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October 1, 2016

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

Re: Arborist Review Tree Permit #2016-ARP-0047, Review and Recommendations
Site: Kuppens property 17804 28th Ave NE, Lake Forest Park, WA 98155

The tree removal application was checked for compliance with the standards and requirements pursuant to Chapter 16.14 LFPMC. On September 2, I met with Stan and Annabel Kuppens to discuss the proposed activities and tree removals for the property. I conducted my site and tree inspections on September 13. The Site Plan drawings for the proposed project, included with the tree removal application, were used to assist with my task. This report outlines my inspection and includes my findings, conclusions, and recommendations.

Proposed Activity
The proposed activity is the removal from the site of the existing double wide mobile home and construction of a new single family residence, refer to Site Plans. Two (2) trees are proposed for removal to allow the project to be completed as planned. Appendix A: *2015 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.

All 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, canopy spread area and drip line, see *Attachment: Table of Trees*.

All inspected trees were tagged with aluminum tree tags stapled at approximately six feet above grade. Trees are numbered #1 through #8, beginning with Tree #1 located at the SW corner of the lot and continuing around the lot ending with Tree #8. The significant trees are shown on Appendix A: *2015 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.

Findings

Site

The site is a developed single-family residential lot, 8,955 square feet in size. The tree canopy coverage goal for this size lot, pursuant to Chapters 16.14.080, is 28 % (2,507 sq. ft.). The current canopy coverage, from trees originating on the lot, is approximately 40% (3,600 sq. ft.), as determined either by collected tree data and/or interpretation of high resolution aerial photography, see Appendix A: *2015 Aerial Site Photo.*

Subject Trees

There are a total of eight (8) significant trees on the lot. Two trees are proposed for removal and a total of five trees are proposed to retain. See *Attachment: Table of Trees,* for complete inventory and assessment.

Tree 4 and Tree 5 are proposed to remove to allow for the construction of the new driveway. Removal of the 2 trees will reduce the total tree canopy coverage by approximately 1,712 sq. ft. (19%)

There are six trees that have potential to be retained, Trees 1, 2, 3, 6, 7 and 8. 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 retained canopy coverage will be approximately 1,888 sq. ft. (21%).

There are no offsite trees within five feet of the lot that could be impacted by construction activities.

Tree Canopy Replacement

The current tree canopy coverage over the entire lot is approximately 3,600 sq. ft. (40%). Removal of the 2 trees will reduce tree canopy coverage that originates from trees on the lot by approximately 1,712 sq. ft. The total amount of retained tree canopy coverage, over the lot, will

be approximately 1,888 sq. ft. (21%). Therefore, pursuant to Chapters 16.14.080 LFPMC, a Tree Replacement Plan is required to replace canopy coverage. Trees are required to be planted in sufficient numbers to replace 619 sq. ft. of tree canopy to bring canopy coverage up to the canopy goal of 28%, for the size of the lot, in 30 years.

Conclusion
The 2 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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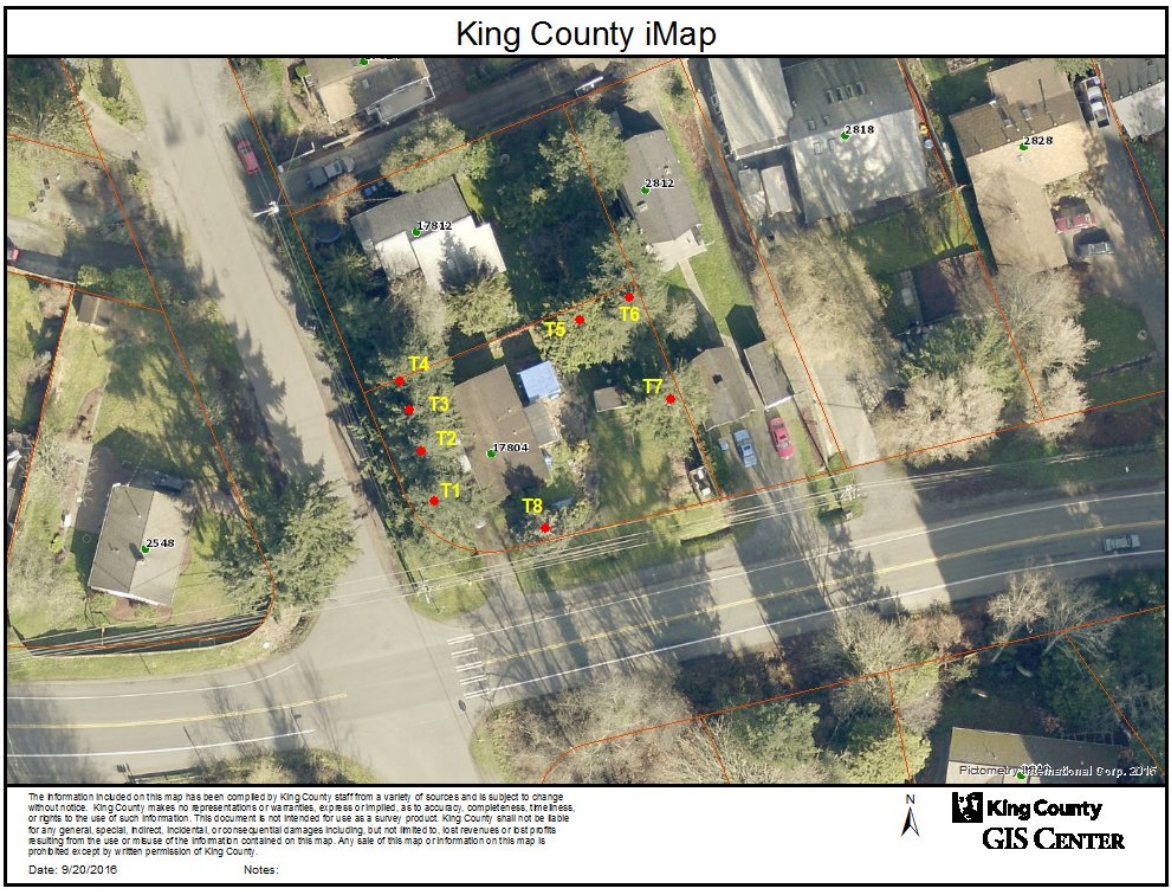
APPENDIX A: 2015 AERIAL SITE PHOTO
17804 28th Ave NE
Lake Forest Park, WA



Locations of the inventoried trees.

Trees proposed for removal:	Trees to retain:
T4	T1
T5	T2
	T3
	T6
	T7
	T8

Attachment: 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, 2, and 3 located along the west side lot, can be protected with a single continuous Tree Protection Fence (TPF).

1. Starting at the SW corner of the lot 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 continues line in front of Trees 1, 2, and 3 at a distance equal to the drip line of each 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 extent of the drip line. 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. The TPF is to remain and be maintained for the entire time of the project.

Trees 6, 7 and 8, can be protected, independently, with individual single circular Tree Protection Fences (TPF).

1. 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 at a distance equal to the extent of the drip line of each 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 extent of the drip line. 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. The TPF is to remain and be maintained for the entire time of the project.

   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.