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August 9, 2016

Planning Dept.
City of Lake Forest Park
17425 Ballinger Way NE
Lake Forest Park, WA 98155

Re: Arborist Review Tree Permit #2016-ARP-0003_Baptie, Review and Recommendations
Site: Wellington Hills Construction property, 3580 NE 162 St, Lake Forest Park, WA 98155

The tree removal application was checked for compliance with the standards and requirements pursuant to Chapter 16.14 LFPMC. I conducted my original site and tree inspections on February 4, 2016. On August 9th, I met with Ken Baptise, on site, to go over revisions to the Site Plan and discuss changes to the proposed tree removal and retention plan. Joining us was Fred Gessner, representative for the local home owners association and an adjacent resident to the subject lot. This report outlines my inspection and includes my findings, conclusions, and recommendations.

Proposed Activity

The proposed activity is the demolition of a tennis court slab and an existing shed and new construction for a single family residence. There are a total of eight (8) trees proposed or recommended for removal to allow the project to be completed as planned, refer to the Site Plans included with the tree removal application and tree locations shown on *Appendix A: 2013 Aerial Site Photo*.

Methods

I conducted my tree inspection and evaluation for the trees following the protocol of the International Society of Arboriculture (ISA) for Visual Tree Assessment (VTA) that employs a visual and non invasive inspection of the overall health and external condition of each tree and site conditions. I also conducted a basic level tree risk assessment, adhering to tree care industry standards, protocols and practices set by the American National Standards Institute (ANSI), and the International Society of Arboriculture (ISA), that employs a 360-degree, ground- based detailed visual and non-invasive inspection of a tree, including tree crown, trunk, trunk flare, above ground roots and site conditions around the tree in relation to targets. The time frame for

tree risk assessments, the period in which estimating the likelihood of failure, is generally 1-5 years, unless otherwise noted. The time frame for risk categorization should not be considered a guarantee period for the risk assessment.

Significant trees, (a tree that is 6.0" in diameter at breast height (DBH), 4.5 feet above grade), on the site were inspected and assessed for species, size, health and structural condition, critical root zone, and drip line, see Attachment: *Table of Trees*.

Inspected trees were tagged with aluminum tree tags stapled at four to six feet above grade. Trees are numbered #1 through #15, beginning with Tree #1, a 23" DBH Douglas -fir, located in the south side of the lot, bordering along NE 162 St, and continuing west around the lot ending with Tree #15, located along the east side of the lot. Tree locations are shown on the Site Plan and Appendix A: *2013 Aerial Site Photo*.

All trees proposed for retention were thoroughly inspected and evaluated for their suitability to tolerate the expected construction impacts and for their overall worthiness for long term retention.

Offsite trees on adjacent properties that are within five feet of the property line are described and listed, by letters A-D, in the Attachment: *Table of Trees*. They are not tagged, but their locations are shown on the Appendix A: *2013 Aerial Site Photo*.

Findings

Site

This is an undeveloped single-family residential lot, 12,099 square feet in size. There is a short moderately sloped area in the north end of the lot. The tree canopy coverage goal for this size lot, pursuant to Chapters 16.14.080, is 39 % (4,720 sq. ft.). The current canopy coverage, from trees originating on the lot, is approximately 90% (10,890 sq. ft.), as determined either by collected tree data and/or interpretation of high resolution aerial photography, see Appendix A: *2013 Aerial Site Photo*.

Subject Trees

There are fifteen (15) significant trees that are within the proposed construction area boundary. Eight (8) trees are proposed for removal and seven (7) trees are proposed to retain. There are four (4) offsite trees that could be impacted by construction activities. No construction activities are proposed on the sloped areas north of the construction boundary. See Attachment: *Table of Trees*, for complete inventory and assessment.

The 8 trees proposed for removal are:

- Trees 3, 5, 8, 9, 10, 11 and 12 are located along west side of the lot. The trees are within the construction site and are unsuitable to retain.
- Tree 14, along the east side of the lot, is too close to the construction site to be adequately protected and is unsuitable to retain.

The proposed tree removals will reduce the total tree canopy coverage by approximately 2,200 sq. ft. (18%).

There are 7 trees that have potential to be retained. They are generally in good overall health and condition and would pose low risk to the new residence. They are suitable to tolerate the proposed construction activities, provided the recommended tree protection measures are followed, see Appendix B: *Tree Protection Measures*.

The trees proposed to retain are:

- Trees 1 and 2, located at the south side of the lot, bordering NE 162nd St.
- Trees 4, 6 and 7, located along the west side of the lot, bordering the existing access road.
- Trees 13 and 14, located along the east side of the lot.

