

Chicago State University Tree Care Plan

(Revised from original plan developed by Tree Advisory Committee in December, 2009)

Introduction

The 161 acre campus of Chicago State University (CSU) is a welcome oasis of greenspace in a densely populated, inner city area on the south side of Chicago. CSU is a state university, and a majority of its students come from the south side of Chicago and the nearby south suburbs. Most of the students (>80%) are African American and many (> 70%) require financial aid to attend college. Frances Kuo and others at University Illinois, U-C found that inner city Chicagoans who live around managed natural areas with trees, and allocate time toward outdoor experiences in nature, attain notable social and emotional benefits. The CSU campus and especially its trees provides an opportunity for students, staff, faculty and surrounding neighbors from the inner city to interact with the outdoors in a safe and positive way.

CSU faces many challenges including its budget being under-funded for several years resulting in deferred building maintenance, lack of funding to support improvements of the outdoor campus, low retention and graduation rates. Still, the importance of the outdoor campus cannot be overlooked. A Carnegie Foundation study in 1990s found the outdoor campus appearance as the major factor in 62% of student's decisions on which college to attend. Indeed, we have found that the CSU campus landscape is "very important" to half of the students surveyed this past year. However, 43% of students thought the campus landscape needed more care (Jacobs, unpublished)

Faculty, students, community partners and Facilities staff join forces each year (since 2006) to emphasize the importance of trees and urban forests by conducting annual Arbor Day tree plantings. The creation of the Tree Advisory Committee and adoption of the Tree Care Plan in 2009 by the Physical Facilities Department helped us to achieve recognition as a Tree Campus, and were vital steps toward gaining institutional support for long-term, sustainable management of our campus landscape. We are reapplying for certification as a Tree Campus in 2014 to again recognize our commitment to sustainable management of our trees, and further to foster support and awareness of the educational, ecological and sociological benefits that come with sustainable management of the trees and campus.

Over the past year the Tree Advisory Committee has met 4 times as part of the Buildings and Grounds Committee. The University also held Arbor Day activities in conjunction with Earth Week activities. Arbor Day activities included student and faculty help in planting approximately 80 trees and shrubs as part of a new Audubon Society Migratory Bird Habitat on campus. Students led additional environmental stewardship outreach activities including invasive species removal in the campus prairie in spring and fall and at Wolf Lake during spring semester. A beach clean-up at nearby Calumet Park was led by two CSU students who are supported as part of a Great Lakes Environmental Stewardship grant.

CSU spent over \$ 14,000 for tree care, removals, plantings and associated activities in 2014. The amount includes expenditures by the Physical Facilities Department as well as contribution from faculty grants and in-kind donation of trees and volunteer time came from faculty. For example, the trees that were planted in the Migratory Bird Habitat were donated by Chicago Audubon Society as part of a grant obtained by K. Jacobs.

During October, 2013, Emerald Ash Borer infested trees were confirmed on campus, and a student working on an independent study project quantified the number and location of infested

¹Kuo, F. E. 2003. The Role of Arboriculture in a healthy social ecology. *J. Arboriculture* 29(3): 148-155.

² Carnegie Foundation. 1986. How Do Students Choose a College? *Change: Trendlines*:18(1): 29-32.

³Results of 2009 survey given to ~ 300 students on their perceptions toward the outdoor campus. K.A. Jacobs (unpublished).

trees. There are approximately 60 ash trees mapped in the tree inventory, and of those, at least 25 were found to be infested. The Physical Facilities Department and Tree Advisory Committee are working to plan removals and re-plantings in the coming year. Each tree will be monitored for spring foliage to determine whether some trees can be kept alive through systemic insecticide treatment, although we are planning on gradually replacing all ash trees.

The Tree Advisory Committee and the Tree Care Plan will be used by the Physical Facilities Department to guide planting and removals.

