Ms. Kristen Chin, Project Manager                             April 16, 2018
Jamaica Plain Neighborhood Development Corp.
31 Germania Street
Jamaica Plain, MA 02130

RE: Tree Assessment and Preservation Recommendations Report
71-85 Call Street, Jamaica Plain

Dear Kristen,

This report is a follow up to our meeting and my inspection and assessment of the trees in the building lot at 71-85 Call Street in Jamaica Plain. As we discussed the Jamaica Plain Neighborhood Development Corp (JPNDC) is proposing to build two multi-family housing units on this lot and there is a desire by the lot’s abutters to keep several large trees existing on the site.

This inspection was performed to assess the health and structural integrity of the trees and what impacts the new construction may have on them. The following report contains a summary of my findings, photographs of the site and recommendations for further action.

Thank you for the opportunity to assist the JPNDC with this project. Please don’t hesitate to contact me if you have any questions or need additional services.

Best regards,

David Hawkins, Consulting Arborist
Urban Forestry Solutions, Inc.
Introduction

Two multifamily housing units, a driveway and 6 parking areas are proposed for a partially wooded lot at the corner of Call Street and Carolina Street, Jamaica Plain. The abutting property owners have expressed a desire to protect and preserve a stand of large trees that may be in close proximity to one of the buildings, driveway and two parking spots. Urban Forestry Solutions, Inc. was contracted by the Jamaica Plain Neighborhood Development Corporation (JPNDC) to:

- Inspect and assess the stand of trees for overall health and structure.
- Determine the impact of the construction and ascertain whether the trees can be preserved and protected according to the current building plan.
- Recommend what measure would be necessary to protect the trees during and after construction (if applicable).

Observations

The building lot is approximately 14,000 square feet of which about 5000 square feet is unmaintained woodland containing a variety of species and sizes of naturally seeded trees, shrubs and vines. The most prominent trees are Silver Maple (Acer saccharinum), Red Maple (Acer rubrum), Poplar (Populus spp.) Norway Maple (Acer plantanoides) American Elm (Ulmus americana) and Black Locust (Robinia pseudoacacia). Smaller understory vegetation primarily consists of maple, ash, locust and elm saplings along with Buckthorn (Rhamnus spp.) Honeysuckle (Lonicera japonica), Wild Grape (Vitis spp.) and Oriental Bittersweet (Celastrus orbiculatus).

The trees in question are a grouping of three trees; two Silver Maples - one measuring 41 inches trunk diameter (measured at 4.5 feet), the other 22 inches. The third is a 21-inch diameter American Elm. The 41-inch maple is about 75 to 80 feet high and the most dominant of the three with the smaller maple and elm growing under its canopy. These trees are between 50 and 60 feet tall and have a defined lean away from the larger maple. The elm has about a 12 degree lean towards and over utility lines and the property abutting to the west. The other smaller maple has a lean of around 8 degrees to the northwest. It also appears about one third of the crown has broken off – presumably during a storm event. All three trees appeared to be healthy and, except for the lean, structurally sound. It is my understanding that all the other trees surrounding the three subject trees will be removed (stumps included) and excavated to accommodate the buildings and driveway or regraded and then landscaped.
The outlined area represents approximately 5000 square feet of unmaintained woodland. The circled area is the general location of the 3 large trees.

Site Photographs (taken 4/3/18)

View of the building lot looking southwest. Circled are the subject trees
View of the 3 trees looking north from within the woodland

View looking west to abutting property and in the direction of the maple and elm’s lean
Discussion and Recommendations

Retaining trees on this site may be better served by focusing on the large silver maple rather than the smaller maple and elm. Both trees have a significant lean and are encroaching toward the abutting property and utility lines. This lean is due to being suppressed by the larger maple and seeking sunlight to the west. If these trees were to fail, they would hit the wires and possibly some structures on the abutting property. Failure would most likely occur during severe weather events and once the surrounding trees are cleared, they would be more exposed to the weather possibly making more susceptible to failure. Removal of these trees would also reduce competition for water and nutrients for the larger maple.

Retaining and protection the large silver maple is dependent on protecting its root system from damage and loss due to construction. According to the current building plan, this may not be possible. The driveway and two western most parking areas are 6 to 8 feet from the trunk and the building’s edge is about 15 feet from the trunk. Both distances will likely be less to accommodate excavation and equipment.

