

Schmidt Field

2024 Tree Inventory and Planting Plan

Cincinnati Recreation Commission



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Introduction

A complete and accurate tree inventory and plan for planting is key to both effective tree management and taking advantage of funding opportunities when they become available. This report summarizes the findings of the 2024 tree inventory conducted at Schmidt Field Park, along with planting and care recommendations. This report will allow Schmidt Field to move into the future safer and with more shade for park users.

Inventory Summary

An ISA Certified Arborist with TRAQ collected data points on **221 sites** within Schmidt Field Park, during the week of September 30, 2024. Of those points, 119 represent trees, 2 are stumps, and 100 sites are proposed planting sites.

The data collected is represented in Figure 1 below, and includes tree size, species, location, condition and maintenance needs. A full methodology can be found in Appendix A.



Figure 1: Inventory map.

Tree Species and Diversity

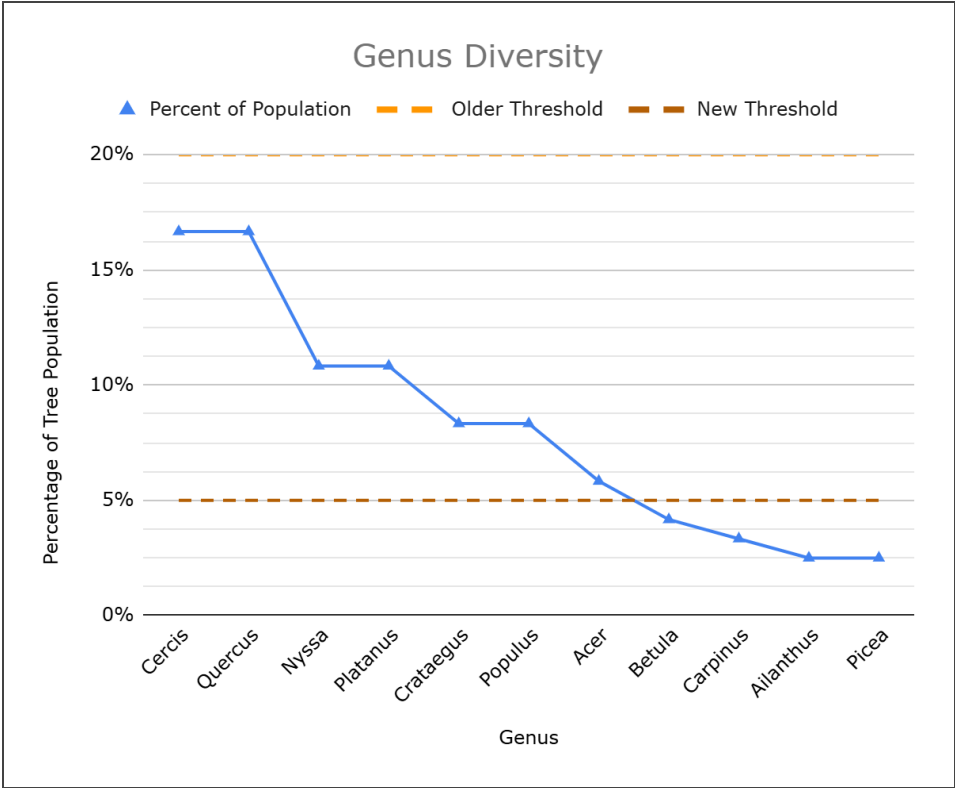
At this time, there are 25 distinct species of trees in Schmidt Field Park.

