

Winter 2016-2017

Arbor Hills Condominium Association

## **RE: Street Tree Pruning at Arbor Hills - methodology and benefits**

*Dear AHCA Board of Directors, Members and Management,*

This letter pertains to the need to address deferred pruning needs on the street tree resource at Arbor Hills. Street trees refer to those trees located between the curb and the sidewalk, or at the curb edge for those locations where there are no sidewalks.

I did conduct a general inspection of your street trees on Friday, December 10, 2016, and my professional advice and recommendations for pruning are based on this recent survey of tree conditions.

### **Tree Species Composition and General Health**

First and foremost, I'm happy to report that overall, your street trees are well established, healthy, and growing at vigorous rates, which is expected of young trees that are properly selected and installed. In general, trunk diameters range from 4" to 10" DBH (diameter at breast height). You also have a good variety of tree species, although the diversity would be more ideal if we had greater numbers of those tree species that are less well represented. We can address and improve species distribution as individual trees die, incur damage or are missing and eventually need to be replaced.

Currently, I noted over a dozen different street tree species. I recall many of these as the initial plantings of some of the streets during my tenure as city forester. To my knowledge, all are designated as private streets, meaning that there is no public right-of-way. As such, the regulations that appear in the **city code** for Chapter 40 (**tree ordinance**) are not enforceable by the City, although **many of these regulations have merit to maintaining a safe, healthy urban tree resource**. I will touch on this a little later.

The City of Ann Arbor has prided itself on using a modern street tree inventory program, which not only helps with maintenance decisions and management planning, but to identify neighborhoods where species diversity is lacking. Due to past city involvement in the initial tree installations at Arbor Hills, I'm happy to report we have **over a dozen species represented on the streets at Arbor Hills**. We've learned from the era of Dutch Elm Disease, and more recently, Emerald Ash Borer, that the creation of a monoculture, where the tree population is represented by only a few species, has inherent risks. When confronted with an insect or disease outbreak that favors and seeks out those particular species, epidemics can arise with disastrous results. Today,

a general guide for urban forest resource planning is to have not more than 10% of your total tree resource in one genus (like maple, oak, ash, etc.) and not to have more than 5% represented by one species (like sugar maple, white oak, green ash, etc.).

In the case of **Arbor Hills**, the predominant **street trees species** are **Red Maple** (*Acer rubrum*), **Freeman Maple** (*Acer rubrum* x *saccharinum* – a red maple x silver maple hybrid) and **Callery Pear** (*Pyrus calleryana*), like the Bradford and Chanticleer cultivars. The remainder are **Tulip Tree** (*Liriodendron tulipifera*), **Sugar Maple** (*Acer saccharum*), **Little-Leaf Linden** (*Tilia cordata*), **Japanese Zelkova** (*Zelkova serrulata*), **Bur Oak** (*Quercus macrocarpa*), **Pin Oak** (*Quercus palustris*), **Norway Maple** (*Acer platanoides*), **Japanese Tree Lilac** (*Syringa reticulata*), **Flowering Cherry** (*Prunus* spp.) and **Flowering Crabapple** (*Malus* spp.). That's a healthy blend of shade and ornamental (flowering) tree species. The only challenge is that after the maples and pears, the remaining species are only represented by a handful of specimens.

Again, we can address the need to improve species diversity as trees are removed. For now, **most of the trees are healthy and vigorous, and are just in need of some pruning to remove low limbs for clearance purposes, remove deadwood (few cases), eliminate double leaders (not many) and otherwise reinforce proper tree form. A few trees need to have sucker growth near their base removed.**

### **Tree Pruning Needs, Types of Pruning and Timing of Pruning**

**By far, the primary street tree pruning need at Arbor Hills is low limb elevation pruning. This is sometimes referred to as “raising” or “clearance” pruning.** When trees are first installed, and for a few growing seasons thereafter, pruning is not recommended unless limbs are broken, damaged, or corrections are needed (cross-over, rubbing limbs, double leaders, etc.). When trees are in this juvenile establishment period, leaving the crown intact allows the tree to provide more carbohydrates to restore root systems compromised the transplanting process, and early crown development.

Once they are established, as the AHCA's are, we can **prune to ensure proper establishment, ideal form and improved vigor. With low limb elevation pruning, we help ensure safe clearance for vehicles and pedestrians. It also results in improved sight distance for drives and intersections, not to mention facilitating snow removal, deliveries and refuse/recycling pick ups without the unintentional but serious tree crown damage that can result from obstructing limbs.**

These benefits are not the primary goal of low limb elevation pruning. **The real benefit is one of improved tree growth and performance. When you remove lower limbs on trees, there is the direct benefit that the water, minerals and nutrients required to fuel photosynthetic growth become focused on nourishing and encouraging new growth and reinforcing the apical dominance of primary branch leaders.**

I mentioned earlier that the concern of the city enforcing its Chapter 40 street tree

clearance requirement of 8' over sidewalks and 12' over streets is a moot point on privately owned streets. Chapter 40 pertains to city maintained public street rights-of-ways. Even if it were the standard Arbor Hills should follow, bear in mind that this limb elevation requirement pertains to mature trees. Certainly a 60-foot tall red oak could be cleared to those specifications; we would never enforce that on newly installed and juvenile trees as that would cause radical growth imbalances.

