

SUF

SOUND URBAN FORESTRY**Appraisals, Planning, Urban Landscape Design and Management****Forest Park Multi-Residential Project**

Tumwater, Washington

Tree Protection Plan

Prepared for: Michael Lawrence

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Consulting Forester/ISA Certified Arborist & Tree Risk Assessment Qualified

Date: 6/23/15

The following report presents information gathered during my recent site visit at the proposed Forest Park project. The purpose of the evaluation was to conduct an inventory of the trees within the parcel in order to determine the number to be retained, assess the health of the trees within the site and establish the necessary protection measures for any trees to be retained or those within adjacent properties that could be impacted. This plan will satisfy the requirements as specified by the Tumwater Protection of Trees and Vegetation Ordinance (TMC 16.08) pursuant to the City of Tumwater Development Guidelines and Standards.

Forest Park Tree Plan

I. Site Description

The 7.94-acre site is legally described as 1 parcel, #55201200000. It is located to the west of Ridge View Loop SW.

The property is completely forested with no prior development.

II. Inventory of Trees

Because the site is forested, a 100% inventory of the trees is not practical. Therefore, ten 50' x 50' sample plots were taken throughout the property. Please see Appendix 1 for the approximate locations of the plots.

The vegetation cover is continuous throughout the parcel. It is dominated by big leaf maples with diameters ranging from seedlings up to 60"+. Many of them are multi-stemmed and in good condition. Also found are scattered western red cedar, western hemlock, red alder and Douglas fir. The following table presents the information gathered in the sample plots.

Table 1. Results of Sample Plots

Plot #	Species/Trunk Diameter	Condition
1	Big Leaf Maple: 8", 8", 17", 26", 14", 15" Western Red Cedar: 28" Douglas Fir: 15"	Good Good Good
2	Big Leaf Maple: 28", 50" Western Hemlock: 12" Western Red Cedar: 18"	Fair to Poor Fair Good
3	Big Leaf Maple: 78", 40", 18", 18" Red Alder: 8", 10"	Fair to Good Good
4	Big Leaf Maple: 60+", 16", 8" Red Alder: 8" Douglas Fir: 16"	Fair to Good Good Fair
5	Big Leaf Maple: 10", 54", 6", 10", 44"	Good
6	Big Leaf Maple: 46", 24", 38", 49", 32", 38"	Fair to Good
7	Big Leaf Maple: 16", 20, 50+ " Western Red Cedar: 22"	Good Good
8	Big Leaf Maple: 6", 60", 70+ " Douglas Fir: 16", 22"	Good Good
9	Big Leaf Maple: 12", 14", 16", 50"	Good
10	Big Leaf Maple: 6", 14", 17", 18" Western Red Cedar: 18" Douglas Fir: 12", 16"	Good Fair Good

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Based on the information gathered from the sample plots, the average number of trees and basal area per acre and within the parcel has been determined.

Table 2. Stand Stocking

SPECIES	DIAMETER CLASS (inches)	AVG. TREES/ACRE	BASAL AREA/ACRE
Douglas fir	12-18	9	30
Douglas fir	18-24	2	13
Western Red Cedar	12-18	3	26
Western Red Cedar	18-24	2	13
Western Red Cedar	24-30	2	13
Big Leaf Maple	6-12	16	86
Big Leaf Maple	12-18	21	160
Big Leaf Maple	18-24	3	26
Big Leaf Maple	24-30	5	40
Big Leaf Maple	30-36	2	13
Big Leaf Maple	36-42	5	36
Big Leaf Maple	42-48	5	40
Big Leaf Maple	48-54	6	20
Big Leaf Maple	54-60	3	26
Big Leaf Maple	66-72	2	23
Big Leaf Maple	72-78	2	33
Western Hemlock	12-18	2	13

Table 3. Total Trees within the Site

Species	Diameter Range	Total Number
Big Leaf Maple	6-12	124
Big Leaf Maple	14-20	180
Big Leaf Maple	24-38	83
Big Leaf Maple	40-60	138
Big Leaf Maple	70-78	28
Western Red Cedar	18-28	55
Douglas Fir	12-22	83
Western Hemlock	12	14
		Total = 705

Tree Retention

Trees to be retained are located within 7 areas throughout the property for a total of 53,459.39 square feet. The 5% tree protection open space requirement by the City is met with Area 4, which is 23,035 square feet (7.9% of the buildable area).

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Landmark Trees

I found no trees within the site that would be considered specimen or 'Landmark' trees.

Off-Site Trees

The only area where adjacent trees could be impacted is along the western perimeter of the property, within parcel #75320299960. There is a section where grading will occur up to the property line and care should be taken to ensure that the critical root zones of the adjacent trees are treated properly. In addition to fencing along the property line, I recommend that a certified arborist be present when grading takes place in this area.

III. Tree Retention Calculations

The following is a summary of the tree retention calculations.

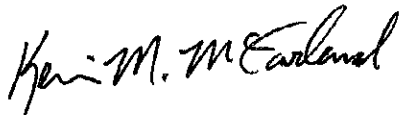
Gross Acreage	7.94 Acres
Buildable Area	6.71 Acres
Total Trees On Site	705 Trees
*20% Tree Retention	141 Trees
12 Trees/Acre	95 Trees
Planned Retention	109 Trees
Shortfall on Required Retention	32 Trees
Required Tree Replacement (3 x 32)	96 Trees

*This is the greater amount and therefore required by the City

V. Tree Protection

- It is recommended that all proposed removal trees be felled and extracted during the clearing and grading process. The edge trees of the areas to be preserved should be field marked prior to any tree removal.
- Directional felling shall be used to limit damage of retained trees.
- After tree removal and prior to clearing and grading the protection fence shall be installed.
- Tree protective fence shall be indicated on the site and grading and erosion control plans.
- A fence detail will be presented within construction notes, site plan and grading and erosion control plans.
- Protective fencing shall consist of a combination of chain-link panels secured by 'T' bar metal posts and/or blaze orange plastic attached by zip ties to 'T' bar posts placed every 6-8' apart.

Professionally submitted,

A handwritten signature in black ink, reading "Kevin M. McFarland". The signature is written in a cursive, flowing style.

Kevin M. McFarland, Principal
Consulting Forester

ISA Certified Arborist PN-0373 & ISA Tree Risk Assessment Qualified

Appendix 1. Approximate locations of sample plots within Forest Park

