Tree Inventory Update and Planting Recommendations: Blue Ridge

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E522 | Spring 2017

4-24-17

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Introduction

As our case study we chose to conduct a street tree inventory of the Blue Ridge neighborhood. The intent of this inventory was to inform future management decisions made by individual citizens, the Blue Ridge Neighborhood Association, and the Bloomington city forester. In this paper we will present and discuss our findings and offer some recommendations for future management of Blue Ridge's street trees.

Site Introduction

Blue Ridge History - Blue Ridge is a neighborhood on the north side of Bloomington, Indiana, west of Lake Griffy, and east of Walnut Street (Figure 1). The neighborhood of Blue Ridge was initially developed in the early 1960s on land which previously had been used for cattle and pig farming. The neighborhood was developed in five distinct waves (additions), the last of which completed in the summer of 1984. These waves of development were all subject to regulations designed to maintain the natural beauty of the site and to ensure the aesthetic appeal of the developed properties (Blue Ridge Neighborhood). Several of these regulations, such as the banning of overhead power lines and establishment of generous tree lawns, have made the neighborhood a particularly attractive place for street trees. Our experience with the neighborhood association revealed a well-organized group of citizens who were interested in our activities in the neighborhood (although not universally supportive).

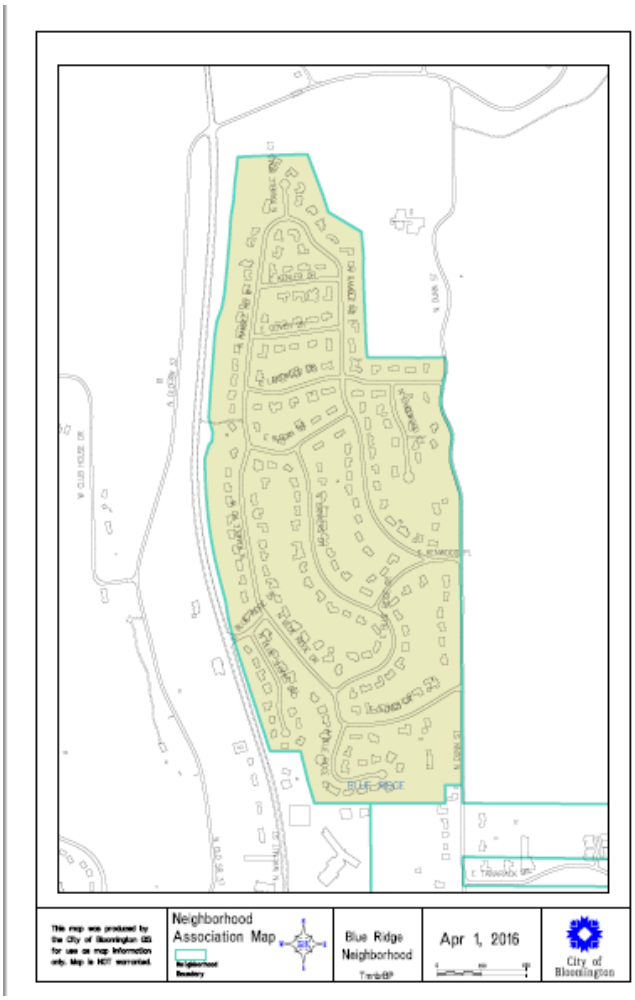

Figure 1. A map of the Blue Ridge Neighborhood (City of Bloomington).

Past Inventories - Previous inventories conducted in both 2001 and 2007 were made available to our team and were used as templates for our own inventory. However, the 2007 inventory only included about half of the street trees actually present in the neighborhood. Additionally, these trees were not randomly sampled but seem to be limited to particular streets, while other streets (most notably Ramble Road which circles the entire neighborhood) were neglected entirely. This makes it difficult to make comments about the changing nature of the street tree community in Blue Ridge. That being said Figure 2 displays some baseline information about street tree health in 2007.