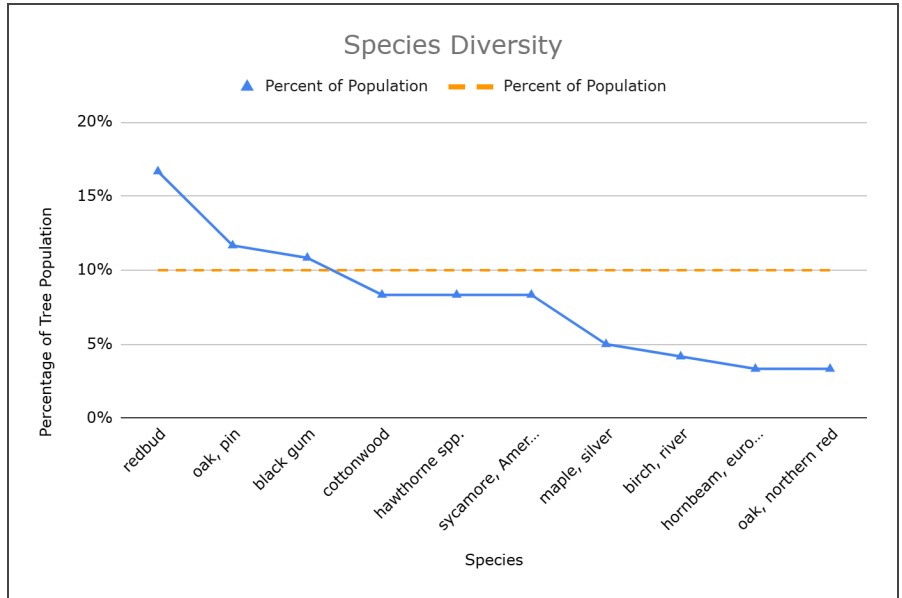
There is an industry standard on tree species referred to as the “10-20-30 Rule.” It is a guideline to reduce the risk of significant tree loss due to insects, disease, climate extremes, and other stressors in an urban environment. The rule suggests an urban landscape tree population should include no more than 10% of any one tree species, 20% of any one tree genus, or 30% of any family.

However, in more recent years, a new guideline (initially put forward by South Dakota State University’s Dr. John Ball) calls for adherence to a single metric of **no more than 5% of any one genus** of trees. This is based on the knowledge that most of the threats from pests and diseases that we continue to face affects trees of a certain genus more than any species, so to limit exposure to threats, higher genus diversity is preferable.

While no one genus represents more than 20% of the population, data collected reveals that several genera exceed this 5% diversity threshold, most notably redbuds and oaks. Similarly, redbuds and pin oaks, as well as black gums, exceed the original 10% species threshold.

Figures 2 & 3: Public Tree Diversity Charts as Percentage of Total Tree Population

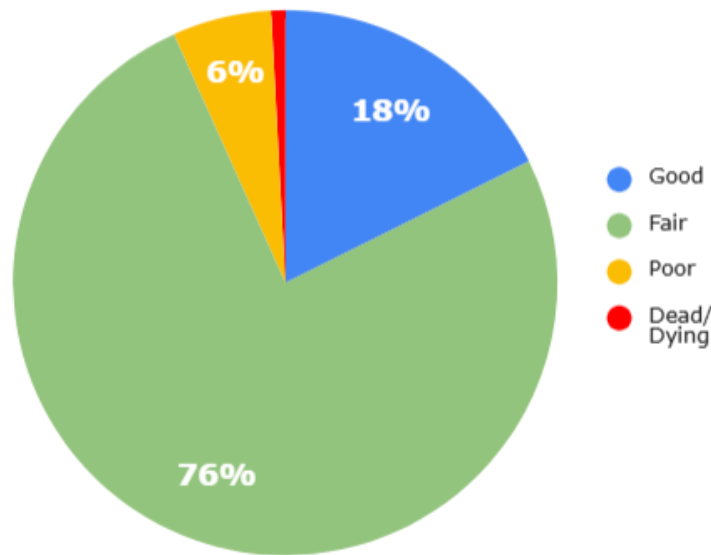




Condition of Tree Population

Trees in good condition require less maintenance and are more resilient to insect and disease threats. The majority of trees in Schmidt Field Park are in Fair or better condition, with poor condition or dead trees making up only 7% of the tree population, as seen in Figure 4.

