NW 18th Avenue Subdivision
Tree Survey
Camas, Washington

Prepared For:
Modern NW
1801 NE Glisan Street
Portland, OR 97213

Prepared By:
Olson Environmental LLC
222 E. Evergreen Blvd
Vancouver, WA 98660
(360) 693-4555

October 28, 2021

OLSON ENVIRONMENTAL LLC
ENVIRONMENTAL SERVICES • GIS • HABITAT RESTORATION

TABLE OF CONTENTS

TREE SURVEY

Project:	**NW 18th Street Subdivision**
Applicant:	**Modern Northwest**
Location:	**Property south of NW 18th Avenue and east of NW Hood Street, Camas Washington**
Legal Description:	**NE 1/4 of Section 09,T1N, R3E, W. M., Clark County**
Serial Number(s):	**127439000 (5 ac.) and 127359000 (2.32 ac.) and 127356000 (2.5 ac.)**
Study Area Size:	**9.82 acres**
Jurisdiction:	**City of Camas**
Zoning:	**R-7.5**
ComPlan:	**Single-Family Medium**
Assessment by:	**Kevin Terlep, ISA Certified Arborist# WE-10893A**
Site Visit:	**October 7, and 18, 2021**
Report Date:	**October 28, 2021**

1.0 SCOPE OF WORK

This report details the results of a tree survey conducted for Modern Northwest by Olson Environmental, LLC. (OE). The study area is located south of NW 18th Avenue and east of NW Hood Street, Camas, Washington (Fig. 1). The report provides a tree inventory and combined results of a limited visual Level I assessment (for off-site trees) and Level 2 basic risk assessment for all *significant trees*, as defined locally by the City of Camas, under Camas Municipal Code (CMC) 18.13.051.

2.0 SITE DESCRIPTION

The 9.82-acre property includes parcel numbers 127439000 (5.0 acres), 127359000 (2.32), and 127356000 (2.5 acres). The study area includes the entirety of all parcels for a proposed 33-lot single-family residential subdivision, including associated road improvements and a 15,076 ft^2 storm water facility (Fig. 2). The western parcel (127439000) is bounded by NW Hood Street and NW 18th Avenue to the west and north, respectively. The eastern parcels are bordered by NW 18th Ave to the North and a new development along NW Hancock Drive on the adjacent property to the east. A long driveway extends southward from the northern property line leading to one large house, a guest house, garage, and barn. Several treed landscape islands occur within a mowed lawn from the northern property line south to the guest house. The eastern property boundary is heavily wooded for approximately 500 feet from the north to south, extending to the eastern property boundary of parcel #127439000 just south of the guest house.

3.0 METHODS

OE conducted site visits on October 7, and 18, 2021 and surveyed all *significant trees* within the study area. According to CMC, s*ignificant trees* are defined as evergreen trees with a diameter at breast height (4.5' above the ground, DBH) of 8 inches or greater and deciduous trees with a DBH of 12" or greater. This definition does not include invasive species or hazard trees. Based on guidance from the City of Camas, the DBH for any trees with forked stems at or below DBH were calculated by converting individual tree diameters to area, summing the areas and then converting back to diameter.

The entire site was traversed on foot and all tree locations were recorded with a hand-held GPS. The scientific name, DBH, health, and risk rating was assessed and recorded. On- and off-site trees were both assessed in order to establish tree root protection zones during construction.

Risk rating for potentially hazardous trees (on- and off-site) was determined according to the principals of Tree Risk Assessment Best Management Practices (Smiley et al. 2017) and the Tree Risk Assessment Manual (Dunster et al. 2017), both are publications from the International Society of Arboriculture (ISA). This methodology involves analyzing tree defects and site conditions to determine the likelihood of failure weighed against the likelihood and consequences of impact to specific targets to determine risk rating. Please note that for the purposes of this method, structurally unsound or unhealthy trees with a high risk of failure but without the possibility of impacting high value targets (*e.g.*, structures or people), are not considered high risk.

A Level-2 basic assessment was conducted for on-site *significant trees*. Off-site *significant trees* that were not behind a fence or otherwise inaccessible were investigated using a Level-1 limited visual assessment. The timeframe of this assessment is assumed to be 1-year.

4.0 RESULTS AND DISCUSSION

The property contained a total of 88 significant trees, as defined by CMC 18.13.051. All but three (3) small big-leaf maples *(Acer macrophyllum)* were contained within the two eastern parcels, with the highest proportion concentrated along the eastern property boundary and the southeastern quadrant of the property. Summary data of all trees is provided in Appendix A. Photos of all trees throughout the property can be viewed in Photo Sheets 1-14. A map of significant trees is provided in Figure 3, high risk trees and proposed tree removals are identified in Figure 4.