Purpose of the Tree Care Plan

The Purpose of the Tree Care Plan is divided into three areas: 1) to provide guidelines and advice to the Department of Physical Facilities and Long Range Planning Task Forces on how to manage sustainably the campus landscape with respect to tree selection and planting, tree care and removal; 2) to broaden awareness and appreciation of trees and their value to multiple audiences, and create regular environmental stewardship experiences for students, staff, faculty, and surrounding communities; and 3) position the CSU campus as a recognized urban forest resource within the collective urban forests of the Chicago Metropolitan region.

The university recognizes the importance of planning and maintenance of the grounds and other facilities as contributing to the overall mission of CSU. A Facilities Task Force was created during a recent strategic planning effort and contributed to a report entitled “New Millennium Strategic Plan: Repositioning the University for Excellence in the New Century”. The report recognizes “the maintenance and overall appearance of the grounds must reflect thoughtful planning and a desire to please the eye, ear and spirit.” The CSU tree care helps meet this objective.

Who would be in charge of implementing the Tree Care Plan?

The Physical Facilities Department continues to have the primary role in adopting and implementing suggested practices from the Tree Care Plan, and allocating funds from their budget to support the Tree Care Plan. We note that certain departments, including Biological Sciences and Geography, regularly donate staff time and in some cases, to maintaining Tree Campus (usually associated with Arbor Day activities). Also, with any new building construction, the Architect of Record for the university has input on the landscaping around those buildings, and this may include trees.

Tree Advisory Committee

The CSU Tree Advisory Committee is a sub-committee of the Faculty Senate Facilities and Grounds Committee. The latter committee meets twice a semester, and as Tree Advisory members serve on both committees, we hold an additional Tree Advisory consultation following regular business. The role of the Tree Advisory Committee is to provide specific guidance to the Physical Facilities Staff and Strategic Planning Task Force on how to care for, select, preserve and protect the campus trees. The Committee presents an annual assessment and status report to the Faculty Senate Facilities and Grounds Committee, Director of Physical Facilities and other interested parties. The Report is made available to the University President and Dean’s Council.

Who is on the Tree Advisory Committee?

The Tree Advisory Committee consists of 2 or more faculty, 1-2 Physical Facilities staff, 1-2 students, 1-2 community members or tree care professionals. The faculty and students will include at least one member from the Department of Biological Sciences and one member from Department of Geography because of overlap in environmental science and urban ecology expertise within these departments. Members will be asked to serve for a minimum of 3 years, except students who will serve for 2 years. The Committee will meet twice each semester, and

may coincide with the meeting of the Faculty Senate Facilities and Grounds committee.

Current Committee Members (2013-14) are listed in the table below.

Karel Jacobs	Faculty	Dept. Biological Sciences, Advisor Ecology Club	kjacobs@csu.edu	773.995-2338
Mike Siola	Faculty	Department Geography, Advisor Geography Society	msiola@csu.edu	773.995-2964
Jeff Melton	Environmental Health and Safety Officer	Dept. Physical Facilities	jmelson@csu.edu	773.995-2523
Erik LeVere	Assistant Grounds Supervisor	Dept. Physical Facilities	eriklevere@yahoo.com	773.995.3862
Open		Community Representative		
Cindy Terrell	Christy Webber Landscaping	Community & Tree care professional		
Soraida Garcia	Undergraduate Student	Department Biological Sciences	sorgarc147@yahoo.com	773.995-2183
Muriel Marseille	Graduate Student	Department Geography	muriel.marseille@gmail.com	773.995-2186

Tree Plan Guidelines (minimal changes since 2009)

Guidelines given below for tree selection, planting, care and removal follow recommendations put forth by the International Society of Arboriculture, and in some cases, such as for species diversity, mirror recommendations adopted by the City of Chicago and Lake Calumet region of Chicago.

Organization of campus for Routine Tree Maintenance. The campus is divided into four sectors (NW= 1, ME= 2, SE= 3, SW = 4) for the purpose of routine tree maintenance. One sector is focused on at a time with a goal of visiting each tree in each sector once a year.