Figure 4: Schmidt Field Tree Condition as Percentage of Total Population



These two factors can be examined together for additional insight, as shown in the Figure 5 below. There are a fair number of trees on the younger side in good condition. The poor and dead trees are largely made up of redbuds (3), which are a short-lived tree, as well as larger,

native trees that are considered early successional species, and are often fast-growing and weak-wooded, like boxelder and cottonwood.

Figure 5: Schmidt Field Public Tree Size Class and Condition Matrix

Size Class	Total	Good	Fair	Poor	Dead/ Dying
Young (1-6" DBH)	47	15	31	1	0
Established (7-17" DBH)	40	4	32	3	1
Maturing (18-24" DBH)	4	0	4	0	0
Mature (Over 24")	28	2	23	3	0
Totals	119	21	90	7	1

Tree Maintenance Recommendations

During the inventory, trees were assigned a primary maintenance recommendation. Ranging from “None required” to “Prune” to “Remove.”

- Priority Needs:
 - Priority I: 7 trees (pruning, removal, and removal of hangers)
 - Priority 2: 19 trees, primarily deadwooding limbs 4-14” diameter.
- Proactive Care: 40 trees are recommended for pruning as part of an ongoing cyclical care program.
- Young Training Prune: 32
- Other Care Needs
 - Remove Vines or other aggressive volunteer plants: 6
 - Mulch/install weed whip protection: 10
 - Mulch Volcano: 8
 - Address Girdling Roots: 1
 - Remove staking: 5
 - Remove gator bag and deer protection: 6
 - Monitor: 3

Priority Needs

The following list summarizes the primary maintenance recommendations.

Priority I: Work Over Next Season. These are trees with maintenance needs that should be handled within next 1-4 months - 7 trees



Figure 6: Map of Priority 1 Maintenance Needs

1. Location: Beside the shelterhouse, interior of ballfields
 Tree #1: 23" silver maple
 Issue: Hanger caught up in limbs, around 5" diameter. Once the hanger is removed, this tree can be put on the cyclical pruning schedule.
2. Location: Interior of baseball fields
 Tree #6: 37" cottonwood, and Tree #8: 51" cottonwood
 Issue: Both trees have hangers that should be removed promptly, particularly if the ball fields are in use. Tree #8 appears to be dying and is in very poor condition and should be removed. Tree #6 can be retained at least temporarily following pruning to remove deadwood.
3. Location: Near lookout at the deadend of Corbin Street
 Tree #71: 12" eastern redbud, and Tree #72: 9" eastern redbud
 Issue: This species is typically a short-lived tree, with both of these trees at the end of their life-span, and should be removed. Tree #71 has all but fully lifted out of the ground, only held up by another nearby tree. Tree #72 has a split between the two main branches that extends a foot down the trunk and appears to be widening.
4. Location: Corner of St. Peter's Street and Babb Alley

Tree #93: 48" hackberry

Issue: Tree has a hollow trunk, with branch die-back, as well as root damage.

Recommending tree for removal as it is unlikely to recover or improve.

5. Location: near the parking spots along Hubert

Tree #98: 38" pin oak

Issue: Tree has 2 large dead limbs overhanging park recreation space and parking lot.

Large fungal bodies are present on multiple sides of the roots/trunk, and indicate that decay is widespread in this tree. Removal and replacement is recommended.

Priority II: Work Over next 12 months. These are trees with maintenance needs that should be handled over the next 12 months. There are 19 trees in this category, needing either pruning or removal. This full list can be found in Appendix B.

Proactive Cyclical Care

All trees in public spaces should be assessed regularly and considered for preventative pruning care. Proactive care by pruning trees on a systematic and consistent basis has been shown to significantly improve the condition of trees, as well as saving the entity money on pruning in the long-term by reducing the need to react once damage has already occurred. One study (Miller and Sylvester 1981) showed trees lived longer and had better long term condition when they received more proactive care.