Paper-birch *(Betula papyifera)* occurs in small groups along the driveway (Photo Sheets 1 and 2). Most of these trees are in fair condition with some dead wood and moderate vigor representative of the species. Just north of the main house there is a landscaped island -all of the tree roots in this location are severely exposed, with some root plates beginning to lift (Photo Sheets 3 and 4). One red oak (*Quercus rubra*.) tree#32) is marginally within strike distance of the house in the event of failure, and is considered a moderate to high risk. Targets for the

remaining trees within the island (tree# 33-35) are lawn and landscaping and were therefore not considered to be a high level of risk.

The eastern property boundary is composed primarily of a mix of arborvitae *(Thuja spp.*) and big-leaf maples, among a few other species from the garage north-ward (Photo Sheets 5-7). All of the large big-leaf maples in these areas are over-mature and displaying varying degrees of heartwood and sapwood decay, which is typical of this species given their age and size. Previous upper-canopy and main stem failures were also observed among some of these trees (especially tree#21, 22, 23, and 29). In addition, tree# 14 and 19 are currently dead. Targets for these trees in the event of failure are the lawn and the adjacent property. Due to the potential impacts to these targets (the adjacent property, in particular), they are considered to be high risk.

Continuing along the eastern property boundary, extending to the west and then terminating at the open pasture is an open woodland composed exclusively of big-leaf maple with the exception of one (1) Douglas-fir (*Pseudotsuga menziesii)*, tree# 27. This area is gated off just south of the garage for goats and alpacas. All trees have been fenced around the circumference to a height of approximately six (6) feet. Where possible, tree DBH was directly measured, but estimated where fencing was prohibitive. Trees in this area are generally multi-stemmed, over-mature, and in various stages of decay and failure (Photo Sheets 8-13). The area is littered with broken tops and dead wood from previous failures. High risk trees in this area include tree# 74-76, which in the event of failure could impact the guest house.

5.0 RECOMMENDATIONS

Based on the site design proposed by the Applicant (Fig. 2), it is not practical to retain any of the trees within the study area. There is a high probability that construction and excavation would result in root zone impacts and tree mortality for all significant trees identified within this report. For these reasons, OE recommends removal of all of the trees identified (Fig 4). In addition, it is our understanding that off-site tree#86 and 87 (Photo Sheet 14) will be removed during the course of road improvements off-site. If these trees are not removed, we recommended notification of the owner due to on-site construction impacts to their root zones, which could result in eventual tree failure.

6.0 ARBORIST DISCLOSURE

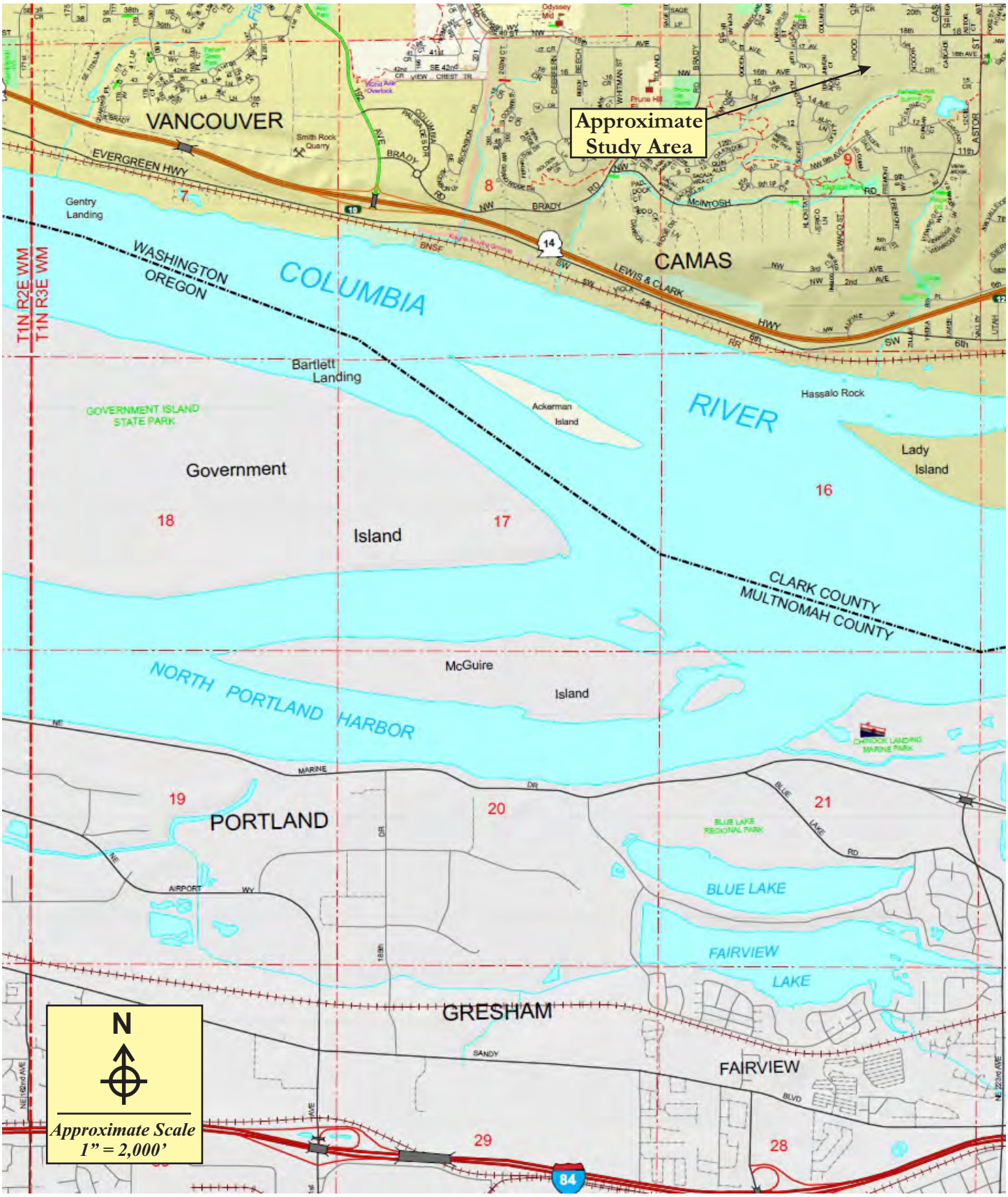
Arborists are tree specialist who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the health of trees and attempt to reduce the risk of living near trees. The client and the jurisdiction may choose to accept or disregard the recommendations of the arborist or seek additional expertise.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that may fail in ways that we do not fully comprehend. Conditions are often hidden within the trees and below ground within their root systems. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments are not always a guarantee.

