

Appendix C

ARBORIST REPORT

November 23, 2020 (Revised August 18, 2022)

Mark J. Garey
Tel. 206-446-9090
Via email: cheektowaga@outlook.com

Re: Garey Residence Arborist Report

The Watershed Company Reference Number: 190405

Dear Mark:

We are pleased to present to you the findings of our tree inventory for your property in Lake Forest Park, WA (parcel #4022900497). ISA-Certified Arborist® Jake Robertson visited the property on November 17, 2020 to inventory and assess trees located on the subject parcel.

This report includes a summary of the site visit and regulatory implications related to tree retention and removal. This information will help the project team understand the implications of removal of inventoried trees. The following documents are appended:

- Tree Inventory Table
- Tree Inventory Map

Study Area

The subject property is 11,369 square feet in size and is currently undeveloped with an identified stream and corresponding buffer. A moderate slope is located on the northern and western portion of the parcel, but it has not been identified as an Erosion Hazard on King County iMap. See *Stream Delineation Study* dated June 18, 2019 by The Watershed Company for more information on environmentally critical areas. The subject property is a corner lot with single-family parcels to the south and west, NE 205th St forms the northern border, and 37th Ave NE forms the eastern border. The site is currently zoned for residential use (RS 9600).

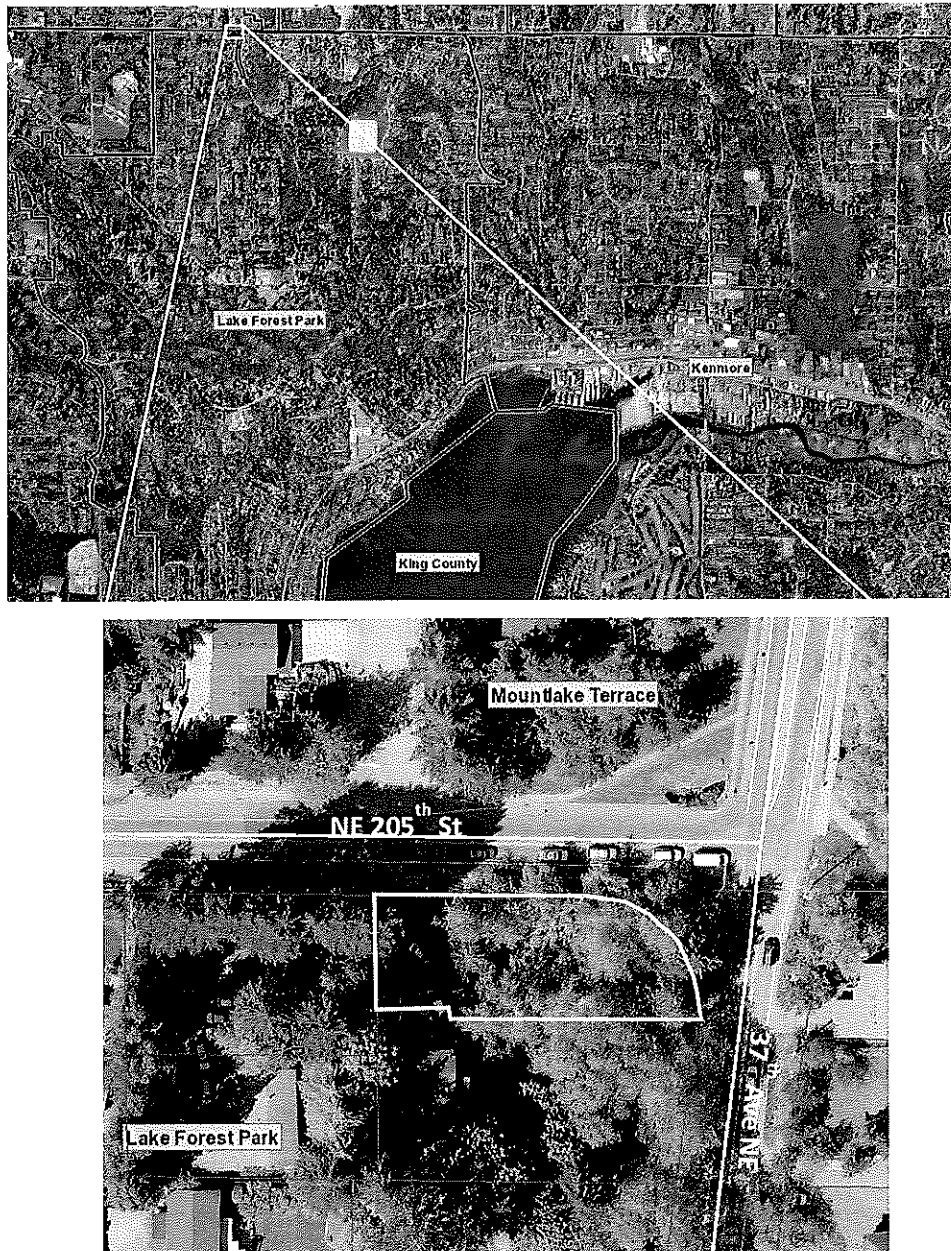


Figure 1. Defined extent of parcel outlined in yellow. Images courtesy of King County iMap.

