

RAMAPO COLLEGE

OF NEW JERSEY

DEPARTMENT OF FACILITIES MANAGEMENT

2020 Ramapo College Tree Campus

A Tree Care Plan for Ramapo College of New Jersey

December 30, 2020

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Standard 1: Campus Tree Advisory Committee

Background

Ramapo College of New Jersey (RCNJ) is dedicated to providing students a strong foundation for a lifetime of achievement. The College is committed to academic excellence through interdisciplinary and experiential learning, and international and intercultural understanding. Ramapo College emphasizes teaching and individual attention to all students. We promote diversity, inclusiveness, sustainability, student engagement, and community involvement.¹

As the region's premier public liberal arts college, Ramapo College of New Jersey prepares students to be successful leaders for a changing world through its distinctive commitments to hands-on learning and faculty-student mentoring.²

The work of the College and its members is conducted with integrity. Our values are steeped in teaching, learning, and mentoring—we are actively engaged in and out of the classroom. Developing the whole person—we are scholars, we are creators, we are local and global citizens, and we are individuals. Respecting each other and our environment—we are an open, inclusive, supportive, and sustainable community.³

At Ramapo we recognize that trees are an important asset for our campus and the community. Our campus provides a diverse habitat for both regional and migratory species, acts to diminish carbon from reaching the atmosphere and we believe trees have a positive impact physically, emotionally and mentally.

Campus Tree Advisory Committee

The Campus Tree advisory committee was formed in 2020 by the Associate Director of the Department of Facilities Management with the purpose of seeking Tree Campus USA designation. The committee is an advisory to the Grounds department at Ramapo College and to the campus community on matters relating to campus trees. Responsibilities include:

1. Attain Tree Campus USA status and assist in renewal thereof annually
2. Assist in the development of a sustainable management plan in conjunction with other knowledgeable associates
3. Establish best practices that are continuously developed and reviewed for tree planting, continued care and decisions for removal
4. Review species selection to ensure they are mindfully chosen for environmental fortitude, regional appropriateness, educational value and are in line with the values of creating an attractive, engaging and healthful campus
5. Promote an annual Arbor Day observance event
6. Provide recommendations and consultation in regards to Tree Replacement and Damage Policy for campus

Management of campus trees is under the authority of the Facilities department. The Campus Tree Advisory Committee will provide support by giving guidance for future planning, facilitate the creation and development of a comprehensive campus tree plan, provide information to educate on the benefits of trees, and work to establish a connection between Ramapo College and the greater community surrounding our campus.

¹ (Ramapo College of New Jersey, 2013)

² (Ramapo College of New Jersey, 2013)

³ (Ramapo College of New Jersey, 2016)

The Campus Tree Advisory Committee is an important part of the overall Tree Care Plan, and it is complementary to other related Ramapo Green initiatives across campus.

Due to COVID-19 the Campus Tree Advisory Committee was unable to meet at regular intervals during the year. The dates listed below incorporate multiple modalities of meetings including in person and email correspondences. It has been determined that the committee members will be identified annually during the month of January by the Director or Associate Director of Facilities Management and there is no term limit for committee membership.

2020 Committee Members

Lauren Tibbetts
Edward Roessler
Eric Wiener
Anne Ortlieb

Associate Director of Facilities
Building Manager, Grounds
Associate Professor of Environmental Science
Student
Community Member

Due to the pandemic a volunteer was unable to be secured. However, we expect to have a community member on the committee in 2021 as soon as possible.

2020 Meeting Schedule

The first meeting was held on February 21, 2020 to discuss the forming of a Tree Campus Committee and applying for and submission of the Tree Campus USA application. March 3, 2020 the designated Faculty member Eric Wiener joined the Tree Campus committee followed by our student representative, Anne Ortlieb, following an email correspondence on March 11, 2020. Our exterior non-associated member, Dana Trinkleback, Ecologist/ Environmental Scientist accepted our invitation to be a part of the Tree Campus Committee. However, due to the pandemic-related events which ensued in March of 2020, her presence was not confirmed nor secured. General email correspondences were exchanged during the beginning of March, including planning of our Arbor Day tree planting to coincide with the College's 50th anniversary and Earth Day, as well as the beginning stages of species selection. Periodically, through the remainder of the year committee members conducted discourse via email.