Off-site trees

There are 4 offsite trees, located within 5 ft. of the common property line, on the east side of the lot that could be impacted by the construction activities. Construction impacts can be minimized by following the recommended tree protection measures, see Appendix B: *Tree Protection Measures*.

A large Big leaf maple, not part of the original tree inventory, located near the toe of the short slope at the north side of the lot, has nearly completely failed due to extensive butt and trunk decay. There are 2 remaining trunks that are very likely to fail. The tree poses a high risk and should be cut down to a stump and removed from the site, including the failed tree parts and debris, during the clearing and grading phase of the project.

Tree Canopy Replacement

The current tree canopy coverage over the entire lot is approximately 10,890 sq. ft. (90%). The proposed tree removals will reduce tree canopy coverage that originates from trees on the lot by approximately 2,200 sq. ft. The total amount of retained tree canopy coverage, over the lot, will be approximately 8,690 sq. ft. (72%). Therefore, pursuant to Chapters 16.14.080 LFPMC, a Tree Replacement Plan is not required to replace canopy coverage.

Conclusion

The 8 trees proposed for removal will allow the project to go forward safely as planned. The trees that will be retained provide economic and environmental benefits that are an asset to the owner and to the community as a whole and are worthy of the energy required preserving them.

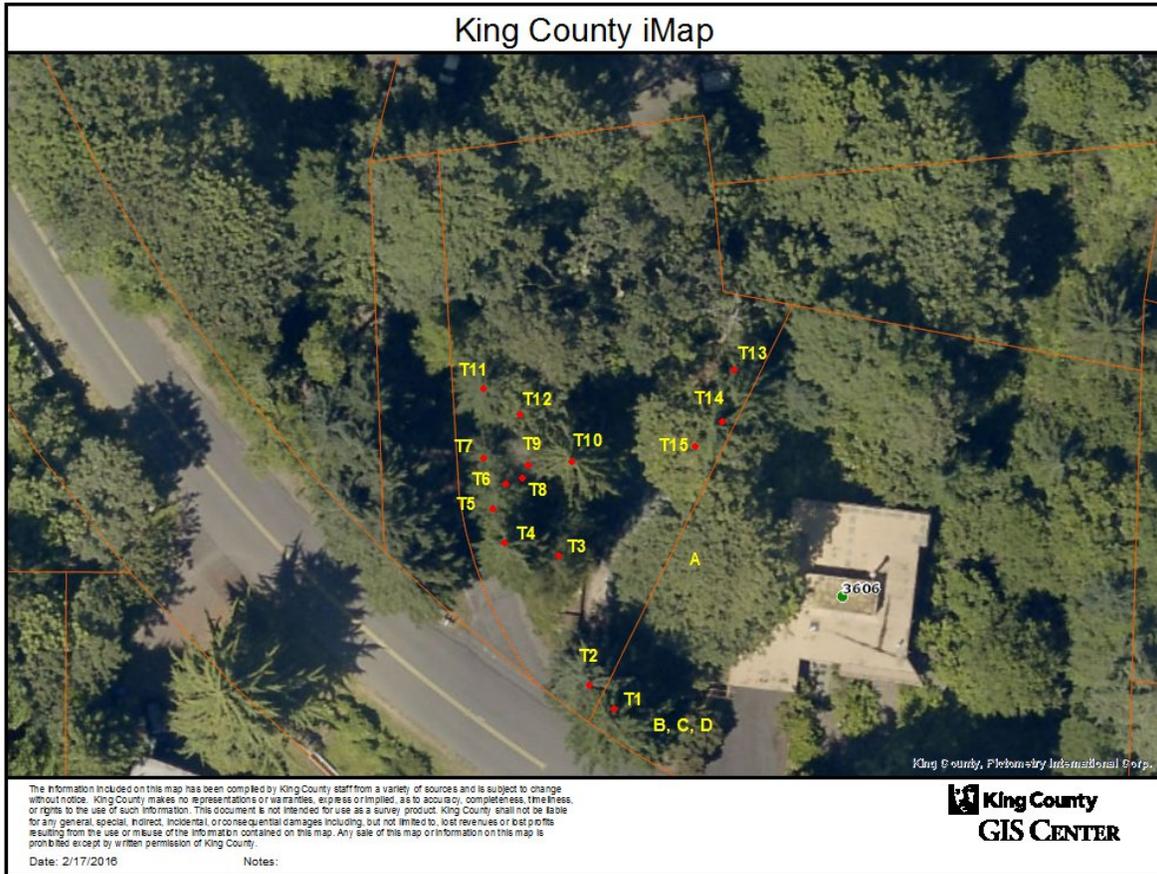
Limitations

Tree risk assessment considers known targets and visible or detectable tree conditions. Unless expressed otherwise, information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection. It must be realized that trees are living organisms and their health and vigor constantly change over time. They are not immune to changes in the site conditions or seasonal variations in the weather. There is no warranty or guarantee expressed or implied that problems or deficiencies of the trees in question may not arise in the future. The report and conclusions expressed herein represent the opinion of Michael Woodbury d/b/a M. Woodbury Consulting Arborist. Please contact me should you have questions regarding this report.