Methods

Trees within the study area were determined to be significant using the definition in the Lake Forest Park Municipal Code (LFPMC) Chapter 16.14. Lake Forest Park defines a significant tree as any evergreen or deciduous tree, six inches in diameter or greater, measured four feet above existing grade. Dead trees are not classified as significant per LFPMC 16.14.030. For this study,

the health of significant trees was depicted using a rating system of Excellent, Good, Fair, Poor, Severe, or Dead (Table 1).

In general, tree diameter was measured at four feet above the ground surface (diameter at breast height, or "DBH") using a graduated metal logger's DBH tape. Trees with multiple trunks arising from the ground were measured using methodology from The Guide for Plant Appraisal, 10th Edition (Council of Tree & Landscape Appraisers 2018). Briefly, the cross-sectional areas of stems contributing to the canopy were summed and used to generate a singular combined DBH for the tree. The singular DBH number allows for comparison to other single-stemmed trees and for more accurate permitting and tree retention calculations. Lake Forest Park does have additional protection for trees designated as Exceptional or Landmark. There are no Exceptional trees on-site but there is one Landmark tree that measured over 24 inches in diameter.

Trees were not tagged by The Watershed Company, but instead identified #1 - #13 on an annotated PDF (See Appendices). Canopy radius is the average branch length from the trunk as measured with a tape measure; tree height is a visual estimate. A basic Level 1 visual assessment was used to evaluate the health and condition of trees in the study area in accordance with the International Society of Arboriculture (ISA) standards.

Table 1. Assessment of plant condition considers health, structure, and form. Each may be described in rating categories that will be translated into a percent rating. (CTLA 2018)

Rating Category	Condition Components			Percent Rating
	Health	Structure	Form	
Excellent - 1	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation.	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.	81% to 100%
Good - 2	Vigor is normal for species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised.	61% to 80%
Fair - 3	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may compromise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defect. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or intended use. Function and/or aesthetics are compromised.	41% to 60%
Poor - 4	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric/abnormal. Detracts from intended use and/or aesthetics to a significant degree.	21% to 40%
Severe - 5	Poor vigor. Appears dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.	6% to 20%
Dead - 6				0% to 5%

Tree Inventory Results

A total of 13 trees were inventoried and assessed within the study area. Of these 13 trees, two were dead and therefore are not significant, per LFPMP 16.14.030, and not subject to Lake Forest Park regulations. Red alder (*Alnus rubra*) is the most abundant species with eight

individuals, followed by three black cottonwood (*Populus trichocarpa*) trees. The largest inventoried tree is a western red cedar (*Thuja plicata*, Tree #9) with a DBH of 36.3-inches followed by a black cottonwood (Tree #11) with a DBH of 20-inches. A cherry tree (*Prunus sp.*) was also inventoried and assessed on-site. Tree #12 is a black cottonwood with a measured DBH of 36-inches, however, it was found to be dead and therefore not classified as a significant or a landmark tree. A complete table of tree attribute data can be found in *Appendix A - Tree Inventory Table*.

Table 2. Summary of inventoried tree species within the study area.

Tag ID	Scientific Name / Common Name	Trunk DBH (inches)	Significant (Y/N)	Landmark (Y/N)
1	<i>Alnus rubra</i> (Red alder)	12.3	Y	N
2	<i>Alnus rubra</i> (Red alder)	8.6	Y	N
3	<i>Alnus rubra</i> (Red alder)	8.5	Y	N
4	<i>Populus trichocarpa</i> (Black cottonwood)	18.0	N	N
5*	<i>Alnus rubra</i> (Red alder)	19.0	Y	N
6	<i>Alnus rubra</i> (Red alder)	8.6	Y	N
7	<i>Alnus rubra</i> (Red alder)	8.5	Y	N
8	<i>Alnus rubra</i> (Red alder)	14.0	Y	N
9	<i>Thuja plicata</i> (Western red cedar)	36.3	Y	Y
10	<i>Prunus sp.</i> (Cherry sp.)	9.0	Y	N
11	<i>Populus trichocarpa</i> (Black cottonwood)	20.0	Y	N
12	<i>Populus trichocarpa</i> (Black cottonwood)	36.0	N	N
13	<i>Alnus rubra</i> (Red alder)	8.5	Y	N

*Tree #5 has fallen over as of January 2022 and will not be credited as part of this study.