Tree Planting

The Illinois Arborist Association guidelines are followed for all in-house tree plantings in which the hole that is dug will not be deeper than the root ball, and will be three times wider than the root ball. Whenever possible, mixing or amendment of the poor quality, Chicago fill clay soil will be done at the time of planting using high quality compost.

Pruning Cycle

Pruning will be carried out by grounds crew following the cycle below in order to help develop strong and healthy trees. It is anticipated that certain trees, owing to their location, species, age,

or condition may require additional or different pruning than is outlined. The Physical Facilities Department purchased a vehicle (JCP high lift truck) to assist in pruning larger trees. However, due to safety reasons it will be used sparingly and only on hazard trees posing risk to people or buildings, or trees that are broken or downed due to storms and other environmental conditions. As staff become certified in arboriculture practices, we anticipate improvement in the pruning practices on campus.

All trees, especially those in actively managed areas of campus in each of the 4 sectors, will be pruned according to the schedule below as a guideline.

- Trees less than 7 years old should receive structural pruning on a biennial basis;
- Trees 7-20 years old should receive structural pruning every three to five years;
- Mature trees, 20 years old and older should receive maintenance pruning every five to seven years
- All trees should be pruned as needed to remove dead, diseased defective branches from the crown.

Trees adjacent to roadways, walkways, signs, and street lights are annually inspected for safety and clearance issues and maintenance pruned as necessary.

General Pruning Practices

Pruning trees must follow published guidelines by the ISA or Morton Arboretum. Pruning is done for safety, health of the tree, and finally for aesthetics. Proper pruning to remove dead, dying, and defective branches of trees of any age and size, will help reduce hazards while promoting healthy trees.

General Tips:

1. When removing branches, use the three cut method and make sure to leave no damage to the branch collar.
2. Remove branches that rub or cross another branch.
3. Favor branches with strong, U-shaped angles less than 90 degrees from the trunk.
4. Do not remove more than 1/3 of the tree's canopy at one time.
5. Do not prune healthy trees following pruning of diseased trees, unless the tools have been disinfected. Lysol disinfectant works well and is recommended.

Mulching and Prevention of Mower Damage

Tree mulching with wood chips and other materials should be done each spring, aiming for a thickness of 4-6". Avoid "volcano mulching" and pull mulch back from the trunk a few inches to prevent excess moisture around the trunk. Aim for mulching to the drip line of each tree.

The 2006-07 Tree inventory indicated approximately 30% of the trees on campus had mower damage. Regular mulching is likely to reduce this problem in the future, but regular vigilance by grounds crew is needed. Mowing around trees that are not mulched will not be done within 12 inches of the trunk.

Irrigation

Water bags are currently used for new tree plantings for 2-3 years. Thereafter, no irrigation is used aside from indirect watering received during in-ground or sprinkler irrigation of lawns. Trees in elevated boxes or other confined spaces on campus should be included in weekly irrigation with a water truck or hose during summer or otherwise when local drought conditions exist.

Fertilization

There is no regular tree fertilization. However, the history of the site as a former railroad yard, and the Chicago Fill soil that underlies much of the campus, leads us to suggest that soil testing be done as the budget permits, in targeted areas of the campus each year. Soils tests are already done when new construction is being done. Additional soils data would lead to improved matching of trees to different sites on campus, and provide clues concerning how to improve tree growth and health with, for example, soil amendment and fertilization. Scattered soil testing was done previously by faculty in the Department of Biological Sciences and results indicated low levels of heavy metals and petro-chemical residues are present in some areas of the campus.

Herbicide

Although lawn care does not specifically fall under the Tree Plan, it affects the trees because regular herbicide applications are made on nearly all campus grassy areas once a year. We aim to assist in developing a green lawn care plan beginning in 2011 to improve soil health and reduce runoff and groundwater contamination.