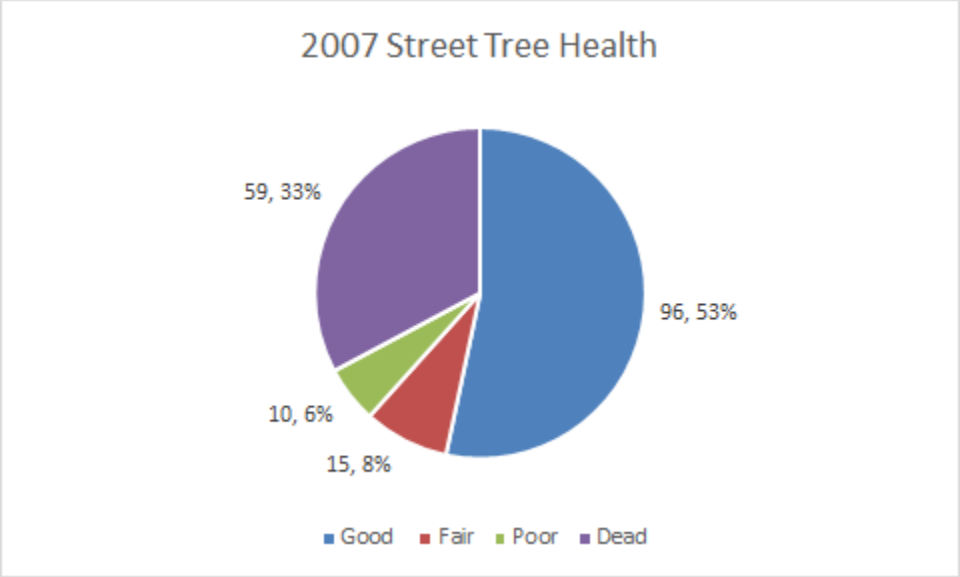

Figure 2. Street tree health in Blue Ridge neighborhood as assessed in 2007.

This inventory notably revealed a significant number of dead street trees. Interestingly enough, most living trees inventoried were determined to be in good health.

Materials and methods

Before beginning the street tree inventory, a survey was sent out to residents via email allowing them to express any concerns they may have. The surveys were voluntary response, and we received only nine responses. To conduct the street tree survey, teams walked the neighborhood recording tree species, DBH, tree lawn size, condition, maintenance, and address. Tree DBH was measured using tree and log scale sticks. Data was recorded using the 2007 inventory as a template and this data was then recorded and analyzed in Excel.

Street Tree Inventory Results

The inventory revealed a relatively diverse and healthy community of street trees. Many of these trees flower and therefore make attractive street trees. Maples and Dogwoods comprised the largest portions of the street trees in the neighborhood but no other species made up a greater than 10% portion of the canopy. However, Callery Pear represent the third largest portion of the street trees in Blue Ridge (Figure 3).

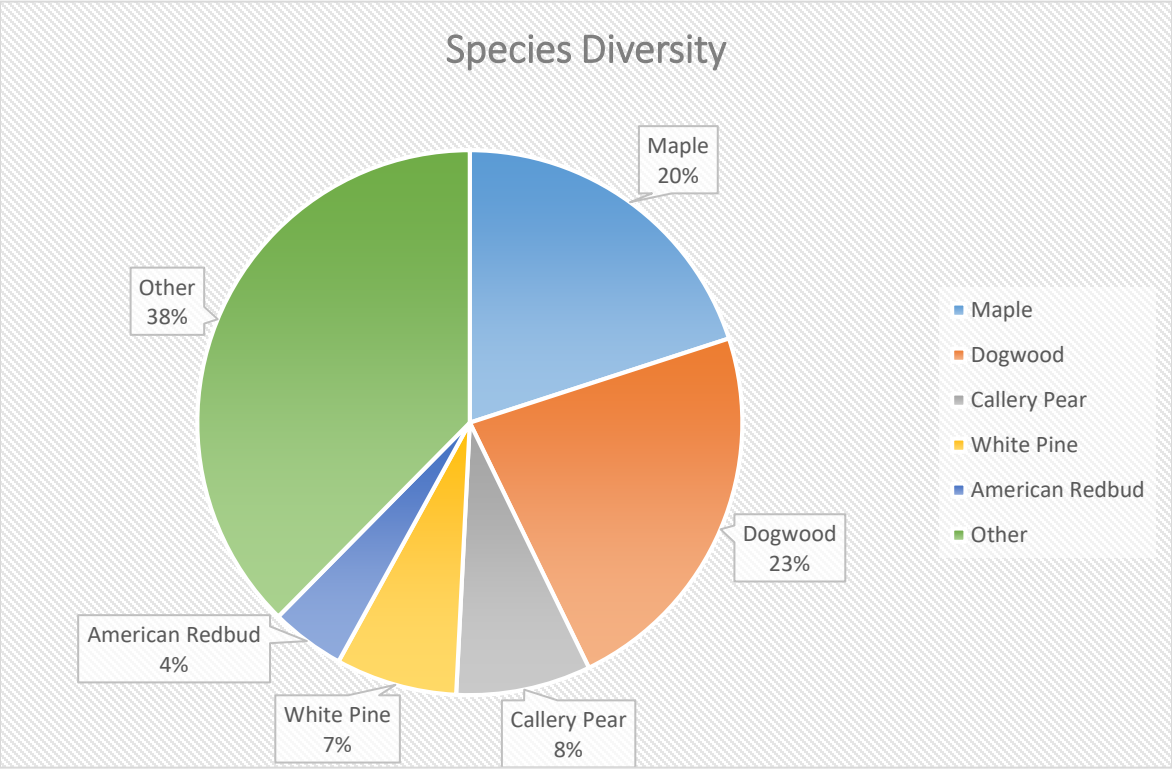

Figure 3. Street tree species summary.