There are currently 40 trees in Schmidt Field Park recommended for pruning maintenance of some kind, most commonly pruning for clearance and to remove deadwood less than 2 inches diameter. This data, as well as all additional maintenance recommendations, will be provided to the Cincinnati Recreation Commission in both spreadsheet and shapefile formats, and can also be accessed in read-only format through our subscription to TreePlotter.

Young Tree Pruning

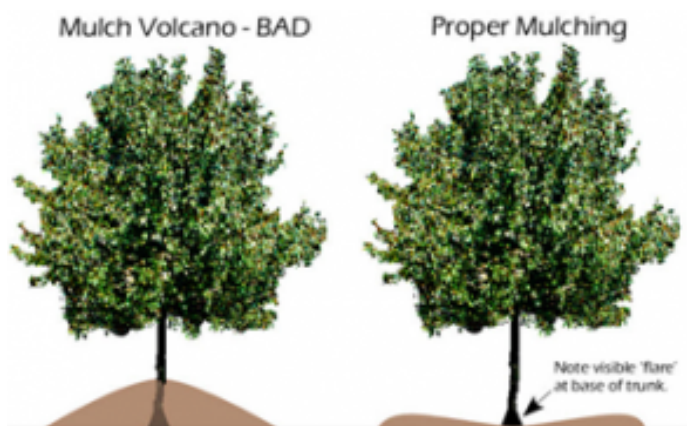
There are 32 trees that are recommended for young tree structural pruning. This kind of proactive pruning encourages good long-term growth patterns, cutting costs for pruning in the long-term by reducing the pruning needed when the tree is larger. It also provides an opportunity for the tree to be pruned for clearance, allowing better access without damage by cars and mowers. Young tree pruning is a smart investment on future and long-lasting tree canopy.

Young tree pruning can, for the most part, be performed from the ground (no ladders or lift trucks) using only hand tools. For this reason, this is often a task that community volunteers can participate in with training and guidance, and can be an effective way to engage the public in tree canopy efforts. UCW offers tree pruning workshops for both employee and volunteer groups if interested.

Other Care Needs

Besides the typical pruning and removal expected with tree maintenance, there are other proactive actions that can be taken to improve the health of the trees in Schmidt Field Park.

- **Install trunk protection against mowers and string trimmers.** Many of the trees had evidence of mower or string-trimmer damage at the base or on the root system. Young trees' bark is especially vulnerable to this kind of damage, and repeated damage can cause permanent wounds to the important layer of wood that transports nutrients throughout the tree. In severe situations, this kind of damage will kill a tree. To prevent further damage, mulch out to the dripline for each tree, and/or install trunk protection.
- **Address mulch volcanoes.** Piling significant amounts of mulch against a tree's trunk is referred to as a "mulch volcano," as shown in the example below. Mulch volcanoes cause significant stress and damage to trees. Mulch volcanoes invite insect and disease issues, can cause bark or root rot, and reduce access to the necessary oxygen in the soil. They can also result in a secondary root system, known as girdling roots, that can eventually cut off the flow of nutrients, resulting in tree failure. Instead, mulch in a "donut" shape - spread mulch 2-4 inches deep out the the dripline, leaving a gap between the mulch and the trunk.



- **Remove vines or other aggressive volunteer plants.** While most native vines don't present a problem for trees, some introduced species of vine (like English ivy or wintercreeper) are aggressive and can add considerable weight, increasing the risk of failure from loadbearing. Remove invasive plants growing on or near trees to prevent competition for resources.
- **Remove staking, gator bags, and deer protection.** While these tools are really helpful immediately following planting, care should be taken not to leave them in place for too long. Young trees grow quickly and will grow through and around staking or fencing left in place too long. This can result in limb damage or girdling/suffocating the tree. Staking should only be done when necessary to allow the tree to form strong supportive roots, and should be removed or adjusted after no more than a year. Additionally, Gator bags can provide a shelter for tree pests and disease if left in place during winter months.
- **Address girdling roots.** Girdling roots should be pruned/removed to prevent strangulation of the tree.
- **Trees to monitor.** There are 3 trees that appear to be in fair condition for now, but have conditions that may resolve into bigger issues, and warrant keeping an eye on annually.
 - Tree #108 - 24" sycamore with leaf dieback: this leaf dieback could simply be the result of a wet spring and dry summer, which often presents as anthracnose,

especially in sycamores. If the canopy does not appear full and healthy in the spring/summer of 2025, consider taking a sample to the local extension agency for disease diagnostics.