Pests and Diseases (updated 2013)

The initial tree inventory indicated minor disease and insect pests problems although Zimmerman Pine Moth on Scots Pine, apple scab on crabapple and elm leafminer were noted. There currently is not an active pest management program, although regular horticultural care is provided. We follow Chicago Trees Initiative (CTI) recommendations to impose a moratorium on planting any ash tree due to the threat of Emerald Ash Borer, and likewise seek to minimize planting of any species to 15% or less in any area to avoid undue damage from an unforeseen outbreak. New in 2013 was the discovery of EAB infestation. We will be working in 2014 to fully quantify and safe or remove ash trees. A replacement plan is one of the 2014 goals.

Tree Removals

Healthy trees are removed only if found to be hazard trees that threaten public safety or property, or if malformed/deformed. The overall goal of increasing tree number and canopy cover as noted below in 'Goals', and improving species diversity on campus will be considered prior to removing the trees.

Trees that are scheduled to be removed will be reviewed in consultation with the Tree Advisory Committee. Emergency tree removals are exempt from this guideline. The Advisory committee offers its guidance, but the Physical Facilities Director makes the final decision on removals.

Tree Selection

A tree selection list (Appendix 1) is provided as a guide for developing a healthy and diverse campus landscape. The list was created after reviewing selection lists for the City of Chicago, Illinois Arborists Association, and Lake Calumet Region. CSU tree selections should be made from the list, and should also consider four things:

1. Tree selection must be site-specific. That is, an assessment of the site conditions is needed and tree selection must be matched to the site following "right tree for the right spot" concept.
2. Trees must be selected based on their value in adding diversity to the campus, without adding a risk of invasiveness. The tree inventory in 2006-07 showed that Eastern cottonwood was over planted with 53% of that species comprising the urban forest. Additionally, three species that are not over planted on campus but are overplanted in the Chicago region are: Norway maple, ash and honey locust. These three species should be avoided for planting, and E. cottonwood should not be planted. Native trees should be favored, but exotic species are not excluded from selection unless they pose a threat of invading or overtaking an

area.

3. The CSU campus landscape should be considered part of the larger, regional urban forest in the Chicago area. As such, we advise that the campus be developed to align with broader goals of the region: increased tree canopy cover to 20% by 2040, and doubling of tree numbers by 2020.

4. The campus should be envisioned as an arboretum in which students, faculty and visitors can learn and study various aspects of trees including species comparisons, growth and development, classification, among other things. To this end we have recently planted unique specimen trees donated by The Morton Arboretum and Chicago Botanic Garden, and other specimen trees are encouraged if suited to the site.

The Tree Advisory Committee will review and update the selection list **every 5 years** and can suggest species, cultivars that may not be on the list at any time provided the majority of committee members agree.

Hazard Trees, Tree Damage and Storm Mitigation

Hazardous tree removal, removal of hazardous limbs, and responses to storm and wind damage are done in-house unless specialized equipment and assistance are deemed necessary. Grounds staff prioritize removal of any trees/limbs that are obvious hazards to the campus community or that block campus streets and sidewalks.

An annual inventory of the 4 sectors of campus will include a hazardous tree assessment based on the guidelines in the International Society of Arboriculture publication, "Identifying hazardous trees". Those trees that are deemed hazardous, are pruned or removed in an orderly fashion in the coming year, with emphasis on saving the tree when possible.

Trees are replaced as the tree planting budget permits, preferably in the same year, and using a selection from the Tree Selection List that follows.

Protection, Preservation before and during Construction.

Guidelines listed in the CSU Architect of Record Construction Plan are to be followed for all new building landscapes. The steps outlined below clarify the Construction Plan and should also be followed for all construction activities on campus. The following NRSC resources can be referred to for more detailed guidelines and pictures:

<http://www.il.nrcs.usda.gov/technical/engineer/urban/standards/urbst990.html>;

<http://www.il.nrcs.usda.gov/technical/engineer/urban/standards/urbst984.html>;

<http://www.il.nrcs.usda.gov/technical/engineer/urban/standards/urbst991.html>

1. Construction/development plat and surveys plans will must the location and condition of existing trees three inches caliper or greater. Trees species identified in the CSU Tree Care Plan as undesirable for planting need not be considered for preservation. If there several trees growing within five feet (1.5 m) of one another, they may be shown as a group, listing the number and average size of trees.