Respectfully submitted,
Michael A. Woodbury

Michael A. Woodbury, Consulting Arborist
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**APPENDIX A: 2013 Aerial Site Photo
3580 NE 162nd St
Lake Forest Park, WA**



Locations of inventoried trees.

Trees proposed for removal:

- T3
- T5
- T8
- T9
- T10
- T11
- T12
- T15

Trees to retain:

- T1
- T2
- T4
- T6
- T7
- T13
- T14

Offsite Trees:

A, B, C & D

APPENDIX B: Tree Protection Measures

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and will possibly die. With proper preparation, often costing little, or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

The following minimum Tree Protection Measures are:

Trees 1, and 2, located at the south side of the lot, bordering NE 162nd St, can be protected with a single circular Tree Protection Fence (TPF).

1. Starting at the common property line on the east side of the lot install a continuous circular TPF, of polyethylene laminar safety fencing material, a minimum of 4 feet high and supported by metal fence posts, spaced approximately 4 feet apart, in a radial arc 15 feet from the trunk of each the tree. Installation of the TPF facing the construction zone shall be as close to the edge of work as feasible, if less than the recommended 15 feet. Grading immediate to these areas should be limited as much as feasible.
2. Place a layer of mulch, woodchips are recommended, at least 4" in depth covering the area within the TPF.
3. The area within the tree protection fencing is the Tree Protection Zone (TPZ) and nothing must be parked or stored within the TPZ; no equipment, vehicles, soil, debris, or construction supplies of any sorts.

Trees 4, 6 and 7, located along the west side of the lot, can be protected with a single continuous semi-circular Tree Protection Fence (TPF).

1. Starting at the access road bordering the west side of the lot, by Tree 4, install a continuous TPF, of polyethylene laminar safety fencing material, a minimum of 4 feet high and supported by metal fence posts spaced approximately 4 feet apart, in a continuous line 15 feet from the trunk of each tree ending at the access road, on north side of Tree 7. Installation of the TPF facing the construction zone shall be as close to the edge of work as feasible, if less than the recommended 15 feet. Grading immediate to these areas should be limited as much as feasible.
2. Place a layer of mulch, woodchips are recommended, at least 4" in depth covering the area within the TPF.
3. The area within the tree protection fencing is the Tree Protection Zone (TPZ) and nothing must be parked or stored within the TPZ; no equipment, vehicles, soil, debris, or construction supplies of any sorts.

Trees 13 and 14, located along the east side of the lot, can be protected with a single continuous semi-circular Tree Protection Fence (TPF).

1. Starting at the common property line, on the south side of Tree 14, install a continuous TPF, of polyethylene laminar safety fencing material, a minimum of 4 feet high and supported by metal fence posts spaced approximately 4 feet apart, in a continuous line 15

feet from the trunk of each tree ending at common property line on the north side of Tree 13. Installation of the TPF facing the construction zone shall be as close to the edge of work as feasible, if less than the recommended 15 feet. Grading immediate to these areas should be limited as much as feasible.

2. Place a layer of mulch, woodchips are recommended, at least 4" in depth covering the area within the TPF.
3. The area within the tree protection fencing is the Tree Protection Zone (TPZ) and nothing must be parked or stored within the TPZ; no equipment, vehicles, soil, debris, or construction supplies of any sorts

Off Site Trees

Offsite Tree A, located on the common property boundary on the east side of the lot, can be protected with a single semi- circular TPF.

1. Starting at the common property line on the east side of the lot, north of Tree A, install a continuous semi-circular TPF, of polyethylene laminar safety fencing material, a minimum of 4 feet high and supported by metal fence posts, spaced approximately 4 feet apart, in a radial arc 15 feet from the trunk of the tree ending along the common property line on the north side of the tree. Installation of the TPF facing the construction zone shall be as close to the edge of work as feasible, if less than the recommended 15 feet. Grading immediate to these areas should be limited as much as feasible.
2. Place a layer of mulch, woodchips are recommended, at least 4" in depth covering the area within the TPF.
3. The area within the tree protection fencing is the Tree Protection Zone (TPZ) and nothing must be parked or stored within the TPZ; no equipment, vehicles, soil, debris, or construction supplies of any sorts.
4. During excavation within the critical root zone of the tree, roots encountered over 1 inch in diameter can be cleanly cut back to the edge of disturbance using loppers. Roots over 2 inches in diameter shall be cleanly cut with a saws all saw. If pruning is needed for clearance, it should be done by a certified arborist or under his/her supervision. The construction crew should not perform the pruning task.

