

CAMPUS TREE CARE PLAN

Northeastern Illinois University

Adopted December 8, 2015

(updated December 8, 2015)

Introduction

Northeastern Illinois University (NEIU) is a 67-acre campus located in a very diverse neighborhood on the north side of Chicago. It is positioned adjacent to a natural corridor following the meandering Chicago River and connected by a string of forested and savanna/prairie parks. The campus of NEIU strives to reflect the natural beauty of this area by sustaining remnant swamp white oak savanna vegetation, as well as a high level of overall tree species diversity (over 1,100 trees of 125 unique species, with no genus exceeding 15% of the total). A tree inventory has been compiled, but since its most recent update, a number of trees have been removed and new trees have been planted. Good communication between the Facilities Management department and a Tree Advisory Committee will support timely inventory updates and improved species diversity.

Benefits of Trees

Beyond their obvious aesthetic value, trees contribute to their surroundings in a variety of ways. They sequester carbon dioxide and improve both air and water quality. Shade provided by their foliage helps reduce energy costs and can serve as natural sound barriers. Tree roots absorb storm water and deter soil erosion. In addition, trees provide habitat for a variety of species, leading to benefits for local biological diversity and educational opportunities.

Purpose

The purpose of the NEIU campus plan is to establish clear goals, policies, and practices to create an urban campus environment that promotes a safe, healthy, and sustainable sense of place. By following careful practices of planting, protecting, and maintaining trees, a healthy canopy display will contribute beauty, aesthetic value, and campus identity.

Specific objectives:

1. Describe policies for tree planting and maintenance including pruning and preservation.
2. Display healthy trees, accurately inventoried and properly cared for.
3. Promote the growth of a wide range of tree species, including natives, with proper age structure.
4. Provide various habitats for enjoyment and study on campus.
5. Encourage the campus community to respect and value the urban forest on campus.
6. Begin building a case for certification of campus grounds as an arboretum.

Responsible Authority

The NEIU Department of Facilities Management is responsible for maintaining the campus trees, in cooperation with the newly established Campus Tree Advisory

Committee. Facilities Management staff provide general pruning, mulching, watering, and pest control. Depending on circumstances, removals and other maintenance practices may be conducted by outside contractors.

Campus Tree Advisory Committee

The campus tree advisory committee members shall serve renewable 1-year terms. Present committee members (established 2015) include:

Students

Joel Flax-Hatch, David Murray, Michael Parzygnat

Faculty

Robyn Flakne (Geography and Environmental Studies)
 Pamela Geddes (Biology; Environmental Sciences)
 Caleb Gallemore (Geography and Environmental Studies)
 Erick Howenstine (Geography and Environmental Studies)
 Joel Olfelt (Biology)
 Mark Johnston (Geography and Environmental Studies)
 Steve Frankel (Biology)
 Melinda Storie (Geography and Environmental Studies)

Department of Facilities Management

David Rubin

Campus partners

Kris Pierre, Senior Director Academic and Community Partnerships, Division of Student Affairs
 Sylvia Atsalis, Coordinator; Student Center for Science Engagement

Community partners

John Friedmann, VP for Environment Committee, North River Commission
 Robyn Flakne, Natural Resources Manager, Village of Glenview

The Tree Advisory Committee will meet at minimum once per semester. Responsibilities of the Tree Advisory Committee include approval and annual update (as necessary) of the Campus Tree Care Plan, annual update of the tree inventory, documentation of activities contributing to achieving Tree Campus USA standards, and all additional efforts related to campus tree and natural area planting and maintenance, providing guidance regarding tree maintenance, protection, and planning, coordinating and forming liaisons with the Green Fee Committee and Green Conservation Group, and planning educational materials or events regarding tree care and benefits in cooperation with appropriate departments and student groups. Each year, the committee will recruit one or more student interns to assist in data gathering and management tasks, as determined by the

committee. The committee shall designate one of its faculty membership to oversee each intern's work.