- Tree #112 - 48" catalpa with 6" dead limb: while the dead limb could be part of normal branch shedding, there is also some trunk damage and soil piled on top of the root zone, which likely means that the tree has had some critical root zone damage. Catalpas are generally sturdy trees, and this tree is located away from any known high-value targets, so no need to remove at this time but keep an eye on how it progresses.
- Tree #12 - 37" cottonwood with 8" hanger: cottonwoods are fast-growing and weak-wooded, which can result in the branch failure seen in this tree, but deadwood is not widespread throughout the tree. Following pruning of deadwood, this tree should be monitored for improvement or progression of failure, especially since it is located along the baseball diamonds.

Planting Plan

A total of 100 potential planting sites were sited as part of this inventory work. Sites were selected that 1) would provide shade for walkers and other park users, and 2) where tree removals have been recommended.

Sites with overhead powerlines were cited as small tree sites, while those without were considered for large trees. In a few cases, a medium tree was suggested where there were no overhead powerlines, but there was limited soil space, like the narrow sections of “tree lawn” along Humbert.



Figure 7: Map of suggested planting sites.

Mapped Planting Sites

Tree planting sites can be divided into three groups:

Category A. Category A planting sites are recommended to plant first, and include sites with access to large soil space and less soil compaction, as well as sites along the walkways or replacing key trees in the infield. These include large trees along the Humbert and Ohio River trail that will provide shade for people using the recreational space, the walkway, and replace the large oak that is suggested for removal. It also includes plantings to replace trees on the infield that have been removed or will be soon, to ensure players have a shaded spot to rest during the game.

Category B. This next category of sites is recommended for the second round of planting, and include the other spaces bordering the walkways. These sites have signs of highly compacted soil that will require decompaction and soil amendment before planting. They include sites for large trees along Watson and Corbin to finish shading the walking trails, as well as replacing the hackberry at the corner of Babb Alley and St. Peter’s Street.

Category C. The sites that are considered the lowest priority for planting are considered Category C. These sites still border potential walking paths throughout the park, but include

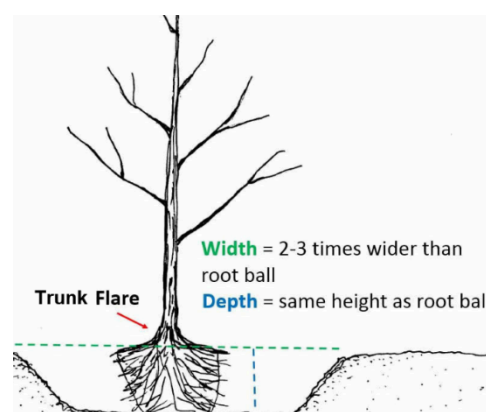
areas that may have less access to soil space or overhead powerlines, which will only allow for small and medium sized trees (less shade, less ecological benefits).

Considerations for Planting and Establishment

Keep the following in mind during planting to ensure future plantings are executed in a way that will result in the most healthy trees for the long-term.

Don't plant too deep. Whether contractors or volunteers, planting new trees too deep is the most common mistake people make when tree planting. If working with volunteers, make sure everyone gets a full demonstration on finding the root flare. For contractors, make sure the ANSI A300 standards for planting are clearly referenced in the contract.

Mulch properly. As stated in the primary maintenance section prior, proper mulching (not mulch volcanoes) can help prevent damage from string trimmers and mowers, as well as help maintain moisture and reduce competition with weeds and grass nearby.