Standard 2: Campus Tree Care Plan

Purpose of Tree Care Plan

The purpose and intent of the Tree Care Plan is to develop more comprehensive standards, with the understanding that the Tree Care Plan is a living and ever evolving document. The continued focus is Ramapo's campus trees, to protect existing and future trees and habitat. The committee will be guided, regard and be mindful of current and future tree health concerns with the focus on native varieties. Our goal is to be recognized as Tree Campus USA and to renew our commitment annually.

Responsible Department

Campus trees are under the auspice of RCNJ's Grounds department and the following of this tree plan and those set forth in the future will be held up by the Grounds department.

Campus Tree Advisory Committee

The Tree Campus Advisory Committee is described in Standard 1.

Campus Tree Care Policy

Ramapo College, in an effort to preserve and cultivate sustainable practices, established a policy with focused attention on native tree species. All tree selections are currently vetted through the Facilities Department and going forward will be proposed through the Tree Campus Committee.

Planting Practices

Trees shall be chosen for regional value, diversity and fortitude, educational value, interest and support of area habitat.

- ❖ For all plantings, minimum requirements must adhere to the *American National Standard: Tree, Shrub, and Other Woody Plants Management- Standard Practices (Planting and Transplanting) 2018* and the *American Standard for Nursery Stock (ANSI Z60.1-2014)*
- ❖ Upon receipt of a tree(s), full inspection is requisite.
- ❖ Prior to planting, ensure ground is suitable for planting; no debris or chemicals that can cause harm are deposited in soil. If found, soil should be remediated and replaced with new planting soil.
- ❖ Prepare the root ball by removing damaged roots and stems.
- ❖ Excavate hole no deeper than the root ball, measured from root flare to bottom of root ball and at least three times as wide as ball diameter (balled and burlapped)
- ❖ Apply root growth stimulants to the planting hole and the entire root ball.

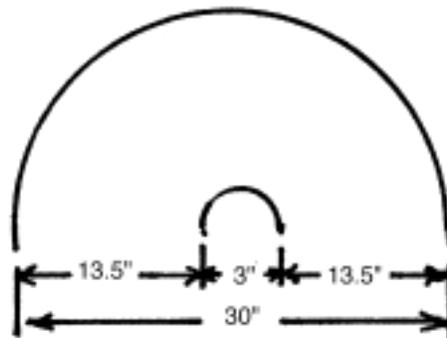


FIGURE 7 – Example: Center of plant in center of root ball⁴

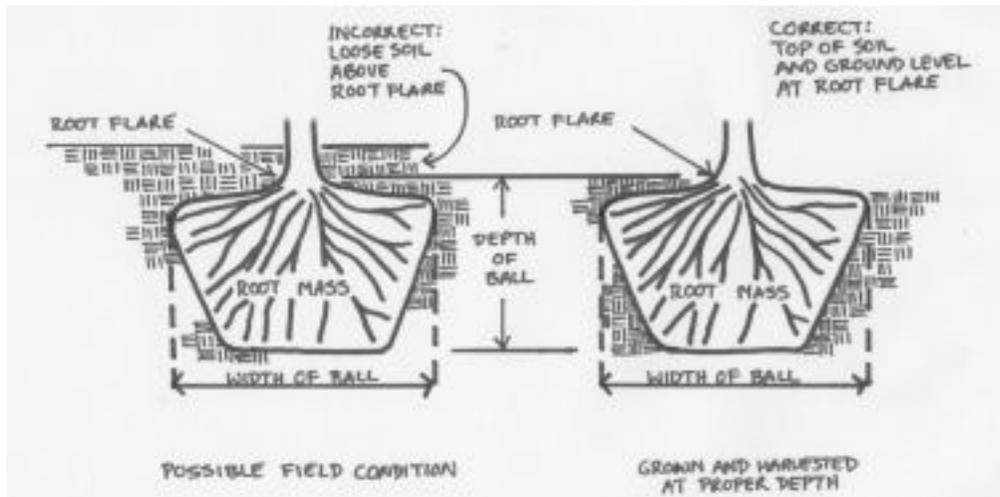


FIGURE 8 – Measurement of root ball depths⁵

Pruning Schedule

The maintenance pruning schedule shall be dictated by tree species, age, function, and placement.