7.0 Literature Cited

Dunster JA, Edgar Thomas Smiley, Matheny NP, Lilly S, International Society Of Arboriculture. 2017. Tree Risk Assessment Manual. 2nd ed. Champaign, Illinois: International Society of Arboriculture.

Edgar Thomas Smiley, Matheny NP, Lilly S, International Society Of Arboriculture. 2017. Tree Risk Assessment Best Management Practices. 2nd ed. Champaign, Ill.: International Society of Arboriculture



APPLICANT:
Modern NW
8101 NW Glisan
Portland, OR 97213

PURPOSE: Tree Survey
OE Job#: E20351.01

Project Location
NW 18th Street Subdivision Project
Camas, Washington

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ENVIRONMENTAL SERVICES • GIS • HABITAT RESTORATION
222 E. Evergreen Blvd., Vancouver, WA 98660 ph: 360-693-4555 fax: 360-699-6242

PROPOSED ACTIVITIES IN:
Lacamas Creek Watershed
LEGAL: NE & NW 1/4 of S09, T1N, R3E W. M.
NEAR: Camas, Washington
COUNTY: Clark County
DATE: 10/28/2021

Figure 1

APPLICANT:
Modern NW
8101 NW Glisan
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Proposed Site Plan

NW 18th Street Subdivision Project
Camas, Washington

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Figure 2

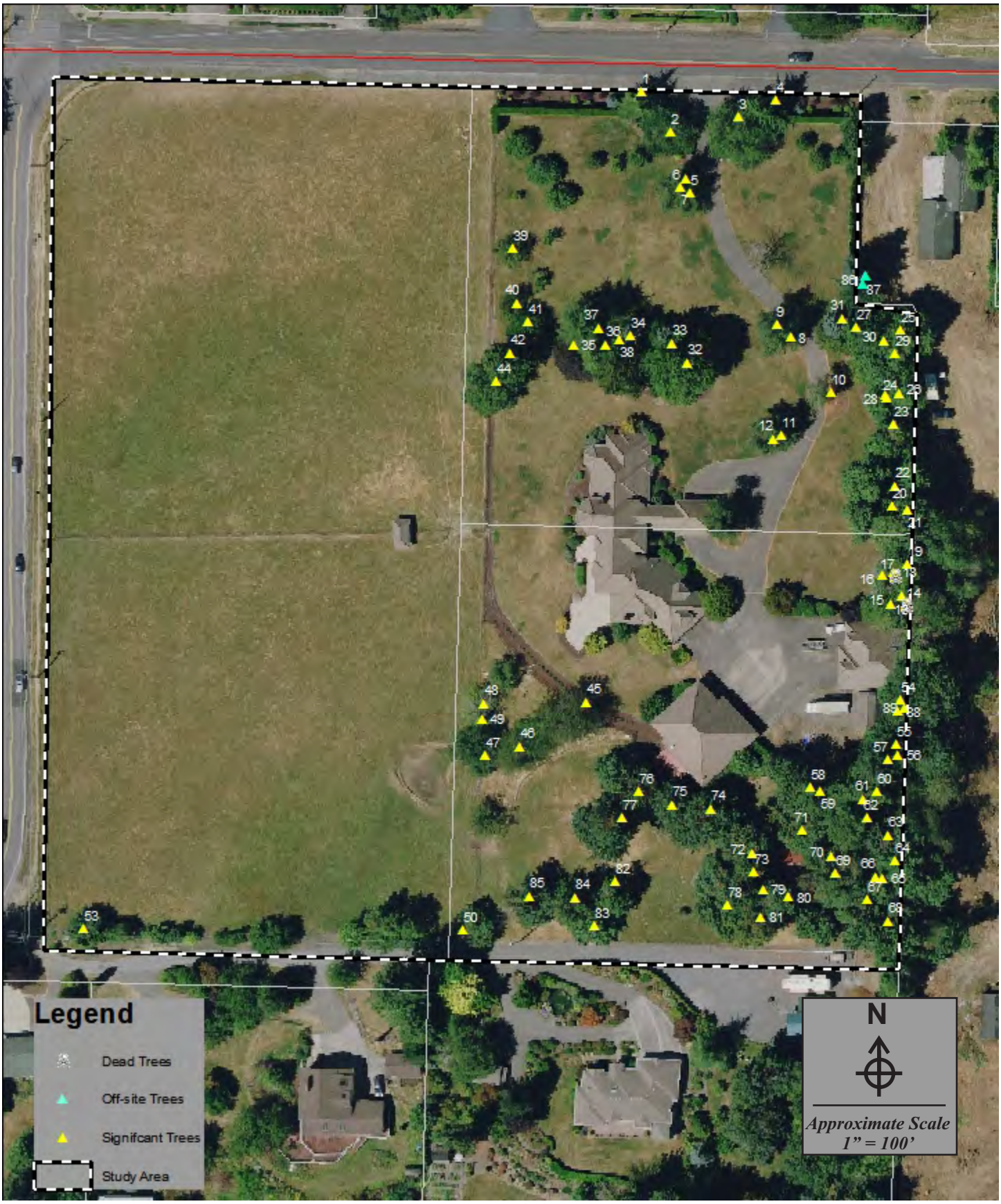

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Figure 3

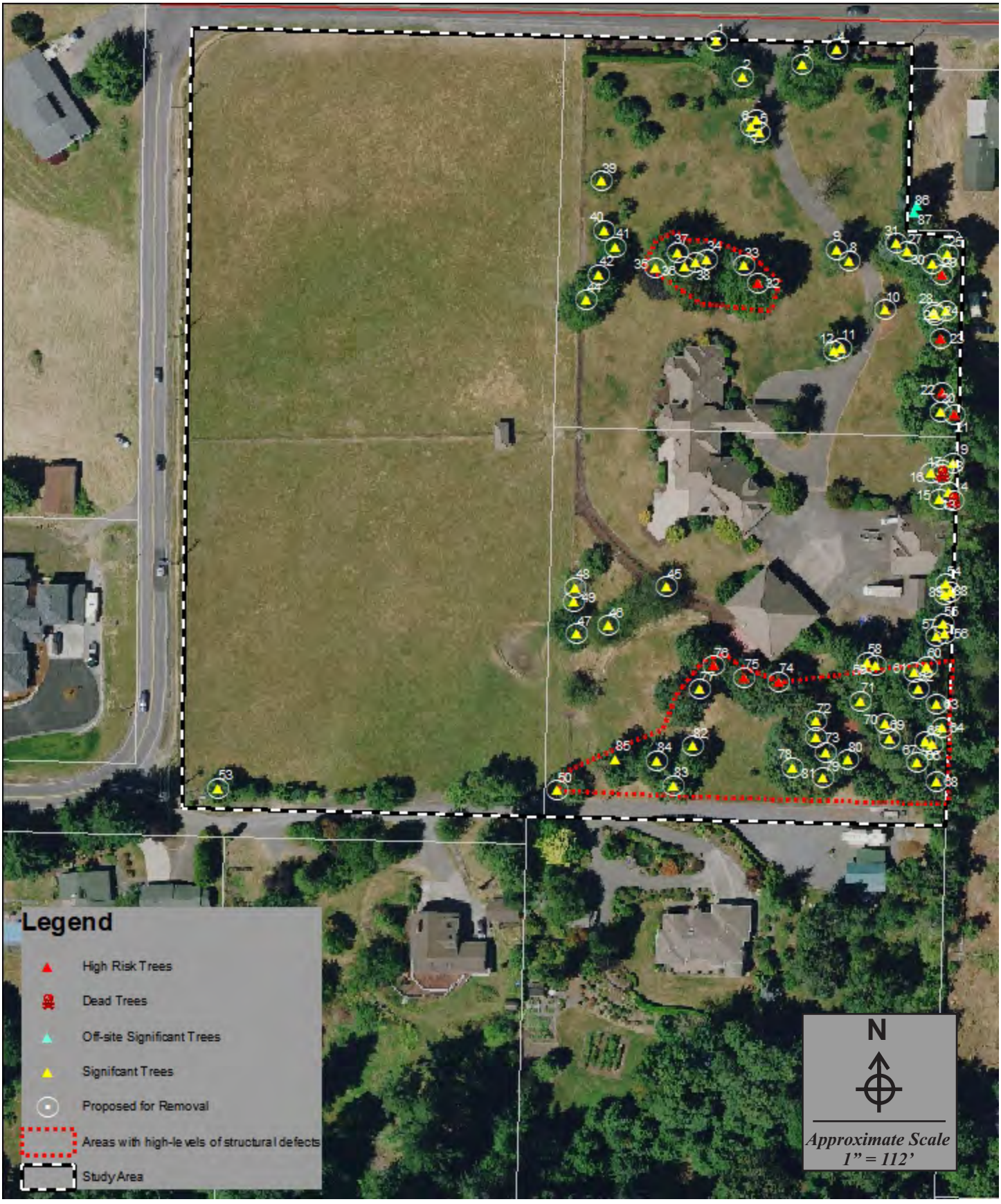

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figure 4

APPLICANT:
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Study Area Photographs
Driveway and Property Entrance
NW 18th Street Subdivision Project
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Lacamas Creek Watershed
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Photo-Sheet 1

APPLICANT:
Modern NW
8101 NW Glisan
Portland, OR 97213

PURPOSE: Tree Survey
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Study Area Photographs
Eastern Property Boundary (north of Garage)
NW 18th Street Subdivision Project