Since Callery Pears are becoming less desirable as urban plantings, because of their invasiveness and tendency to split, the city and neighborhood association may consider removing and replacing these trees (Vincent). Although, many of the Callery pear trees in the neighborhood are

already quite large in size class, and will likely die off naturally. In all there were over 40 different species identified and we hope that future managers will preserve or even increase the level of diversity represented in the neighborhood's street tree population.

Figure 4. A summary of current tree health.

The street trees in Blue Ridge appeared to be in remarkably good health. Less than 1/3 of trees appeared to be in Fair, Poor or Dead condition (Figure 4). This is interesting to compare with the previous inventory which contained a much larger share of dead trees. Most of these trees seem to have been removed and replaced by planting sites.

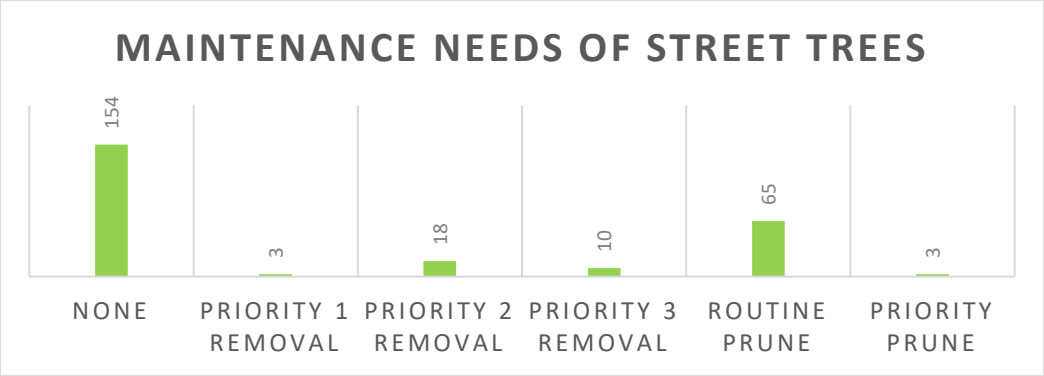

Figure 5. Maintenance recommendations for Blue Ridge street trees.

Most maintenance recommendations were therefore related to maintenance of otherwise healthy trees rather than removal (There were a handful of trees that may be very hazardous!) (Figure 5). Trees in the neighborhood displayed a typical age and size class distribution, with many trees growing rather large for street trees (Figure 6). This is likely because the trees are so well maintained and they have a large tree lawn with ample room to grow. This means that management efforts should be focused on maintaining the current canopy and planting new trees. However, it is also possible that the city will soon have many trees to remove in this neighborhood as the community of trees age and senesce. This problem is likely one that is many years down the road considering the excellent health of the current community of street trees.

Figure 6. Size class distribution of Blue Ridge street trees.

Our inventory identified 58 planting sites in the neighborhood, but this is likely an underestimate. Additionally, in many places the tree lawn width is quite generous and tree growth is almost universally uninhibited by overhead wires. This allows for large species with wide, attractive canopies to be planted in many areas of this neighborhood. However, community support for our planting campaign seemed somewhat mixed. Most residents opposed to new plantings near their properties cited anxieties about the effect of trees on the neighborhood's ageing sewer lines. Residents who were enthusiastic about new plantings seemed to favor flowering trees and one resident even went as far as to purchase several horse chestnuts from the city forester to be planted on her property when it was determined the right-of-way near her house was unsuitable for a tree.

Conclusions

There are many different species types in the Blue Ridge Neighborhood, but a vast majority of the trees fall into only two types. We recommend that more emphasis be placed on species diversity and avoiding maples and Callery Pears in future plantings. We also advise following routine care (mainly pruning) for these trees while the focus shifts to planting more trees in the many open planting sites. It is essential that the older trees be maintained so that the neighborhood can receive the most benefits possible from their trees. Additionally, the continued planting of new trees in every available planting site will ensure that the neighborhood will have a well-rounded group of size classes and maximize their benefit potential. Following these results, our recommendations for maintenance of these street trees can be summarized in three goals:

1. Plant more trees in the available planting sites
2. Avoid planting species like Maple and Callery Pear, focus on maintaining or adding diversity
3. Continue routine maintenance on existing street trees, especially trees in dangerous or poor condition, and if possible continue to update the inventory.

Literature cited

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