- ❖ Trees less than 7 years old are inspected on a rotating basis for structural pruning on an annual or biennial basis as needed.
- ❖ Trees 7-20 years old are inspected on a rotating basis for structural pruning every two to five years.
- ❖ Trees 20 years old and older are inspected every five to seven years and maintained as needed to clean dead, diseased, dying, and defective branches from the crown.
- ❖ Trees adjacent to roadways, walkways, signs, street lights and other utilities are annually inspected for safety and clearance issues and maintenance pruned as necessary. Pruning will take precedence especially in the case where trees require pruning in order to inhibit utility loss, when complying to clearance codes or in prevention or remediation of hazardous conditions.

Pruning Practices

To encourage the development of a strong, healthy tree, the following guidelines shall be followed when pruning. The below described practices are based either complete or in part by the *TCIA American National Standard for Tree Care Operations Tree, Shrub, and Other Woody Plant Management- Standard Practices, 2008 (Pruning)*.

General

- ❖ Pruning shall be conducted using *ANSI A300* standards as applicable
- ❖ Pruning shall not be administered without a clear objective or outcome. Prune for safety first, next for health, and finally for aesthetics and only as needed.
- ❖ Equipment, tools and work that damage trees beyond scope of work shall be avoided.

⁴ (American Horticulture Industry Association d/b/a AmericanHort, 2014, #)

⁵ (American Horticulture Industry Association d/b/a AmericanHort, 2014, #)

Cleaning

- ❖ Cleaning shall be performed to remove dead, diseased, dying, and defective branches, in order to reduce hazards, promote health, and improve appearance.
- ❖ Large branches should be removed with the aid of ropes and rigging equipment to minimize the risk of tree injury from falling debris. Work that is not conducted by Facilities is conducted by outside contractors under the guidance of the Building Manager of Grounds.

Thinning

- ❖ Thinning, when appropriate, shall consist of selecting live branches with the purpose of pruning to reduce density.
- ❖ Thinning should leave the tree with an even appearance and distribution of weight.

Reduction

- ❖ Reduction, when appropriate, shall be performed to decrease the overall height of a tree or to decrease the length of an individual branch
- ❖ If it is necessary to remove more than half of the foliage from a branch, remove the entire branch.
- ❖ Reduction will be determined based on location and ability of species to tolerate reduction pruning.

Cultural Practices

Mulching and Irrigation

Mulching of trees occurs annually in planting beds, and more often in high profile locations throughout campus. The creation of mulch volcanoes will be avoided. Irrigation is active in the same locations, as needed.

Fertilization and Pest Management

- ❖ Trees are treated for pest problems as needed, utilizing Integrated Pest Management techniques and strategies with special attention to a least toxic means approach as much as is practical.
- ❖ Deep-root tree fertilization occurs twice annually (Spring/Fall) on select trees. Specimen or high-value trees may receive prescription fertilization when severe nutrient deficiencies are diagnosed.
- ❖ All new trees require root growth stimulant at planting and periodically throughout the course of the first two years and when needed afterwards

Other Practices

Tree Removals

- ❖ Live trees are generally removed only when required to protect the public safety or are being removed for the purpose of construction.
- ❖ Trees may only be removed after consultation with the Facilities Grounds Department inline with above mentioned standards and in consultation when and if possible with the Tree Campus Committee in non-emergent situations.
- ❖ Consideration will be given to possible transplantation to other locations on campus,

Planting and Tree Diversity

- ❖ As the campus is used as a teaching lab, increasing the diversity of tree species is extremely important. However, species selection must be dictated

by site conditions.