Lake Forest Park Municipal Code Requirements

Lake Forest Park regulates tree activity under LFPMP 16.14 Tree Canopy Preservation and Enhancement. Retention of significant and landmark trees promotes a more diverse, healthier, and greater tree canopy coverage which benefits future generations of residents while protecting and respecting private property rights.

Tree Permit Approval Criteria and Conditions - LFPMC 16.14.070

LFPMC 16.14.070 includes regulations related to tree preservation and enhancement. Due to the inventoried trees being rooted within a critical area buffer, a major tree permit is required.

Development proposals associated with this tree permit must demonstrate prioritization of the requirements listed in LFPMC 16.14.070.D. Proposals shall place a strong emphasis on tree protection and incorporate trees as a site amenity. Per LFPMC, tree retention plans shall demonstrate prioritization of the following:

- i. Existing viable trees in groups or stands;*
- ii. Exceptional trees or other high quality open-grown, windfirm trees;*
- iii. Landmark trees;*
- iv. Trees in critical area buffers, or adjacent to critical area buffers;*
- v. Trees that are interdependent with and therefore critical to the integrity of stands of other protected trees;*
- vi. Other individual trees that will be windfirm, high quality trees if retained;*
- vii. Other trees that provide wildlife or riparian habitat, screening, buffering or other amenities;*
- viii. Trees that help to protect neighbors' trees from windthrow, or other trees within required yard setbacks or on the perimeter; and*
- ix. Trees next to parks or other open space areas.*

Environmentally Critical Areas and Buffers – LFPMC 16.14.080

Removal of trees within critical areas and their buffers is generally prohibited, with specific exceptions outlined under LFPMC 16.14.080.A. Pursuant to LFPMC 16.14.080.A.4, the removal of non-exceptional trees from within critical areas and buffers is allowed when the tree removal is part of an approved action under LFPMC 16.16. If allowed, tree removal is permissible between April 1st and September 30th and proposals must be accompanied by a temporary erosion control plan approved by the administrator.

Additionally, at the request of the administrator, LFPMC 16.14.080.C requires that a qualified professional determine whether or not the tree removal proposed within a critical area buffer is likely to cause damage to the critical area or buffer or reduce its ecological function.

Tree Replacement 16.14.090

The approval of a major tree permit is conditioned upon several factors as outlined in LFPMC 16.14.070.D. The applicant must submit a tree replacement plan demonstrating that replacement trees will, at a minimum, meet applicable canopy coverage goals (see Site Canopy Assessment, below). The City of Lake Forest Park has canopy coverage goals based upon lot size and land use as shown in Table 2: Canopy Coverage Goal in LFPMC 16.14.070.A.

If replacement trees are required, to be compliant with the canopy coverage goal of the city, then trees should be selected from the Approved General Tree List for the City of Lake Forest Park (<https://www.cityofflp.com/239/Tree-List>) and should be evergreen, native species. Invasive trees, as defined by the city in LFP MC 16.14.030 cannot be used as replacement trees. All replacement trees must meet the minimum standards for size and quality according to the current edition of the ANSI Z60.1 standard for nursery stock.

Site Canopy Assessment

Parcel #4022900497 is zoned single-family residential and has an area of 11,369 square feet per the Boundary & Topographic Survey by PLOG Engineering, dated May 22, 2019. Canopy coverage is measured by the percentage of canopy provided by existing trees, or the projected canopy coverage to be provided by newly planted or immature trees. The canopy coverage goal for lots between 10,000 to 15,000 square feet is 39 percent.

Using i-Tree Canopy analysis and taking 30 survey points of the project area, tree canopy cover dominates the site at approximately 90-percent of the total area while the remaining 10-percent is understory vegetation or the driveway for the home located at 3611 NE 205th St.

Impact Assessment

Per the designs provided by the client of the single-family home, two inventoried trees will need to be removed (Table 3). Of these two trees, one is of Landmark status, and one is significant.

Tree #9 is the Landmark tree identified for removal for this project. It has a diameter of 36.3 inches and was found to be in *Good* condition. Tree #11 has a diameter of 20 inches and is in *Severe* condition. This tree has fallen over but is still sprouting new growth.

Table 3. List of inventoried trees that will need to be removed.

Tag #	Scientific Name / Common Name	DBH (in)	Height (ft)	Condition	Exceptional	Landmark
9	<i>Thuja plicata</i> (Western red cedar)	36.3	100	Good	-	X
11	<i>Populus trichocarpa</i> (Black cottonwood)	20	50	Severe	-	-

Tree Protection fencing for retained trees within proximity to construction activities should be placed at a bare minimum around the Interior Critical Root Zone (ICRZ). The ICRZ is the area

encircling the tree, one-half the diameter of the Critical Root Zone (CRZ). Any impacts to the area within the ICRZ can cause significant or potentially life-threatening damage to the tree. A complete list of impacted trees can be found in Table 4 below along with the distance that Tree Protection Fencing should be placed at a minimum to protect the ICRZ.