Camas, Washington

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Photo-Sheet 2

APPLICANT:
Modern NW
8101 NW Glisan
Portland, OR 97213

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Study Area Photographs
Landscape Island North of House
NW 18th Street Subdivision Project
Camas, Washington

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Lacamas Creek Watershed
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Photo-Sheet 3

APPLICANT:
Modern NW
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Study Area Photographs
Landscape Island and Northwest side of House
NW 18th Street Subdivision Project
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Photo-Sheet 4






APPLICANT:
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Study Area Photographs
Behind Garage and Wood-pile
NW 18th Street Subdivision Project
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Photo-Sheet 5

APPLICANT:
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Study Area Photographs
Eastern Property Boundary (north of Garage)
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Photo-Sheet 6

APPLICANT:
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Study Area Photographs
Eastern Property Boundary (north of Garage)
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Photo-Sheet 7

APPLICANT:
Modern NW
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Study Area Photographs
Fenced Area -South of Garage, North of Barn
NW 18th Street Subdivision Project
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PROPOSED ACTIVITIES IN:
Lacamas Creek Watershed
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DATE: 10/28/2021

Photo-Sheet 8

APPLICANT:
Modern NW
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PURPOSE: Tree Survey
OE Job#: E20351.01

Study Area Photographs
Fenced Area South of Garage -Near Western Property Boundary
NW 18th Street Subdivision Project