The campus planting species list has been initiated and will be a continuously evolving resource. Based on the vernacular of the site, landscapes generally will be planted with native species. Known invasive woody plants are consciously avoided in all tree planting plans.

Storm Response and Recovery

Storm response and recovery are generally accomplished in-house. Ramapo’s first priority is to remove tree debris hindering campus thoroughfares, disrupting campus operations, and/or posing hazards to the campus community. After crucial areas are secured, a systematic plan is devised during which unsalvageable trees are removed. During storm response and recovery, trees requiring specialized equipment not available in-house are addressed by an outside contractor.

Protection and Preservation Policies and Procedures

When reasonable, heavy equipment should not be placed, parked or located below the extent of a tree’s canopy. On all construction sites when applicable and possible, tree protection zones shall be respected. When needed, safe distance from the trunk of the tree should be delineated by simple barriers. Area shall be defined in conjunction with the facilities and/or capital planning departments prior to the commencement of any work.

In the case of large tree removal, best practice is to replace with two to three trees. When and if possible, trees that are able to be relocated to another area on campus will be transplanted. Tree quality is of high importance and thus trees should meet the minimum requirements of the American Standard for Nursery Stock (ANSI). All nursery stock transacted within the terms of the Standard shall, at time of shipment, be substantially free of damaging insects and diseases, in good living condition, and typical in habit for the species in the region of the country in which it is grown.⁶

Native Tree Species: Preferred/ Avoid

Preferred Native Tree Species		Native Tree Species to Avoid due to Insect, Disease or Structural Issues	
scientific name	common name(s)	scientific name	common name(s)
SAPINDACEAE (MAPLES)		SAPINDACEAE (MAPLES)	
<i>Acer negundo</i>	box-elder maple	<i>Acer saccharinum</i>	silver maple
<i>Acer pennsylvanicum</i>	striped maple		
<i>Acer rubrum</i>	red maple	BETULACEAE (BIRCH)	
<i>Acer saccharum</i>	sugar maple	native <i>Betula</i> spp. not on preferred list	native birches not on preferred list
ROSACEAE (ROSE)		FAGACEAE (OAKS/BEECHES)	
<i>Amelanchier arborea</i>	downy serviceberry	<i>Fagus grandifolia</i>	American beech
<i>Amelanchier canadensis</i>	Canada serviceberry; juneberry	FRAXINACEAE (ASH/OLIVE)	
<i>Amelanchier laevis</i>	shadbloss; juneberry	<i>Fraxinus</i> spp.	ash species
<i>Crataegus viridis</i>	Hawthorn (King variety)	PINACEAE (PINE)	
<i>Prunus serotina</i>	black cherry	<i>Pinus strobus</i>	Eastern white pine
<i>Prunus virginiana</i>	chokecherry	<i>Tsuga canadensis</i>	Eastern hemlock

⁶ (American Horticulture Industry Association d/b/a AmericanHort, 2014, #)

