Sustainability, [allison.potteiger@northwestern.edu](mailto:allison.potteiger@northwestern.edu)
- Tim Spahn, Grounds Services Supervisor, [t-spahn@northwestern.edu](mailto:t-spahn@northwestern.edu)
- Russell Walker, Faculty member, Associate Professor, Clinical, Managerial Economics and Decision Sciences from J. L. Kellogg School of Management, [russell-walker@kellogg.northwestern.edu](mailto:russell-walker@kellogg.northwestern.edu)
- Ann Ziegelmaier, University Landscape Architect, [a-ziegelmaier@northwestern.edu](mailto:a-ziegelmaier@northwestern.edu)

The role of the Campus Tree Advisory Committee is to effectively liaise between the different facets of the Northwestern community as well as the greater Evanston community. Through this partnership, collaboration, and engagement we hope to educate the region on the importance of trees and natural space. The committee will meet bi-annually.

## Campus Tree Policies

### Planting and Tree Diversity

NU adheres to industry standards for planting procedures and ensures proper species selection by purchasing from high quality locally grown nursery stock. NU promotes species and age diversity and eliminates mono culturing in the campus tree inventory. Lastly, during construction and renovation on campus, Facilities Management protects its high value trees.

### Mulching

Tree mulching takes place every two years for trees up to approximately 6". Periodically, drip lines of larger trees and tree groupings are mulched extensively with waste wood chips or shredded bark. Volcano mulching is prohibited.

### Irrigation

Newly planted trees are watered during planting and once per week for the first year. Monitoring stress and drought conditions throughout the year may require additional watering of any of the trees on campus. Sections of campus under automatic irrigation are monitored closely for over-watering.

### Tree Pruning

Pruning shall be conducted with a clear objective or outcome. All pruning follows the International Society of Arboriculture Guidelines. In general campus trees are pruned on a three-year maintenance cycle in addition to the reasoning below.

## Pruning Purposes

- Pruning takes place for both underground and over-head utilities.
- Pruning occurs for new construction and building restoration.
- Pruning takes place for vehicular and pedestrian visibility and to improve safety and aesthetic vistas.
- Pruning is beneficial to the plant's health when it is vital to reduce canopy size and or canopy configuration in effort to reduce weight and improve the tree's structural integrity and balance.
- Pruning may be necessary to decrease potential tree storm damage and related pedestrian safety concerns during weather events.
- Pruning is occasionally necessary to remove storm damage and rodent damage.
- Pruning occurs when removing dead wood or ill-health wood with signs of disease, insect damage, or fungus to both promote tree health and public safety.
- Pruning takes place when removing objectionable growth, such as water sprouts, sucker growth, thorns, fruit, or past pruning mistakes.

## Fertilization and Pest Management

Trees are treated for pest problems as needed. There is an extensive Dutch Elm Disease treatment program on campus. There is also a program to save Autumn Purple Ash trees from Emerald Ash Borer. There is no regular tree fertilization beyond treatment received as a result of fall lawn fertilization. Specimen or high-value trees may receive prescription fertilization if severe nutrient deficiencies are diagnosed.

## Tree Fertilizing

Tree fertilization can take many forms with injections, root-feeding, slow-release granular form, or composting in the form of mulch.

Fertilization takes place to:

- Improve vigor and or existing soil structure for the benefit of the tree at time of planting.
- Treat tree for particular disease and or other trauma such as construction, compaction, or other negative tree impacts.
- Offset soil deficiency or changes, such as:
  - Chemical salt build-up from snow events, which impact the soil or tree growth.

- Native sandy loam, which is deficient in retaining nutrients for certain tree species.
- Leaching of hardscape (i.e. sidewalks changing soil alkalinity), air pollutants and other detrimental environmental conditions.

### **Storm Response and Recovery**

When responding to storm recovery, ensuring walkways and roads are cleared is the number one priority. Trees are salvaged if possible and if not, they are removed. Pending funding, the removed trees will be replaced.

### **Site Clearing**

When a site clearing takes place on campus, existing trees have been identified in advance if they must remain or be relocated. If a tree is to remain in its existing location, temporary fencing will be placed around tree protection zones. The contractor shall not excavate within tree protection zones, unless otherwise indicated. The contractor shall repair or replace trees and vegetation indicated to remain that are damaged by construction operations in a manner approved by the Architect.

### **Tree Removals**

Live trees are removed only when necessary.

## **Protection and Preservation Policies**

Before construction or renovation takes place on NU property, Facilities Management assesses trees and their root systems to determine if they will obstructed or be impacted by the project.

### **Trenching**

Following any trenching procedures, exposed root zones must be assessed for any required root pruning prior to back filling.