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Photo-Sheet 9

APPLICANT:
Modern NW
8101 NW Glisan
Portland, OR 97213

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Study Area Photographs
Fenced Area South of Garage -Near Barn
NW 18th Street Subdivision Project
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PROPOSED ACTIVITIES IN:
Lacamas Creek Watershed
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Photo-Sheet 10

APPLICANT:
Modern NW
8101 NW Glisan
Portland, OR 97213

PURPOSE: Tree Survey
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Study Area Photographs
Fenced Area South of Garage -Near Guest House
NW 18th Street Subdivision Project
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Lacamas Creek Watershed
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Photo-Sheet 11









APPLICANT:
Modern NW
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Portland, OR 97213

PURPOSE: Tree Survey
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Study Area Photographs
Fenced Area South of Garage -North of Goat Pasture
NW 18th Street Subdivision Project
Camas, Washington

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Photo-Sheet 12

APPLICANT:
Modern NW
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Study Area Photographs
Pasture and Fence-line Parallel to NW 16th Ave
NW 18th Street Subdivision Project
Camas, Washington

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Lacamas Creek Watershed
LEGAL: NE & NW 1/4 of S09, T1N, R3E W. M.
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Photo-Sheet 13

Tree# 48 and 49

Tree# 45

Off-site Tree# 86 and 87

APPLICANT:
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Study Area Photographs
Fenced Area West of Guest House and Off-site Northwest Corner
NW 18th Street Subdivision Project
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Photo-Sheet 14