ANONNACEAE (CUSTARD APPLE)			
<i>Asimina triloba</i>	pawpaw	SALICACEAE (WILLOW)	
BETULACEAE (BIRCH)		<i>Populus deltoides</i>	Eastern cottonwood
<i>Alnus incana</i>	speckled alder	<i>Populus grandidentata</i>	big-toothed aspen
<i>Betula alleghaniensis</i>	yellow birch	<i>Populus tremuloides</i>	trembling aspen, quaking aspen
<i>Betula lenta</i>	black birch, sweet birch	ULMACEAE (ELM)	
<i>Betula nigra</i>	river birch	<i>Ulmus americana</i>	American elm
<i>Carpinus caroliniana</i>	musclewood, American hornbeam		
<i>Ostrya virginiana</i>	ironwood, American hop hornbeam		
JUGLANDACEAE (HICKORIES/WALNUTS)			
<i>Carya cordiformis</i>	bitternut hickory		
<i>Carya glabra</i>	pignut hickory		
<i>Carya laciniosa</i>	shellbark hickory		
<i>Carya ovata</i>	shagbark hickory		
<i>Carya tomentosa</i>	mockernut hickory		
<i>Juglans cinerea</i>	butternut, white walnut		
<i>Juglans nigra</i>	black walnut		
BIGNONIACEAE (BIGNONE)			
<i>Catalpa speciosa</i>	Northern catalpa		
FABACEAE (PEA)			
<i>Cercis canadensis</i>	Eastern redbud		
CANNABACEAE (HEMP)			
<i>Celtis occidentalis</i>	Northern hackberry		
CORNACEAE (DOGWOODS)			
<i>Cornus alternifolia</i>	alternate-leaved dogwood		
<i>Cornus florida</i>	flowering dogwood		
EBENACEAE (PERSIMMON)			
<i>Diospyros virginiana</i>	persimmon		
CUPRESSACEAE (CYPRESS)			
<i>Chamaecyparis thyoides</i>	Atlantic white cedar		
<i>Juniperus virginiana</i>	Eastern redcedar		
PINACEAE (PINE)			
<i>Larix laricina</i>	American larch, tamarack		
ALTINGIACEAE (SWEETGUM)			
<i>Liquidambar styraciflua</i>	American sweetgum		
MAGNOLIACEAE (MAGNOLIAS)			
<i>Liriodendron tulipifera</i>	tulip tree		
<i>Magnolia grandiflora</i>	sweetbay magnolia		
NYSSACEAE (SOUR GUM)			
<i>Nyssa sylvatica</i>	blackgum		
PLATANACEAE (PLANE TREE)			
<i>Platanus occidentalis</i>	sycamore		
FABACEAE (OAKS/BEECHES)			

<i>Quercus alba</i>	white oak		
<i>Quercus bicolor</i>	swamp white oak		
<i>Quercus coccinea</i>	scarlet oak		
<i>Quercus montana</i> (previously "prinus")	chestnut oak		
<i>Quercus palustris</i>	pin oak		
<i>Quercus rubra</i>	Northern red oak		
<i>Quercus velutina</i>	black oak		
SALICACEAE (WILLOW)			
<i>Salix nigra</i>	black willow		
LAURACEAE (LAUREL)			
<i>Sassafras albidum</i>	sassafras		
TILIACEAE (LINDEN)			
<i>Tilia americana</i>	American basswood		

Goals and Targets

Our first goal was to create a Tree Campus Committee, a group dedicated to the wellbeing of our Campus and Community Trees. Our second goal was to gather with students for a planting for our first Arbor Day Celebration. The plan was stymied due to the pandemic. Although our goal and target was missed, RCNJ students participated in a field research study which focused on the mortality of chestnut oak trees (*Quercus montana*) in a New Jersey Highlands forest. This became the centerpiece of our Student Learning Project for 2020. See Standard 5 for details. Our third goal was to begin documenting a list of preferred and avoided trees to serve as a guide for further defining our protection and preservation policies and procedures to be utilized for future planting and planning and to begin as the base of our goal for establishing a tree inventory.

Tree Damage Assessment

Tree damage will first be assessed by the Building Manager of Grounds. Based on the initial assessment, an arborist may be retained to ascertain the best course of action and determine next steps. Considerations of recommendations will be based on whether the tree or parts thereof are hazardous to life and safety. In the event the tree or any part thereof is found to be detrimental to the public and or any nearby edifices, the danger will be remediated. If corrective measures other than removal are possible, such as fertilization or insect/disease control, those options will first be employed. In the case a tree has been damaged by a person or company, an incident report will be filed with Ramapo College's Public Safety. Recourse will be managed based on College affiliation.

Prohibited Practices

Tree planting on campus will not be permitted without authorization by Facilities and/or Capital planning and, when and if possible, the Tree Campus Committee. All tree dedications must be approved by the College in advance and require species and location approvals. Removal of trees without permission of Facilities and/or Capital Planning is strictly prohibited.