The illustration to the left shows the maple as marked on the plan (blue circle) and the maximum distances to the driveway and building (green line).

The red circle indicates the estimated critical root zone, or the area of undisturbed soil needed to sustain the tree – in this case a 25 to 30 feet radius from the trunk. The actual root system most likely extends well beyond this especially to the east where roots could be 50 or more feet from the trunk.

Industry standards for protecting trees during construction recommend 1 to 1.5 feet of radii per inch caliper. In this case that would amount to 40 to 60 feet.
Other concerns for protecting and preserving this tree during construction is the clearing and grubbing process for the other trees on the site. Excavation of the stumps and regrading the area will result in damage or loss of more of the root system, especially in the southwest portion of the property that will be re-landscaped. Due to the lot’s limited space, this area would also be the most likely spot for a laydown area for equipment and materials storage – also detrimental to tree roots.

As reflected on the Landscape Plan L-100 on the previous page, the building, driveway and parking space construction will result in an estimated 60 to 75 percent root loss. The remaining root system in the southwest portion to be landscaped could be damage or lost due to the clearing, grubbing and regrading process. The location of the driveway near the tree’s trunk will likely require the loss or damage to the large support roots found close to the trunk. Loss of these may compromise the structural integrity of the tree making it more prone to uprooting – especially once the surrounding trees are removed, and during high wind/rain events1. At the very least, this amount of root loss will result in a significant decline in health – most likely ending up with the tree dying.

Should the plan be adjusted to accommodate the tree, I would recommend the following tree protection measures:

1. Establish a fenced off tree protection zone (TPZ) a radius of 30 feet from the trunk. Within this zone, stumps from removed trees should be ground out rather than excavated. The grade within the TPZ should not be changed and a 3 to 4-inch layer wood chip mulch should be installed within the fence line. Equipment and material storage should be prohibited inside TPZ.

2. Roots outside the TPZ should be preserved if possible. Any roots within the excavation zone for the building and driveway/parking area should be excavated with an air excavation tool and pruned cleanly at the edge of disturbance.

3. Apply a low nitrogen, root promoting liquid fertilizer in all areas where roots will be retained to help compensate for root loss. Set up a watering schedule for dry periods.

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1 The loss of the surrounding trees will eliminate any buffer to winds they provided and result in changing wind patterns and more saturated soil during heavy rain events.
Conclusion

The 41-inch silver maple is a large tree on a relatively small building site. If retained and protected, it would be the feature tree on the site. However, silver maples are, by nature a fast growing and weak wooded tree that is prone to branch and limb breakage during storms. It is important to consider that when designing useable spaces near or under them. They are also not drought tolerance and have a poor to moderate tolerance to root loss and damage.²

In summary, it is unlikely this tree will survive the construction as planned. Even if the plan is altered enough to accommodate the above recommended TPZ, root loss and damage will occur, and the tree could be affected health wise or structurally.

Disclaimer

By the nature or their size, weight and miscellaneous structure, constant exposure to the weather and the elements, susceptibility to insect’s pest and decay organisms, use as homes to birds and animals and other reasons, trees always pose an inherent degree of hazard and risk from breakage, failure and other causes and conditions.

Recommendations made by Urban Forestry Solutions, Inc. are intended to minimize, reduce or eliminate hazardous conditions associated with trees. However there is not, and can never be, any guarantee or certainty that these recommendations will totally correct unsafe conditions or prevent failure or breakage of a tree, or that conditions will not change.

The recommendations carried out as stated, should reduce the risk but they cannot completely eliminate it (except when the tree is removed), especially in the event of future growth, further deterioration, subsequent insect attacks, extreme weather conditions, eternal factors, (lightning strikes, fallen objects, vehicular damage, act.), storms or other acts of God or man.
Certification

I certify the statements in this report are, to the best of my knowledge, true, accurate and represent my professional opinion.

Date  April 16, 2018

David C. Hawkins, Consulting Arborist

Certified Arborist: Mass. Arborists Association MCA#1425

International Society of Arboriculture Board Certified Master Arborist ISA# NE-0541-B

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Tree Risk Assessment Qualification (TRAQ) International Society of Arboriculture March; 2014