Table 4. Projected impacted trees from the new single-family home.

Tag #	Scientific Name / Common Name	DBH (in)	Height (ft)	Condition	Tree Protection Fencing Min. (ft)
10	<i>Prunus sp. menziesii</i> (Douglas-fir)	9	60	Poor	4.5
13	<i>Alnus rubra</i> (Red alder)	8.5	55	Fair	4.25

Project Compliance

With the removal of the above-mentioned trees, the subject parcel will have a remaining canopy coverage of 63.2-percent, which exceeds the minimum requirements set forth in 16.14.070. No replacement trees or supplemental plantings are required.

Tree Protection Measures

To ensure the survival of the significant trees that will be marked for retention prior to construction, these industry standard best management practices should be followed:

- **Tree protection barriers:** A temporary enclosure erected around a tree to be protected at the critical root zone (CRZ). The City defines the CRZ as an area equal to one-foot radius from the base of the tree's trunk for each one inch of the tree's diameter at 4.5 feet above grade). Tree protection barriers should consist of 6-foot-high chain link fence with a sign that states: "Tree Protection Area" on all sides of the fence. Protection barriers are to remain on-site until the director authorizes their removal.
- **Minimize root zone compaction:** A 6-inch layer of coarse mulch or woodchips is to be placed beneath the dripline of the protected trees. Mulch is to be kept 12-inches from the trunk.
- **Hand dig:** All excavation done within the dripline, or when roots are encountered smaller than 2-inches, should be done by hand or by using an air spade.
- **Minimize injury:** When tree roots must be removed, cut roots cleanly using a sharp saw or pruners. Do not rip or cut tree roots with heavy equipment.

- **Monitor construction:** An ISA-certified arborist should be present on-site during construction activities within the CRZ of retained trees to monitor tree protection, assist with changes in the field, and document construction impacts.

Limitations of This Study

The findings of this report are based on the best available science and are limited to the scope, budget, and site conditions at the time of the assessment. Although the information in this report is based on sound methodology, internal structural flaws (such as cracking or root rot) or other conditions that are not visible cannot be detected with this limited basic visual screening. Trees are inherently unpredictable. Even vigorous and healthy trees can fail due to high winds, heavy snow, ice storms, or rain.

This report is based on the current observable conditions and may not represent future conditions of the trees. Any change in site condition, including clearing and grading, will alter the condition of remaining trees in a way that is not predictable. Remaining trees should be monitored for signs of stress, pathogens and structural defects after clearing and home construction.

The conclusions contained within this report have been made for permitting purposes only. They are not intended for use by the property owner or adjacent homeowner to evaluate tree risk. Tree assessment related to occupant safety and safeguarding new structures or other targets must be done separately and after building has been completed. Please call if you have any questions or if we can provide you with any additional information.

Sincerely,



Jake Robertson
ISA Certified Arborist® PN-8934A

Appendix A: Tree Inventory Table

TAG #	TREE NAME	EV / DEC	# STEMS	COMB. DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT (Y/N)	LANDMARK (Y/N)	NOTES
1	Alnus rubra (Red alder)	D	1	12.3	35	7	Fair	Y	N	Located on steep slope.
2	Alnus rubra (Red alder)	D	1	8.6	40	7	Fair	Y	N	Located on steep slope.
3	Alnus rubra (Red alder)	D	1	8.5	40	11	Fair	Y	N	Located on steep slope.
4	Populus trichocarpa (Black cottonwood)	D	1	18.0	45	14	Dead	N	N	
5	Alnus rubra (Red alder)	D	1	19.0	45	22	Poor	Y	N	Has an uncorrected lean to the East over the stream. Growing in sandy soil which is showing some signs of uplift.
6	Alnus rubra (Red alder)	D	1	8.6	25	11	Fair	Y	N	
7	Alnus rubra (Red alder)	D	1	8.5	25	12	Fair	Y	N	
8	Alnus rubra (Red alder)	D	1	14.0	25	19	Poor	Y	N	Branches intertwined with overhead utility lines.
9	Thuja plicata (Western red cedar)	E	1	36.3	100	16	Good	Y	Y	Co-dominant stems at 7 feet.
10	Prunus sp. (Cherry species)	D	1	9.0	60	11	Poor	Y	N	Ivy growing up stem.
11	Populus trichocarpa (Black cottonwood)	D	1	20.0	50	14	Severe	Y	N	Fallen over but still sprouting new growth. Root plate still intact and buried.
12	Populus trichocarpa (Black cottonwood)	D	1	36.0	30	12	Dead	N	N	
13	Alnus rubra (Red alder)	D	1	8.5	55	23	Fair	Y	N	

Appendix B: Tree Inventory Map