Offsite Trees B, C, and D, located along the common property boundary on the east side, in the SE corner of the lot, can be included and protected within the TPF installed to protect Tree 1 and Tree 2, as described above.

The Tree Protection Fences need to be clearly marked with the following or similar text in four inch or larger letters:

**“TREE PROTECTION FENCE
DO NOT ENTER THIS AREA
DO NOT PARK OR STORE MATERIALS WITHIN THE PROTECTED AREA”
To report violations call the City of Lake Forest Park, 206-368-5440**

Refer to Figure :1 Tree Protection Fence Diagram.

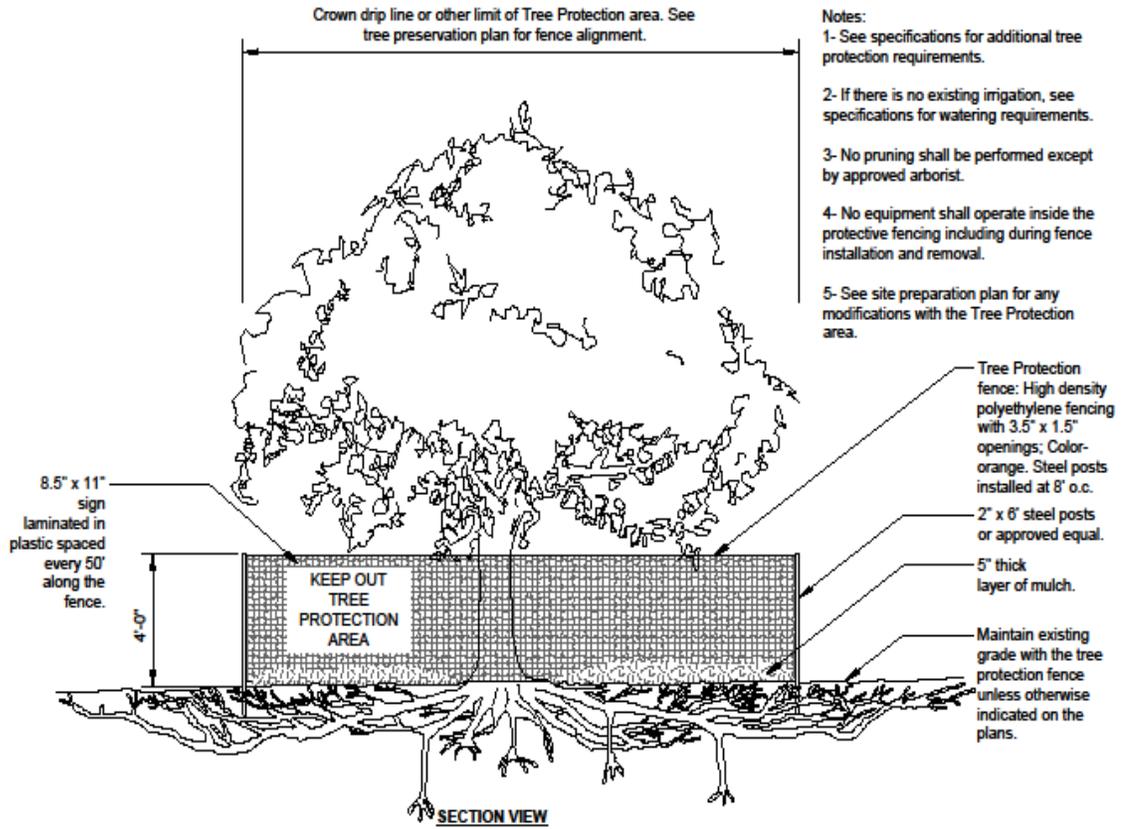
Additional Tree Protection Measures:

- During excavation roots over 1 inch in diameter can be cleanly cut back to the edge of disturbance using loppers. Roots over 2 inches in diameter shall be cleanly cut with a saws all saw.
- If pruning is needed for clearance, it should be done by a certified arborist or under his/her supervision. The construction crew should not perform the pruning task.
- Water the TPZ of the retained trees during the construction period.
- Other appropriate tree protection measures not withstanding to Chapter 16.14.090 LFPMC

Summary Timeline for Tree Protection Measures

1. Project crew to install tree protection fencing.
2. The City arborist to inspect tree protection fences and attend the pre-work meeting with the project and construction representatives.
3. The City arborist to make site visits during tree removal and demolition and during peak construction activities.
4. The City arborist to make a post - construction inspection and recommend post-construction tree maintenance treatments, as needed.

Figure 1: Tree Protection Fence Drawing.



TREE PROTECTION

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