2. Trees are considered desirable for salvage according to the 4 categories that follow. Prioritize the salvage of the trees giving highest priority to the larger specimens (category D) and those ranked highest in the other categories A, B and C.:

A). Health. Is the tree of good health or is it affected by poor form, disease, or insect pests?

B). Species. Is the tree representative of an underplanted species or is it a species that is

over the 15% diversity standard?

C). Other Value. Does the tree have special landscape or educational value, for example, because it is a lone specimen tree, or unique species, or because it provides desirable aesthetic qualities such as spring flowering, fall color, winter interest?

D). Is the tree small (less than 10 inches DBH) medium (> 10 inches DBH) or large (> 24 inches DBH) ?

3. Trees of desirable species in good condition shall be saved whenever possible, using the methods below:

- a. New buildings shall be placed so as to maximize survival of desirable trees. Sidewalks and bicycle paths shall likewise be varied, if necessary, to protect desirable trees.
- b. When not possible to change the site, construction can continue but should occur so that there is a **minimum clearance of 15 feet** from the base of trees, and not within the edge of the canopy drip line.
- c. Trees to be saved shall be prominently marked to be visible at normal eye level and at the working level of equipment operators.
- d. Temporary barriers/fences shall be erected prior to construction to prevent damage to the trunk, canopy, or root zone (RZ) of trees to be saved. Barriers can be made using stakes and rope, snow fences, wooden frame, cinder block, planking over roots, and the like. Barriers extending to the drip line of a tree may be required in case of high value trees or those species particularly susceptible to root zone damage.
- e. Use, storage, or other deposition of equipment or material for example, paint, oil, solvents, fuel, gravel, fill, concrete, sand, mortar, rubbish, etc... shall be prohibited within the RZ of any tree to be saved.
- f. Grading, filling, excavating, or other disturbance within the RZ of any tree to be saved shall be avoided wherever possible. Where this cannot be avoided, a tree well, terrace, retaining wall, or other protective device shall be installed as the first step of construction. The device shall conform to standard horticultural practices, as illustrated in Carpenter, Walker, and Lanphear, "Plants in the Landscape," or equivalent authoritative references.
- g. If tree roots must be cut in the course of installing streets, utility lines, foundations, or other construction, this cutting shall be done with clean cuts made by trenchers, backhoes, or similar equipment.
- h. Movement of construction equipment and any other vehicles must be outside the RZ.
- i. Trees to be saved shall not be subjected to unfavorable changes in drainage, either during or after construction.
- j. Construction equipment routes shall be restricted to a limited number of pathways on campus to minimize the compaction of soil and damage to root zones.

4. Other Preservation Practices:

- a. The root zone (RZ) of a tree is up to or extending one foot (30 cm) outside the perimeter of the drip line of a tree. This area needs to be protected from damage.
- b. No construction activities, including the placement of topsoil, shall be permitted within the RZ. In addition, all roadways, parking areas, and storage areas shall be located outside any RZ. Construction fencing, wooden snow fence, or approved equivalent with a minimum height of 40 inches (102 cm) shall be installed around the RZ of all trees to be protected.
- c. Installation of protective fencing will be made before any work is started and will not be removed until the job is completed. If contractor cannot install or is not qualified to install protective measures, CSU Physical Facilities Department will do so.
- d. The fencing shall be secured to prevent clearing, grading and development activities from

encroaching within the RZ (see NRCS websites above).

5. Transplanting established trees or replacing them may be sought if construction cannot be done in a location without harming existing trees. Arrangements must be made in consult with the Department of Physical Facilities to transplant trees, or plant new trees in their place.