Definition of terminology Related to Campus Trees

Integrated Pest Management (IPM)- Sustainable, science-based, decision-making process that combines biological, cultural, physical and chemical tools to identify, manage and reduce risk from pests and pest

management tools and strategies in a way that minimize overall economic, health and environmental risks.⁷

Native Tree- Tree species within a defined geographic area existing without direct or indirect human introduction; indigenous. Native trees at Ramapo College refer to the Northern New Jersey region, with an emphasis on Bergen County.

Communication Strategy

Tree planting and protection guidelines are communicated to stakeholders and relevant parties via onsite discussions, email correspondences, meetings and consultation between Facilities, Capital Planning (project dependent) and pertinent campus educators as needed.

In 2021, one of our goals will be to establish a Tree Campus Committee webpage. Once the webpage is posted, all information pertaining to guidelines and procedures will be posted and readily accessible.

Standard 3: Dedicated Tree Expenditures

Grounds Tree Program Budget

Annual funding for campus trees will be funded through the Grounds department. Capital Projects are kept separate and apart from the secured tree care funding. 2020 tree care associated costs were as follows and included tree care such as fertilization, planting and/or removal. Removal occurs based on factors listed in Standard 2 of RCNJ’s Tree Campus Care Policy.

Action	Total Dollar Amounts
Removal of Ailanthus due to its invasive nature and as a preventive measure against Spotted Lanternfly (Labor)	\$ 1,526.16
Spring and Fall Deep Root Fertilization (Chemical)	\$ 135.81
Spring and Fall Deep Root Fertilization (Labor)	\$ 738.40
Tree and Hardy Shrub Planting (Materials)	\$ 720.00
Tree and Hardy Shrub Planting (Labor)	\$ 343.38
Tree Removal Due to Storm Related Damages (Vendor: Labor and Removal)	\$ 3,250.00
Tree Removal Due to Storm Related Damages- Grounds (Labor)	\$ 5,238.20
Total Cost January to December 2020	\$ 11,951.95

⁷ (IPM Institute of North America, n.d.)

Additional Information

Ramapo has begun the removal of Ailanthus as a preventative measure to reduce the risk of creating a hospitable environment for the Spotted Lanternfly (*Lycorma delicatula* (Hemiptera: Fulgoridae)) and in an effort to remove non-native invasive species, allowing room to plant native and appropriate tree species.

Standard 4: Arbor Day Observance

Planned Arbor Day Observance Event was in discussion to coincide with the College's 50th anniversary and Earth Day. Due to pandemic Ramapo College has postponed Arbor Day Observation and tree planting until April 2021, date to be determined during February 2021 meeting.

Standard 5: Service Learning Projects

Tree Inventory Research

During the fall semester of 2020, eight Ramapo College students conducted field research about forest tree ecology, led by Professor Eric Wiener via an upper level research course, a college honors research project and a School of Theoretical and Applied Science research honors project. The research focused on the impacts of the mortality of chestnut oak trees (*Quercus montana*) in a New Jersey Highlands forest due to a recent outbreak of oak leaf rollers (*Archips semiferanus*), which is a native insect species for which population outbreaks otherwise are generally rare. Students collected data on over 800 dead canopy trees and on over 1,700 young trees regenerating beneath the canopy openings left behind by dead canopy trees. Results of their surveys showed that the insect outbreak caused a substantial amount of mortality of large canopy trees, and that nearly two-thirds of the trees that are most likely to replace the dead trees are birches and maples.

Conclusion: What does earning Tree Campus Higher Education Recognition mean to Ramapo.

Commencing on the path to become a Tree Campus USA further embodies Ramapo's devotion to its mission, vision, values and purpose of providing students a strong foundation for a lifetime of achievement. Promotion of sustainability embraces Ramapo College's commitment to serving as a model of best practices that can be highlighted to educate students and the greater community . We strive to be partners of the community both internally and as active global citizens. Being recognized for our ardent dedication to our Campus's natural resources and efforts for protecting those resources will serve to help further promote the preservation of our environment. Receiving recognition as a Tree Campus USA will enhance the positive physical, emotional and mental impact of our College and advances our connection to the local community.

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