### **Tree Protection Steps:**

- Locate and identify trees and vegetation to remain or to be relocated.
- Identify temporary fencing around tree protection zones.
  - Leave space for drip lines when possible.
  - Fences are set 1.25 feet per inch of trunk or 6 feet-wide, whichever is greater.
  - Preferred fencing is chain link. Plastic fencing is used if necessary because of space restrictions. This fencing must be maintained and in

good condition at all times during construction. A minimum height of 4 feet is required. Barbed wire is not permitted on campus.

- Fenced-in protection zones should be mulched with common wood chips or shredded bark to a depth of 4 inches.
- Contractor shall not excavate within tree protection zones, unless otherwise indicated.
- Contractor shall repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by the Facilities Management Project Manager or Architect.

## Goals and Targets

Northwestern University would like to have a firmer grasp on our tree canopy percentage by conducting a canopy assessment within two years. Recent major construction has altered canopy percentages and an assessment plan must be undertaken. A new tree inventory, appraisal, and soil resource inventory will be completed within five years.

## Tree Damage Assessment, Enforcement, and Penalties

Tim Spahn and Steve Camburn of the Tree Campus Advisory Committee perform tree assessments. Facilities Management Project Managers and on-site Engineers are responsible for enforcement of protection measures.

## Prohibited Practices

It is prohibited to put string, nails, paint, or any other harmful materials on trees on Northwestern University's property. It is prohibited to lock bikes on trees on Northwestern University's property. Donation trees and plaques are not permitted on campus as of early 2000.

## Definitions and Terminology

Adaptive: non-native plants that perform well in local climate.

Crown: the foliage bearing section of the tree formed by its branches and not including any clear stem/trunk.

Caliper: the diameter or thickness of the main stem of a young tree or sapling as measured at six inches above ground level. This measurement is used for nursery-grown trees having a diameter of four inches or less.

Canopy trees: a tree that will grow to a mature height of at least 40 feet with a spread of at least 30 feet.

Critical Root Zone: the minimum area surrounding a tree is considered essential to support the viability of the tree and is equal to a radius of one foot per inch of trunk diameter (DBH).

Drip Lines: the area defined by the outermost circumference of a tree canopy where water drips from and onto the ground.

Drip Irrigation Line: where the tubes and hoses are laid.

Drought-tolerant: plants that can live in dry climates and withstand not being watered often.

Dutch Elm Disease: a fungal disease of elm trees that is spread by elm bark beetles. A virulent strain of the fungus that arose in North America in the early 20th century has destroyed the majority of American elms in many areas.

Green Space: any area retained as permeable unpaved ground and dedicated on the site plan to supporting vegetation.

Root pruning: the pruning back of root (similar to the pruning back of branches). This has the ability to affect tree stability so it is advisable to seek professional advice prior to attempting root pruning.

Root Zones: is based on trunk diameter size.

Perennial: lasting or existing for a long or apparently infinite time; enduring or continually recurring.

Mature trees: trees that have reached at least 75 percent of their final height and spread.

Pruning: to remove (dead or superfluous twigs, branches, etc.) from a tree, shrub, etc., by cutting them off.

Slow-Release Granular Fertilizer: low-release fertilizers come in granules that look like beads and they are not water-soluble the way liquid fertilizers are. They release gradual doses of nutrients into the soil, rather than flooding the soil with food all at once. Compared to liquid fertilizers, this makes them less likely to burn roots and foliage and gives them a longer duration. Depending on the formula, they can release nutrients for a few weeks or 8 to 9 months.

Sucker growth: a shoot growing from the base or root of a tree or shrub and giving rise to a new plant, a clone of the plant from which it comes. The growth of suckers is a form of asexual reproduction.

Tree Protection Zone: the area surrounding a preserved or planted tree that is essential to the tree's health and survival, and is protected within the guidelines of these regulations.

Trenching: any excavation to provide irrigation, install foundations, utility lines, services, pipe, drainage, or other property improvements below grade (underground).

Water Sprouts: a vigorous upright shoot from an adventitious or latent bud on the trunk or main branch of a tree.

## Communications Strategy

These standards are laid out in the Facilities Management Design and Construction Standards that are offered internally to all Facilities Management staff and sent to all contractors. Several initiatives laid out in this plan are featured on the Office of Sustainability website. Northwestern News, SustainNU monthly newsletter, Institute for Sustainability and Energy at Northwestern newsletters, the Daily Northwestern, and news releases sent out through Citizens for a Greener Evanston, Evanston Environmental Association, and City of Evanston will likely run a story if Northwestern University is recognized by Tree Campus USA. Evanston TreeKeepers will continue to collaborate with NU (the Office of Sustainability, Landscape Architect, student groups) to organize campus tree walks for Evanston and NU community members.

Date Campus Tree Care Plan Established: 12/20/14