Goals and Targets

The primary goal of this plan is to improve NEIU's existing strong tree program. Specific targets include:

- 1) The existing inventory is tied to a GIS survey and tree locations have been recently (2013) updated and mapped. The inventory should be maintained by academic departments that are part of the Tree Advisory Committee through annual updates reflecting tree additions and removals. Diameter at breast height (DBH) measurements should be added to the inventory and updated at minimum every five years. The inventory database can be enhanced with photographs and detailed condition notes on each tree.
- 2) A large open-grown swamp white oak, along with a grove of remnant swamp white oaks and savanna vegetation, have been fenced off on campus and identified with interpretive signs. Expanding on this educational effort, placards identifying tree species can be strategically placed at the base of selected trees. The Campus Tree Advisory Committee will convene a sub-committee to work on improved restoration of this area to pre-urbanized conditions in collaboration with community partners and local restoration experts.
- 3) With the collected baseline inventory data, we will use i-Tree software to analyze the cost and benefits afforded by the campus urban forest. By applying the analysis at NEIU, our target is to maintain a diverse species composition (with a long-term goal of no more than 20% of any one plant family, 10% of any one genus, and 5% of any one species) and increase the emphasis on the historic native vegetation (tree, savanna, and prairie) of the campus area.

Campus Tree Care Policies

All parties involved in campus tree care will follow the American National Standards Institute's (ANSI) and the International Society of Arboriculture (ISA) safety standards.

1) **Planting** -The American National Standards Institute A300 (part 6) will be followed for planting and transplanting trees on campus. Additionally, we will take the following into consideration:

Site preparation - Site conditions will be taken into consideration when choosing a specific site for each tree to be planted. Relevant factors include: adjacent buildings and planting areas, intended function of plant, intended use of site, irrigation, growth rate, plans for future development, and maintenance.

Species Selection - Trees will be chosen based on current diversity and desirable species

that will be suggested by the Facilities Management department and/or the Tree Advisory committee. Trees may be selected based on a range of attributes, including flowers, seasonal color, interesting foliage, or attractive bark or fruit, all with the main interest of adding diversity throughout the campus and thereby increasing resiliency to disease, climate change, and other disturbances. Plants will be inspected for pest issues and general health before purchase and again prior to planting. The consideration of a tree's specific light, water, growing space, and soil conditions will be taken into account when choosing each tree for a specific site. Lists of species recommended for northern Illinois, such as those compiled by the Morton Arboretum, the City of Chicago, and the Chicago Botanic Garden, will be consulted as authoritative resources.

Tree Planting - To ensure correct planting of the trees the planting hole should be twice the width of the root ball at the surface. The hole should not be deeper than the root ball. Upon installation the top of the root ball should be even with or even slightly higher than the soil surface. Soft fill will not be used at the bottom of the hole due to chance of root ball settling and becoming planted too deep. If tree has upright growth form it will be placed with main leader as close to a 90 degree angle as possible from the horizon. Mushroom compost or other soil amendments may be added if necessary. The trunk flare must be 1-2" above grade and can be adjusted by pushing soil below root ball. The exposed part of root ball must be covered with 2-4 inches of mulch remaining at least 2 inches from the trunk. This is to prevent fungi and bacteria from attacking the trunk of the tree.

Transplanting - During construction projects or in the event of unforeseen circumstances, all measures will be taken to successfully move a tree to a new location, especially for trees of 4 inches diameter or less, or highly valued trees of any size. Otherwise, the tree will be removed and donated to a local sawmill or lumber yard when possible, or chipped for mulch onsite.

2) **Watering** - All newly planted trees on campus will be watered regularly in the absence of precipitation, providing, at a minimum, the equivalent of one inch of rain per week. This will continue through the first growing season until dormancy. Supplemental watering will be provided if the following year is dry. This watering regime will provide enough time for the establishment of a deep root system that will be capable of supporting a young tree. Trees on campus will be mulched to reduce water evaporation in the root zone.

3) **Mulching** - All tree beds will be edged and mulched. All newly planted trees on campus will have a ring of mulch that is 2 to 4 inches deep and at least 2 inches from the tree flare. Additional mulch will be added as needed to ensure a weed-free zone and aid in moisture retention under the tree crown.

4) **Pest Management** - Any pest problem will be treated if the Facilities Management department and/or the Tree Advisory Committee deems treatment necessary. Integrated Pest Management practices will be used to treat and/or prevent infestations of fungi,

insects, and bacteria. In the event of pest issues, a certified arborist will diagnose the disorder and recommend appropriate treatment. Current and future issues like the Emerald Ash Borer (EAB) epidemic will be evaluated in light of available information. In the case of EAB, removal and replacement of infested ash trees is the chosen approach.