The developer/contractor shall use transplanting guidelines for established trees designated by the NRCS and International Society of Arboriculture.

6. Where damage is inflicted to a tree before, during or after, but due to construction, pruning or other compensatory treatment of the tree shall be done as soon as possible in consult with Dept. of Physical Facilities.

The Physical Facilities Department will work closely with contractors to make sure they abide by all preservation and transplanting specifications.

Prohibited Practices and Penalties (updated 2013)

Any person or company is prohibited from digging up, removing, destroying or damaging in any way a tree or shrub on the grounds of Chicago State University, that is public property owned by the State of Illinois. Persons or companies found to violate this will be fined a minimum of \$500.00 and in addition will be fined a penalty as described below.

PENALTY. Any person or firm who accidentally or on purpose causes damage to or destruction of any tree or shrub on CSU campus property shall pay the University a penalty that is equal to the value of the tree or shrub which was damaged, destroyed or removed as designated by the most recent version of A Guide to the Professional Evaluation of Landscape Trees, Specimen Shrubs and Evergreens published by the International Society Arboriculture. The penalty is in addition to the \$500 fine. The Physical Facilities Department will determine the value of the damaged or destroyed tree or shrub and if needed, will request assistance from the Tree Advisory Committee in determining value.

Terminology related to Campus Trees

Canopy: the above ground portion of a tree that includes leaf bearing branches.

Drip Line: as measured on the ground, the furthest distance away from a tree's trunk that the branches extend.

Sector 1: NW quadrant of the campus

Sector 2: NE quadrant of the campus

Sector 3: SE quadrant of the campus plus the inner campus crescent

Sector 4: SW quadrant of the campus

Mulch: chipped up wood chips or similar organic materials that are used to protect the ground underneath a tree and add nutrients to the soil as they degrade.

Compost: partially or fully decomposed organic materials that can be used to amend soil to improve its structure, organic matter content, fertility.

Cultivar or Selection: a commercially-released selection of a particular tree species.

Goals for Tree Care Plan (updated 2013)

1. Update Ash Tree Inventory and Diversify Species in Replacement Plantings.

The 2006 campus tree inventory was updated previously for additions to the campus. During fall, 2013, inventory of ash (*Fraxinus* spp.) was started to address concern for Emerald Ash Borer. Infestations were found, and additional monitoring and a treatment/removal plan will be

developed in 2014. The species selection list that is part of the Tree Care Plan (see appendix) will help guide replanting efforts. The list includes both natives as well as non-invasive exotics that are adapted to the harsh site and provide a range of aesthetic outcomes.

Aside from replanting the infested ash, we continue to seek more diversification of evergreen species as they are under planted on campus, but are the symbol of the University. Also targeted are native oak woodland species as cottonwood failures occur. Trees that are especially suitable for the clayey soils are considered for selection.

2. Guide Grounds Crew in using the tree inventory.

The inventory has been made into a database that can be useful as a long-term tree monitoring and management tool. However, there has not been a point person in the Physical Facilities Department identified to work with us and learn how to use the information. We intend to make this happen in 2014, and this overlaps with our third and final goal of helping to foster more professional development opportunities for groundscrew members.

3. Promote professional development opportunities related to arboriculture.

In the past we have had Tree Keepers training on campus, and made the Director of Physical Facilities aware of professional arboriculture opportunities that staff may be able to attend. Over the past year we have encouraged participation in webinars held by the US Forest Service, and Tree Professionals meeting at The Morton Arboretum. Although grounds crew staff did not participate in these events during 2013, the Director of Physical Facilities communicated the information to the grounds supervisor, and the University President attended the Arboretum workshop. We will continue to communicate with the Physical Facilities Director and Grounds supervisor of the opportunities available in 2014 including Illinois Arborist Association meeting and webinars offered by the Midwest Ecological Landscape Alliance (MELA). We recognize the urgent need for support of this nature to enhance expertise of the staff that tend to trees on campus. Further, in 2014, in-house expertise will be vital to successful identification, treatment and removal of EAB infested trees (although contractors will be used too).