For instance, **it is never recommended that you remove more than 25-30% of a tree's entire crown in a single growing season.** Root systems would suffer by having their source of carbs and sugars suddenly reduced. Before long roots decline and cannot uptake the requisite amount of water and nutrients needed for photosynthesis. Then the crown of the tree begins to produce fewer leaves, and we've set up the tree to fail by upsetting the root/crown balance. In fact, to be safe, **I recommend not removing more than 20% of the visual crown area in a single growing season.** If you need to remove more to achieve the desired clearance, you should phase that work over two or three growing seasons to avoid such negative impacts. This is especially true on trees that have never been pruned, which is the case for most trees in ACHA.

Each individual tree species, and sometimes the individual tree, has a different natural form and growth rate. Trees with an ascending branch habit will need less elevation pruning than those with descending limbs or weeping growth habits.

**During the first pruning cycle, I recommend only raising the low limbs on your street trees to a height of 6 to 6.5 feet. Keep the 20% figure in mind – and take a couple seasons of pruning to achieve to desired clearance, if greater. Once the initial round of pruning is done, plan to prune every 5 to 7 years.** This not only ensures that trees are not pruned too severely, but that limbs that need to be removed are not so substantial as to leave large pruning scars that take longer to close, or detract from overall crown balance and aesthetics.

We certainly would rather have our trees professionally and intelligently pruned, as opposed to have them damaged indiscriminately by delivery vans or garbage trucks.

A few notes on the tree species themselves. As you have a high number of faster growing Red and Freeman maples, these will be easier to get to desired heights merely due to their growth rate. With your next most dominant tree, the **Callery pears**, more discretion will be needed. These **are characteristically lower branched trees, and to raise some of them even to the six-foot height may require a couple of seasons.** The low branching axis of this species means that taking off larger limbs back to the main trunk could result in a large portion of the crown being removed. It may be better to leave these larger limbs as structural branches and prune secondary branches growing from them rather than remove the entire limb. We should not sacrifice the form or health of the tree just to meet a clearance goal.

After low limb clearance pruning is completed, pruning should address **deadwood**.

Such wood is both unsightly AND often harbors canker or decay fungi. On larger trees, it poses a public safety hazard. Low “**basal**” **suckers** - growing along or from the base of the tree - should be removed as they are aggressive and take up energy that should be directed elsewhere. They also interfere with proper growth habits for tree growth.

One last pruning comment: a few of the trees have developed **double leaders**, which is the existence of two or more co-dominant stems that compete to be the tree’s primary leader. It’s much better to eliminate the less vigorous leader in such cases to encourage a strong single leader while trees are still young. To do this with older or mature trees would be disfiguring, and perhaps expose the tree to sunscald, as stems that were growing in relative shade for years are suddenly now in full sun.

**Timing is not terribly critical with pruning.** Some prefer doing low limb elevation pruning during the dormant season. Although it’s colder, there are no leaves, which means not only less brush to dispose of, but we can clearly see the overall form of the tree, which makes reinforcing its natural form much easier. An added benefit is usually better contractor pricing, as many firms look for such work to help get through these lean months until business picks up when the weather improves. With maples, due to their positive spring sap flow, pruning in late winter-early spring results in sap weeping or dripping from freshly cut limbs. Not harmful to the tree, but certainly a nuisance that can alarm residents who think their tree is “bleeding.” With spring flowering trees, which produce their flower buds in the previous fall, winter pruning eliminates some of these buds, reducing spring flower displays. This isn’t a concern when you’re removing limbs you need to clear anyway; if so, prune these trees in the summer - after blooms have finished and before next year’s flower buds are set. AHCA has few oaks; but with Oak Wilt disease now in SE Michigan, **avoid pruning oaks between April and October.**

I would be happy to consult with you and work with any contractor(s) to ensure that tree pruning is done properly, safely and so that pruning targets are met. Once the community’s been through a pruning cycle, maintaining the trees through periodic cyclical pruning will become more routine. The reason it’s a challenge at first is that pruning has not previously been done in a systematic, regular manner.

I hope you find this information helpful. Let me know if I can assist as you a pruning program is adopted and implemented by homeowners and the Association for the street trees of Arbor Hills.

Sincerely,

***Paul Bairley***

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