5) **Pruning** - For all tree pruning on campus, the International Society of Arboriculture (ISA) standards will be followed. These practices are described best in “Best Management Practices: Tree Pruning” ISA publication (Gilman & Lilly 2008). All pruning will have a planned outcome, which may include structural improvement, aesthetic improvement, removal of damaged tissue, etc.

- a. Young Trees - Young trees on campus will be pruned at least once a year to ensure proper structure. Defects will be removed so single dominant leaders can be established. This gives the branches a chance to be well spaced along the tree trunk. A five-step process will be implemented and followed to train a young tree:
 1. Establishing a dominant leader where appropriate.
 2. Selecting and maintaining the lowest permanent branch.
 3. Selecting and establishing scaffold branches.
 4. Removing dead, broken, damaged, and dying branches.
 5. Subordinating temporary branches.

This training process will be spread out over the years until tree maturity is reached. If death or major damage occurs to the tree within the 1st year, the tree is to be replaced by nursery or landscaping contractor.

- b. Mature Trees - Mature trees will be maintained for aesthetics and safety. Factors including location, species, time of year, growth habit, vitality, and maturity will all be taken into consideration during pruning. Pruning needs should be evaluated at least once every two years.
 1. Crown cleaning - Branches that are faulty, diseased, dead, or dying will be removed. This also includes large branches that may have split.
 2. Crown thinning - This method will be rarely used; however, if a new species requires high light levels, then an adjacent tree may be thinned for the benefit of both trees.
 3. Topping and heading back - These methods are prohibited pruning practices because they may result in shock, tree starvation, weak limbs, rapid undesirable growth, insect and disease infestation, and even the death of the tree.

6) **Removal** - Any tree that is considered for removal must be inspected by a certified arborist. If the tree has historic significance, preservation measures will be taken in consultation with the Tree Advisory Committee. For the most part, trees will only be removed if and when they are significantly damaged or diseased, or if they pose a public safety risk on campus.

7) **Catastrophic events** - In emergency events such as (but not limited to) tornados, fire, ice/snow storms, and floods, necessary procedures will be used to ensure safety, including tree removal (if trees are badly damaged, uprooted, or otherwise disturbed). Priority will be placed on removing debris from campus and nearby sidewalks, streets, and other pathways used by students and the public, and then on the recovery of salvageable trees by maintenance pruning.

Protection and Preservation Policies

The following standards are to be established and adhered to in order to ensure the protection and longevity of the trees on the NEIU campus, as well as to address public safety issues that may arise from trees that are damaged.

1) Identification and Data – Consult the regularly updated campus tree inventory to confirm species and size. During annual or 5-year survey of campus trees, identify those that are damaged and/or diseased; immediately address any potentially dangerous situations.

2) Construction – Clearly identify trees to be protected during construction projects and provide contractors with instructions to build protective fencing as described in the tree damage assessment/enforcement section below. Inform contractors of the fines for damaging protected trees.

Preservation

Identify trees that are growing in an undesirable or potentially dangerous manner.

- a) Conduct pruning as necessary to avoid any potentially dangerous situations caused by limb contact with built infrastructure.
- b) Implement anchoring system to trees as deemed necessary.
- c) Regularly conduct walk-throughs of campus for signs of disease and/or damage to trees; conduct walk-throughs after all major storm events.

Tree Damage Assessment/Enforcement

Enforcement and penalties will be the responsibility of the Facilities Management department, with input from the Tree Advisory Committee upon request. Project managers of construction projects will be responsible for ensuring that tree protection systems are in place throughout the project and trees are regularly inspected for signs of damage.

Protection of the trees while construction is in progress is the responsibility of the contractor. Existing trees and shrubs in any construction zone shall be protected by installing a minimum 4' temporary fence of a radius equal at minimum to the drip line of the canopy. If there is any damage done to the trees or shrubs, it is the contractor's responsibility to bring it to the Facilities Management department's attention immediately. The damage will then be assessed. If the damage can be repaired, it is up to

the contractor to pay in full for the repair. If the tree or shrub cannot be repaired, it shall be removed and replaced with a species of the Facilities Management department's choosing. The contractor shall reimburse Facilities Management the full cost of replacement plus additional fines as described below.

Appeals - Any individual or entity wishing to appeal a tree damage penalty may request a meeting with Facilities Management in consultation with the Tree Advisory Committee, where they can explain why they should not be liable. Decisions of Facilities Management are final.