Communication Strategy

The CSU Tree Care Plan is uploaded to the Faculty Senate Facilities and Ground Committee webpage, and has been given to used in discussions with the Department of Physical Facilities. Contractors who seek to participate in planting or removal of trees, or that are involved in construction projects will receive notice of the Tree Care Plan from Physical Facilities. The Faculty Senate and University administration is kept informed of about any issues regarding campus trees and especially issues that require full administrative participation (e.g., EAB management). The CSU web site has promoted our status as a Tree Campus to the general public and our student body and also encourages participation in Arbor Day activities and associated Environmental Stewardship activities. Likewise, the campus radio station promotes our annual Earthweek and Arbor Day activities. The Department of Biological Sciences has a webpage devoted to Tree Campus, USA recognition.

Lastly, each Arbor Day we use visuals with the Tree Campus logo including flags and flyers. As the first Tree Campus in the city of Chicago, we are a leader in tree care and sustainability and we hope to continue this effort in years to come.

Appendix 1. CSU Tree Species Selection List.

The list has been created after consulting the International Society of Arboriculture-Illinois Chapter, City of Chicago and Calumet Region Planting lists. Botanical names are provided. Note that selections and cultivars of the species are not always listed but are acceptable. The list is dynamic in that additions or deletions may be made as deemed necessary by the Tree Advisory Committee. Specific attention to replacements of ash

American Hornbeam *Carpinus caroliniana*

American Linden *Tilia americana*

Amur Corktree *Phellodendron amurense*

Amur Maple *Acer ginnala*

Austrian Pine *Pinus nigra* (avoid planting due to Zimmerman P. M.)

Baldcypress *Taxodium distichum*

Bitternut Hickory *Carya cordiformis*

Black Alder *Alnus glutinosa*

Black Locust *Robinia pseudoacacia*
Chicago Blues cultivar

Black Oak *Quercus velutina*

Black Walnut *Juglans nigra*

Black Willow *Salix nigra*

Boxelder Maple *Acer negundo*

Bur Oak *Quercus macrocarpa*

Butternut *Juglans cinerea*

Canadian Hemlock *Tsuga canadensis*

Chestnut Oak *Quercus prinus*

Chinese Juniper *Juniperus chinensis*

Chinquapin Oak *Quercus muehlenbergii*

Cockspur Hawthorn *Crataegus crusgalli*

Colorado Spruce *Picea pungens*

Common Horsechestnut *Aesculus hippocastanum*

Cucumbertree *Magnolia Magnolia acuminata*

Dawn Redwood *Metasequoia glyptostroboides*

Douglasfir *Pseudotsuga menziesii*

Downy Hawthorn *Crataegus mollis*

Eastern Red Cedar *Juniperus virginiana*

Eastern Redbud *Cercis canadensis*

English Oak *Quercus robur*

European Beech *Fagus sylvatica*

European Larch *Larix decidua*

European Mountainash *Sorbus aucuparia*

European White Birch *Betula pendula* (*Betula verrucosa*)

Ginkgo *Ginkgo biloba*

Goldenraintree *Koelreuteria paniculata*

Hackberry *Celtis occidentalis*

Honeylocust (Only in pits or confined spaces) * watch planting percentage

Hophornbeam (Ironwood) *Ostrya virginiana*

Japanese Yew *Taxus cuspidata*

Japanese Zelkova *Zelkova serrata*

Katsuratree *Cercidiphyllum japonicum*

Kentucky Coffeetree *Gymnocladus dioicus*

Larch Tamarack *Larix laricina*

Littleleaf Linden *Tilia cordata*

North Catalpa *Catalpa speciosa*

Norway Spruce *Picea abies*

Ohio Buckeye *Aesculus glabra*

Osage Orange *Malcura pomifera*

Paper Birch *Betula papyrifera*

Pecan *Carya illinoensis*

Persimmon *Diospyros virginiana*

Pin Oak *Quercus palustris*

Red Maple *Acer rubrum*

Marmo Maple (cross between Silver and Red maple)

Red Oak *Quercus rubra*

Red Pine *Pinus resinosa*

Regal Prince Oak

(cross of swamp whie and English oak)

River Birch

Betula nigra

Sassafras *Sassafras albidum*

Saucer Magnolia *Magnolia soulangiana*

Scots Pine *Pinus sylvestris* (avoid planting due to Zimmerman P. M.)