Water for the first 1-2 years. Newly planted trees need weekly watering the first year, and regular watering for the following years as well. Filling gator bags on a weekly basis is a great way to do this, but they should be removed in the winter months and when not in use so pests don't take advantage of potential shelter.

Stake tree only if necessary. In most cases, it is not necessary to stake new trees. Allowing trees to sway and move in the wind is required to develop the proper trunk support and root taper. However, there are a few exceptions: A tree may benefit from staking if sited in a high-wind zone or in soil that has settled strangely. Additionally, staking and fencing can be good deterrents if deer or vandalism are expected. If stakes are used be sure to monitor them so the trunk isn't damaged, and to remove them after one year.

Address Compacted Soil. As mentioned in the previous section, Category B areas will need attention and amendment to the existing soil before planting.

What to Plant

When deciding what to plant, there are a few things to consider.

- 1. Plant native when possible.** There are a number of readily available native species in nurseries around the Cincinnati area. These include many species of hophornbeam, yellowwood, locust, coffeetree and more. You can find a list of native Ohio species at Ohio.gov

<<https://dam.assets.ohio.gov/image/upload/ohiodnr.gov/documents/wildlife/backyard-wild>

<life/Pub%205509%20Trees%20of%20Ohio%20Field%20Guide.pdf>> and any nursery staff person can help identify natives in their inventories. Parks are especially great locations to focus on native species, as wildlife from birds to pollinators and more benefit from access to native resources.

2. **Work to improve species diversity.** Species diversity is important to ensure the tree population at Schmidt Field will be resilient against any pests, diseases or other stressors in the coming decades. Based on the inventory, there are a few species or genus of trees that are overpopulated based on recommended thresholds (described in Inventory Summary Section on Tree Species and Diversity). We suggest avoiding planting these groups of trees until diversity levels stabilize.
 - a. Oaks (Quercus)
 - b. Redbuds (Cercis)
 - c. Tupelo / black gums (Nyssa)
 - d. Sycamore
 - e. Hawthorn
 - f. Cottonwood / poplar (Populus)
 - g. Maple (Acer)

Going Forward

As next steps, it is recommended that Schmidt Field Park consider the following:

1. Address the priority care needs identified in the first year following plan (2025).
2. Plan for pruning of larger trees in the cyclical care cycle. These are trees that may have clearance or light deadwooding (under 2” diameter). Consider young tree pruning either via contractors or a training and field day for volunteers.
3. Use the planting plan to apply for grants to fund installation of new trees.

Continued investment from the community will keep Schmidt Field Park a shady and desirable spot for people to spend time walking or recreating. Thank you to the Cincinnati Recreation Commission for being at the forefront of reducing heat island effects and providing an oasis for all to enjoy!

Appendices

Appendix A: Methodology

The Schmidt Field Park tree inventory project followed the standards set forth in the 2013 International Society of Arboriculture's (ISA) *Tree Inventories Best Management Practice*, and the 2011 ISA *Tree Risk Assessment Best Management Practice* publications, and the current *ANSI A300 (Part 9): Tree, Shrub, and Other Woody Plant Management --- Standards Practices 2017 (Tree Risk Assessment a. Tree Failure)*.

Urban Canopy Works' senior consulting arborists, holding the credentials of International Society of Arboriculture *Certified Arborist* and *Tree Risk Assessment Qualification*, performed the inventory September 30, 2024.

The trees were located and mapped using GIS technology and a tree inventory data collection software program on hand-held devices. Due to the limitations of current GIS technology, it was not possible to get exact location data for all trees, especially those in close proximity to buildings, in steep terrain and the interior of heavily wooded areas, as well as those in situations where several individual trees are growing closely together. All efforts were made to get as accurate location data as possible, but survey quality or sub-meter accuracy is not guaranteed.