Tree Damage Assessment - All trees will be given a rating system from 1-5 to assess the damage and possibility of removal and replacement of the tree.

1 = Dead or nearly dead; liability to people or structures - remove immediately.

2 = Partially dead or dying, has a fatal disease, or damage cannot be corrected - must be removed at the earliest convenience.

3 = Tree is acceptable and does not need any corrective action, but will be reevaluated every six months.

4 = Tree is in good condition. No further action needed.

5 = Tree is in excellent condition and no further action is needed.

Prohibited Practices

Certain practices are known to be detrimental to individual trees and may be harmful to proper tree management. The following are a list of prohibited practices.

1. No tree shall be planted without the approval of Facilities Management.
2. No tree maintenance, such as pruning or removal, shall be conducted without the approval of Facilities Management.
3. Vandalism of trees is prohibited. This includes the harming of the tree in any way.
4. Tree topping is prohibited. This involves the improper pruning or removal of limbs without regard for the structure or growth pattern of the tree. This could severely affect the health of the tree.
5. No known invasive exotic species will be planted. This includes, but is not limited to, Buckthorn, Tree of Heaven, and Russian Olive. Any invasive trees found on campus will be removed to the extent that this is possible/feasible.
6. No objects shall be attached or affixed to the trees in any manner without prior approval from Facilities Management. This includes, but is not limited to, posters, fliers, chains, bicycles, etc.

Communication Strategy

The Campus Tree Care Plan shall be accessible to all members of the NEIU community. Students, faculty, the Facilities Management department, visitors, and the surrounding community are the key groups that must be informed and able to access information regarding the plan. Upon adoption, and following major updates or amendments, the Campus Tree Care Plan shall be posted on the NEIU homepage with mention in the

news/announcements section and social media outlets. Specific communication efforts for the identified groups follow:

1. Students and Faculty - The departments of Biology, Geography and Environmental Studies, Environmental Sciences, the Student Center for Science Engagement, and any other interested departments shall have links to the plan on their homepage and keep a hard copy in their offices for reference. Information regarding the adoption of the plan and subsequent major updates or amendments should be printed in the NEIU newspaper, and a university wide email should be sent with a link to the plan.
2. Facilities Management - Hard copies of the plan shall be kept in the Facilities Management office for easy access by students, visitors, and contractors.
3. Contractors - Any company performing work at NEIU that might directly or indirectly affect trees on campus shall be given a copy of the Campus Tree Care Plan. Contractors shall be made aware of protection and preservation policies as well as tree damage assessment/enforcement policies in the event that any tree damage is sustained during contracted work.
4. Visitors and Community - Information regarding events and adoption of the Tree Care Plan shall be posted on the NEIU website as well as submitted to North Park Village to inform the local community. Local community groups such as the North River Commission or neighborhood associations shall also receive this information via email or social media.

Activities and events concerning campus trees, including Arbor Day events, shall be communicated via email and social media to students and faculty as well as posted on the NEIU website.

Definitions

Apical dominance - the tendency of the terminal bud to inhibit the growth of lateral buds on the same stem.

DBH - diameter at breast height, measured at 4.5 feet from the forest floor.

Exotic species - an introduced, non-native, or alien species that would not naturally be found in a given range but arrived through deliberate or accidental human activity.

Green Fee Committee – organization at Northeastern Illinois University consisting of student, faculty, and staff members who decide how the green fee from student tuition is utilized.

Green Conservation Group – student and faculty organization that promotes environmentally sustainable practices on and off Northeastern Illinois University .

Habitat – an environment suitable for sustaining a population of a given organism.

Heading back - cutting a branch back to a bud, stub, or lateral branch that is not strong enough to assume apical dominance.

Internode - region of the stem between two nodes.

Invasive - a non-native species that is likely to cause economic, health, or environmental damage due to the difficulty in controlling it from spreading.

Native species - indigenous to a region, naturally occurring, and not introduced by man.

Node - slightly enlarged portion of stem where leaves and buds arise.

Urban forest – naturally occurring or planted trees, shrubs, or herbaceous plants in urban areas.

Shall – mandatory.

Should – strongly recommended.

Topping - pruning technique no longer used, intended to decrease tree size to a predetermined crown limit, often at internodes, causing branch dieback, decay, and unstable sprouting.

References

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