Shagbark Hickory *Carya ovata*

Shingle Oak *Quercus imbricaria*

Slippery Elm *Ulmus rubra*

Smooth Sumac *Rhus glabra*

Staghorn Sumac *Rhus typhina*

Star Magnolia *Magnolia stellata*

Sugar Maple *Acer saccharum*

Swamp White Oak *Quercus bicolor*

Sweetgum *Liquidambar styraciflua*

Sycamore *Platanus occidentalis*

Tuliptree *Liriodendron tulipifera*

Washington Hawthorn *Crataegus phaenopyrum*

White Cedar *Thuja occidentalis*

White Fir *Abies concolor*

White Pine *Pinus strobus*

Yellowwood *Cladastis lutea*

Recommendations for specific sites:

Trees to be planted in confined spaces:

Chanticleer Pear: This is an upright, narrow tree which has an abundance of white flowers which are less susceptible to late spring freezes because of late blooming. Like the Aristocrat Pear, it grows to 35 feet making it another good choice for small spaces.

Common Thornless Honeylocust: Fast-growing and takes well to transplanting, the Honeylocust is tolerant of salt, drought and soil variations. It can grow anywhere from 30' to 50' and its delicate leaves turn bright golden yellow in autumn. If overplanted, consider alternatives. 'Skyline' preferred. (avoid over planting).

Ginkgo: Transplants well and is particularly urban tolerant, withstanding heat, pollution, road salt spray and almost any soil condition. Its fan-shaped leaves turn a brilliant yellow in autumn. The ginkgo is slow-growing for two to three years, but can eventually reach a height of 50' to 80'. 'Princeton Sentry' and 'Magyar' preferred.

Japanese Tree Lilac: This small 15' to 20' tree copes well with limited planting space. It produces an explosion of creamy white flowers in late May.

Kentucky Coffeetree: This native Midwestern tree has a coarse picturesque look. It can reach a height of 40' to 50'. It has splendid tropical foliage and needs good drainage.

Little Leaf Linden: Noted for its shiny, small, heart-shaped leaves, the Little Leaf Linden grows 60' to 70'. It has smooth bark and fragrant flowers that bloom sometime in June and July.

Redmond Linden: This hybrid tree, which grows 40' to 50', is noted for its heart-shaped leaves, smooth bark, fragrant June flowers and formal pyramidal shape. It is very urban tolerant.

Hybrid Elms: Urban and disease tolerant. Grows to 70' plus.

Accolade Elm , Commendation Elm , Pioneer Elm , Triumph Elm preferred.

Hackberry: Elm family; another urban tolerant tree. 'Chicagoland' hackberry preferred.

Under Powerlines

Hedge Maple
Japanese Tree Lilac
Amur Maple
Redspire pear

Grass Parkways

Many options but good performers in Chicago include: Bloodgood London planetree , Columbia London planetree, Bur oak , Swamp White oak, Hackberry

Landscape Islands (Parking Lot/ Vehicular Use Area with high salt exposure)

Northern Catalpa
'Chicago Blues' Blacklocust * note it may be invasive
Hybrid Elms
 'Accolade' Elm
 'Commendation' Elm
 'Pioneer Elm'
 'Triumph' Elm
'Chicagoland' Hackberry

Species that are overplanted in Chicago and need to be avoided: Honeylocust, Norway maple and Silver Maple.

Species that are common on campus, but not yet at the 15% planting density: Cockspur hawthorn, Mulberry.