The following plant and site attributes were collected for each tree:

- Unique identification number
- Location (GIS coordinates)
- Genus and species
- Size (caliper/diameter in inches)
- Overall condition (excellent, good, fair, poor, dying/dead)
- Primary maintenance recommendation (prune, remove, young tree training, further monitoring or inspection, none)
- Observations/notes

Read-only access to UCW's online inventory data management software program, Tree Plotter, was granted to Cincinnati Recreation Commission staff to allow inspection of the data.

Appendix B: Priority Care List

Table of trees that are recommended for priority care. Priority 1 refers to trees that should receive attention in the next 1-4 months, Priority 2 trees are recommended for attention within the next 5-12 months.

Priority	Tree Id	Common Name	DBH	Condition	Primary Maintenance	Maintenance Comments	Tree Comments
Priority 1	98	oak, pin	38	Poor	Priority Need, Removal	2 large dead limbs, large fungal bodies on roots	
Priority 1	93	hackberry	48	Poor	Priority Need, Removal	Hollow trunk, root damage, branch dieback	
Priority 1	72	redbud	9	Poor	Priority Need, Removal	Split trunk	
Priority 1	71	redbud	12	Critical	Priority Need, Removal	Dying tree pulling out of ground and resting on other tree	
Priority 1	8	cottonwood	51	Poor	Priority Need, Removal	Dying tree with hanger	
Priority 1	6	cottonwood	37	Fair	Prune, Priority Need	Priority hanger 8", deadwood	
Priority 1	1	maple, silver	23	Fair	Priority Need, Cyclical Program Prune	Priority removal of 5" hanger	
Priority 2	149	cottonwood	49	Fair	Prune	deadwood 8"	
Priority 2	122	boxelder	14	Poor	Prune	Prune top out to make safe	In naturalized area, could fall into walking path
Priority 2	121	sycamore, American	27	Fair	Prune	Dead 7" limb	
Priority 2	111	oak, northern red	29	Fair	Prune	Deadwood - 5" & 7" dead limbs	
Priority 2	110	oak, pin	10	Fair	Prune	Deadwood - 5" & 9" dead limbs	
Priority 2	105	oak, pin	29	Fair	Prune	Deadwood - 2 6" dead limbs	
Priority 2	104	oak, pin	34	Fair	Prune	Deadwood - 3 6-9" dead limbs	
Priority 2	103	oak, pin	34	Fair	Prune	Deadwood - 4" dead limbs	
Priority 2	102	oak, pin	36	Fair	Prune	Deadwood - 5" dead limbs	
Priority 2	101	oak, pin	35	Fair	Prune	Deadwood - 4 6-9" dead limbs	
Priority 2	40	oak, pin	40	Fair	Prune	Deadwood 8" - 3 large dead limbs	
Priority 2	39	oak, pin	41	Fair	Prune	Deadwood 10"	
Priority 2	38	oak, pin	42	Fair	Prune	Deadwood 8"	
Priority 2	7	cottonwood	49	Fair	Prune	deadwood 8"	
Priority 2	5	cottonwood	57	Fair	Prune	Deadwood 6"	

Priority 2	4	cottonwood	48	Fair	Prune, Cyclical Program Prune	Deadwood 4"	
Priority 2	12	catalpa	48	Fair	Prune, Priority Need	Deadwood 6" and monitor	Branch dieback, trunk damage, likely root damage from extra soil
Priority 2	16	elm, Siberian	52	Fair	Prune, Remove Vines	Deadwood 14"	
Priority 2	64	redbud	12	Poor	Removal		

Appendix C: Risk Assessment Limitations, Disclaimers, and Limited Warranty Statement

Limitations & Disclaimers. The risk assessments, analysis, opinions, and conclusion are limited only by the reported assumptions and limiting conditions, and they are Urban Canopy Works staff's personal, unbiased professional analysis, opinions, and conclusions. The risk assessments were performed within the limitations specified below.