Tree#_	Tree Units per CMC	DBH (in)	Common Name	Scientific Name	Risk Rating (1-4)	Remove	Condition	Crown Defects	Trunk_Defects
1	6	19	deodor cedar	*Cedrus deodara*	1	Y	Good	CD	Mod lean towards rd
2	5	17	red maple	*Acer rubrum*	2	Y	Fair		Mutiple CD, Missing bark
3	8	24	deodor cedar	*Cedrus deodara*	2	Y	Fair		WA, CDm
4	7	13, 17= 21	red maple	*Acer rubrum*	2	Y	Fair	CD, IB	CD
5	5	13, 11= 17	paper birch	*Betula papyifera*	2	Y	Fair	BH(2)	CD, IB, ES
6	2	11, 5= 12	paper birch	*Betula papyifera*	2	Y	Fair	DT	CD, IB, CR
7	2	12	paper birch	*Betula papyifera*	2	Y	Fair	CD, IB, DT	ES
8	2	12	paper birch	*Betula papyifera*	2	Y	Fair	BT	SLc
9	2	8, 9= 12	paper birch	*Betula papyifera*	2	Y	Fair	DW	CD, IB
10	2	11	paper birch	*Betula papyifera*	3	Y	Poor	Diebacks, DH	S, C, SRm
11	5	17	paper birch	*Betula papyifera*	2	Y	Poor	DB, DW, DT	CD, IB
12	2	12	paper birch	*Betula papyifera*	2	Y	Fair	WA, UC	
13	4	15	sycamore	*Platanus occidentalis*	1	Y	Good		
14	[redacted]	7, 9, 10= 15	big-leaf maple	*Acer macrophyllum*	4	Y	Dead		
15	2	10	arborvitae	*Thuja spp.*	1	Y	Good		CD,
16	2	8	arborvitae	*Thuja spp.*	1	Y	Good	UC	
17	[redacted]	10, 12= 16	big-leaf maple	*Acer macrophyllum*	4	Y	Dead		SR, Beetle galleries, MB
18	2	9	arborvitae	*Thuja spp.*	1	Y	Good	UC	
19	2	12	sycamore	*Platanus occidentalis*	1	Y	Good		
20	18	32, 28, 12= 44	big-leaf maple	*Acer macrophyllum*	2	Y	Good	CD, IB	S_eastside
21	12	32	big-leaf maple	*Acer macrophyllum*	3	Y	Fair	CDmultiple on main stems, IB	SRwest, HRsevere west, C
22	20	38, 29= 48	big-leaf maple	*Acer macrophyllum*	4	Y	Fair	CD, UC, PBF.majorstem.eastside	Large seams, CD, IB, ES
23	9	25	big-leaf maple	*Acer macrophyllum*	4	Y	Poor	2 of 3 stems prev failed/remov	Completely hollow at base

Tree#_	Root Defects	Site_Notes	Comments_
1	Minor exp roots		
2	Severly exposed roots	Limited soil volume,compacted	
3	ERs, LR, LSV, CS	At driveway	
4	ERs, LR, LSV, CS	Behind mailbox	
5	ERm, LSV, ROP, CS		
6	ERmo, LSV, CS, ROP		
7	ERm, LSV, CS, ROP	Group of 3 at driveway	
8	LSV, CS, ROP		
9	ROP, LSV, CS	2nd group along driveway	
10	CS, LSV, ROP		
11	CS, LSV, ROP		
12	CS, LSV, ROP		
13			
14			
15	CS		
16	BRC		
17	RPL, RR	1 stem leans toward lawn	1 stem leans toward neighbor
18	BRC		
19			
20	ERC_westside		
21			Overmature, base hollow on west stem
22			Overmature, significant loads uneven distribution, failed stem hung up in east fork
23			Advanced heartwood rot,

Tree#_	Tree Units per CMC	DBH (in)	Common Name	Scientific Name	Risk Rating (1-4)	Remove	Condition	Crown Defects	Trunk_Defects
24	2	11	arborvitae	*Thuja spp.*	1	Y	Good		
25	8	24	sycamore	*Platanus occidentalis*	1	Y	Good	CD, IB, S	
26	4	15	sycamore	*Platanus occidentalis*	1	Y	Good	CD	
27	2	11	arborvitae	*Thuja spp.*	1	Y	Good		
28	3	13	arborvitae	*Thuja spp.*	1	Y	Good	UC	
29	9	25	big-leaf maple	*Acer macrophyllum*	4	Y	Fair	UC, CD, IB, DMB, S_4' long starting at 6'	CD, IB
30	5	17	Douglas-fir	*Pseudotsuga menziesii*	2	Y	Poor	Sparse crown/dead and missing branches, low vigor.	
31	4	16	blue spruce	*Picea pungens*	1	Y	Fair		RF
32	12	31	red oak	*Quercus spp.*	3	Y	Good	UC, OB	CD, IB, OB
33	3	13	blue spruce	*Picea pungens*	2	Y	Good	CD	
34	2	11	blue spruce	*Picea pungens*	1	Y	Good	CD, IB	
35	7	21	big-leaf maple	*Acer macrophyllum*	3	Y	Good	CD	CD
36	9	25	deodor cedar	*Cedrus deodara*	3	Y	Good	CD, deformed	
37	11	29	deodor cedar	*Cedrus deodara*	3	Y	Good		
38	8	24	American basswood	*Tilia americana*	3	Y	Good	IB, CD	IBs, CDs
39	4	8, 7,8 =15	pear	*Pyrus sp.*	1	Y	Fair	CD, IB, WA, PF	C, S
40	2	7, 7, 7 = 12	cherry	*Prunus sp.*	1	Y	Poor	CD	CD, IBs, CRs, CAs
41	5	18	red maple	*Acer rubrum*	1	Y	Good	ES	CD, W.base.minor/healed, ES
42	8	23	silver maple	*Acer saccharinum*	1	Y	Good	CD	CD, IB
44	5	18	red maple	*Acer rubrum*	1	Y	Good		CD, IB
45	5	10,11,10 = 18	cherry	*Prunus sp.*	2	Y	Good	CD, IB	CD, IB
46	4	9, 10, 8 = 16	cherry	*Prunus sp.*	3	Y	Fair	CD	CD, IB
47	5	13,10,8 = 18	almond	*Prunus dulcis*	3	Y		CD,IB	Large cavity and advanced decay at base
48	4	15	red maple	*Acer rubrum*	3	Y	Poor	Dieing, low vigor	Advanced decay at base