1. Urban Canopy Works performed the Level 2 risk assessments to a reasonable degree of scientific certainty in conformity with ANSI, ISA, and other industry standards.
2. Tree risk assessments are limited by the ability to predict natural processes (decay progression, response growth, weather) as well as human action (changes in occupancy rates, construction).
3. Tree risk assessment considers only known targets and reasonably visible or detectable tree conditions.
4. Tree risk assessment reports are a snapshot in time for the tree being observed. Industry standards accept risk assessment reports as being valid only on the day when the observations were made since weather events, human action, and other factors can result in significant changes in trees and the resulting potential to fail.
5. Many structural defects in biological organisms are internal, and even with the most advanced diagnostic equipment, some defects cannot be observed or detected even by the most experienced professional.
6. The condition of structural defects can change dramatically in short periods of time as a result of environmental and physical influences on a tree.
7. Tree risk assessment reports are an anticipated potential for failure and not a prediction of time to failure. Potential for failure is based on the professional experience of the assessor as a result of their measurements and observations taken on the day of the assessment.
8. The time frame for risk categorization, in this case one [1] year, should not be considered a guarantee period for the risk assessment.
9. Since no documented occupancy rates were provided by Buffalo Trace, the occupancy rates for the sites were determined by the assessor to the best of their ability at the time of the assessment.
10. Risk assessment procedures were selected and applied as appropriate with consideration for what is reasonable and proportionate to the specific conditions and situations of each tree. Each technology and/or test involves some uncertainty and has limitations.
11. Any evaluation of an individual tree or target will not be a precise measurement, but is a qualified estimation.
12. The decision to accept or reject the diagnostic findings and mitigation recommendations of the assessor and to make decisions on the management of a tree as it relates to human safety and property damage is entirely the responsibility of the property manager.
13. Know and understand that this assessment was confined to the designated subject trees, and that the assessment was performed in the interest of facts of the trees without prejudice to or for any other service or any interested party.
14. All data and findings in this report are true and accurate to the best knowledge of Urban Canopy Works.

15. All recommendations for mitigation of risk are submitted as professional opinions of the assessor based on professional experience.

Limited Warranty. Urban Canopy Works, LLC (“UCW”) provides this Limited Warranty as a condition of providing the services outlined in the agreement between the parties, including any bids, orders, contracts, or understandings between the parties (collectively the “Services”).

UCW provides the Services utilizing applicable standard industry practices and based on the facts and conditions known at the point in time the Services are performed. Facts and conditions related to the subject of the Services may change over time. UCW cannot predict or determine developments concerning the subject of the Services and will not be liable for any developments, changes, or conditions that occur, including, but not limited to, decay or damage by the elements, persons or implements, insect infestation, deterioration, conditions not discoverable using the means and methods used to perform the Services, or acts of God or nature or otherwise. If a visual inspection is utilized, visual inspection does not include aerial or subterranean inspection, testing, or analysis. UCW will not be liable for the discovery or identification of non-visually observable, latent, dormant, or hidden conditions or hazards, and does not guarantee that items will be healthy or safe under all circumstances or for a specified period of time, or that remedial treatments will remedy a defect or condition.

UCW may have reviewed publicly available or other third-party records or conducted interviews, and has assumed the genuineness of such documents and statements. UCW disclaims any liability for errors, omissions, or inaccuracies resulting from or contained in any information obtained from any third-party or publicly available source.

To the extent permitted by law, UCW does not make and expressly disclaims any warranties or representations of any kind, express or implied, with respect to completeness, accuracy, or current nature of the information contained in the Services or the reports or findings resulting therefrom beyond that expressly contracted for by UCW in the agreements between the parties, including but not limited to, performing diagnosis or identifying hazards or conditions not within the scope of the Services or not readily discoverable using applicable standard industry practices. UCW disclaims any warranty of fitness for any particular purpose. UCW’s warranty is limited to one year from the date Services are performed. UCW’s liability for any claim, damage, or loss, whether direct, indirect, special, consequential, or otherwise, caused by or related to the Services shall be limited to the Services expressly contracted to be performed by UCW.