Tree#_	Root Defects	Site_Notes	Comments_
24			
25			
26			
27	BRC		
28	BRC		
29	RPL, ERs		Overmature
30			
31	LSV, CS		
32	M, RPL, Uneven weight dist		
33	RPL, LSV, CS		
34	LSV, ERs, CS	In landscape island near house, all trees in this area are displaying signs of severe root stress. Very compacted/limitied soil volume and severly exposed roots.	
35	ERe, CS, LSV		
36	LSV, CS, RPLmi		
37	ER.7'x15"NE, LSV, CS		
38	CS, RPLe, ERe, unstable roots		
39			
40	CS		
41	CS		Tree has been topped, water sprouts
42	CS		
44			
45	ERs, LSV, CS	Near OEI Stakes	
46	ERmo		
47			
48			

Tree#_	Tree Units per CMC	DBH (in)	Common Name	Scientific Name	Risk Rating (1-4)	Remove	Condition	Crown Defects	Trunk_Defects
49	3	13	red maple	*Acer rubrum*	3	Y	Poor	Dieing, low vigor	Advanced decay at base
50	4	16	big-leaf maple	*Acer macrophyllum*		Y	Fair	CD, IB, S	1 of 2 stems dead and in advanced decay
51	4	15	big-leaf maple	*Acer macrophyllum*	2	Y		CD, IB	
52	3	8, 10 = 13	big-leaf maple	*Acer macrophyllum*	2	Y		UC, OB	
53	3	14	big-leaf maple	*Acer macrophyllum*	2	Y			
54	2	9	arborvitae	*Thuja spp.*	1	Y	Good		
55	2	8	arborvitae	*Thuja spp.*	1	Y	Good		
56	10	27	Douglas-fir	*Pseudotsuga menziesii*	1	Y	Good		
57	12	31	Douglas-fir	*Pseudotsuga menziesii*	1	Y	Good		
58	13	18, 27 = 33	big-leaf maple	*Acer macrophyllum*	3	Y	Good	CD, IB, Large cavity at upper/west fork.	CD, IB, Cavity at stem unions no rot progression
59	10	27	Douglas-fir	*Pseudotsuga menziesii*	2	Y	Fair		Severe resin flow
60	11	29	big-leaf maple	*Acer macrophyllum*	3	Y	Good	CDmajor stems, IBs, C	Several deep cavities
61	10	27	big-leaf maple	*Acer macrophyllum*	3	Y	Good	CD, UC	
62	8	23	big-leaf maple	*Acer macrophyllum*	1	Y	Good	CD	CD, IB
63	14	24, 25 = 36	big-leaf maple	*Acer macrophyllum*	3	Y	Poor	Multiple previous failures, Advanced rot	CDmajor, IBs, C
64	14	26, 24 = 36	big-leaf maple	*Acer macrophyllum*	3	Y	Fair	CD, Overextended UC, PBF	CD, IBs, C
65	3	13	big-leaf maple	*Acer macrophyllum*	2	Y	Good	D	Cmi
66	11	30	big-leaf maple	*Acer macrophyllum*	2	Y	Poor	DW1_20%,	CD.majorstems, IBs, Large cavity
67	7	22	big-leaf maple	*Acer macrophyllum*	3	Y	Fair	DH, DW, DMB, C	Previously failed main fork causing heartwood rot
68	14	23, 26 = 35	big-leaf maple	*Acer macrophyllum*	3	Y	Fair	CD, IB, OEB over neighbors entryway	CD, IB, ES
69	7	22	big-leaf maple	*Acer macrophyllum*	2	Y	Good	PBF, DMB, DB	
70	6	19	big-leaf maple	*Acer macrophyllum*	2	Y	Fair	CD, IB	Large cavity
71	8	24	big-leaf maple	*Acer macrophyllum*	2	Y	Poor	BT, C	ES
72	14	25, 24 = 35	big-leaf maple	*Acer macrophyllum*	2	Y	Fair	CD,IB	Cavity at base and at stem unions
73	9	25	big-leaf maple	*Acer macrophyllum*	3	Y	Fair	CD, IB	Advanced sapwood rot from previous dead stem
74	20	20, 21 14, 13, 23, 17, 14 =47	big-leaf maple	*Acer macrophyllum*	4	Y	Poor	IB, CD	Many large fused stems with rot and IB

Tree#_	Root Defects	Site_Notes	Comments_
49			
50	Eroding downslope, tree above rd		
51	LSV, ERC	Eroding terrace above road	Along southern fence-line
52		Trimmed for powerlines	Ouside southern fenceline
53	CD, IB		Outside of southern fenceline
54	CS	behind garage near debris pile	
55		Next to woodpile	
56	ERmi	Behind woodpile	
57	ERmo	Behind woodpile	
58	Several sm cavities at root colar, rot not extensive		
59			
60	ERmi		
61	Uprooting, Decay/Cavities		
62		Tree#58-85 are within the gated goat pasture between the garage and the open field in the southwest quadrant of the property. All maples within this area are over-mature and are experiencing some level of decay. Many trees have dead wood, including failed stems, tops, or upper brances. Most of the DBHs within this are were estimated due to inaccessibility from goat fencing. All trees within this area exhibit *possible to likely chance* of failure (whoe-tree or upper canopy) during the next year.	8' x 12" section of adjacent tree failed into fencing
63	M, Several cavities		Failure possible towards neighbors fence
64			Severely over-extended braches into next parcel.
65			
66			
67			
68			
69			East side of barn
70			East side of barn
71	CS		North side of barn
72	Cavity		NW corner of barn
73	Rot		SW corner of barn
74	C, R		

Tree#_	Tree Units per CMC	DBH (in)	Common Name	Scientific Name	Risk Rating (1-4)	Remove	Condition	Crown Defects	Trunk_Defects
75	15	21, 20, 22 =37	big-leaf maple	*Acer macrophyllum*	4	Y	Good	CD, IB	SR
76	23	24, 26, 27, 29 =53	big-leaf maple	*Acer macrophyllum*	3	Y	Good	CD, IB	SRmo
77	16	32, 25 =40	big-leaf maple	*Acer macrophyllum*	2	Y		CD, IB, DMB, C	C, CD, IB, Rot
78	2	12	big-leaf maple	*Acer macrophyllum*	3	Y	Poor	Most of canopy is gone duevto prev. failure.possible, advanced rot	Major decay at base, large cavity
79	9	25	big-leaf maple	*Acer macrophyllum*	3	Y	Fair	CD	Cavity, rot at base
80	13	34	big-leaf maple	*Acer macrophyllum*	2	Y	Fair	CD, IB, PF	IB, C, Decay
81	15	22,20, 15, 16 =37	big-leaf maple	*Acer macrophyllum*	3	Y	Poor	CD, IB, Shedding dead wood	CD, IB
82	6	19	big-leaf maple	*Acer macrophyllum*	3	Y	Poor	Top 1/3 is dead and shedding wood	Decay, Cavities
83	8	16, 17 =23	big-leaf maple	*Acer macrophyllum*	2	Y	Poor	CD, IB, S	Advanced SR, Huge cavity at base
84	9	14, 22 =26	big-leaf maple	*Acer macrophyllum*	3	Y	Poor	Vines, CD, IB, Cracks	Large crack, DMBark
85	9	23, 11 =26	big-leaf maple	*Acer macrophyllum*	3	Y	Poor	Canopy mostly dead	Multiple cracks, Dead/Missing Bark, Insect and bird damage
86	7	22	Douglas-fir	*Pseudotsuga menziesii*	1	Y	Good		
87	10	28	fir	*Abies lasiocarpa*	1	Y		CD	
88	4	9, 7, 9, 5 =15	big-leaf maple	*Acer macrophyllum*	3	Y	Good	CD,	PF, CDmultiple, IB
89	NA, off-site	23		*Acer macrophyllum*	NA	Y	Fair	ERmo	

Total Tree Units:	618
Units/acre (total):	63
Units Proposed for Removal:	365
Units/acre after removal:	37

Kevin Terlep
Cartified Arborist# WE-10893A
Tree Risk Assessment Certified (TRAQ)

Tree#_	Root Defects	Site_Notes	Comments_
75	Extreme rot at base		
76	Large cavity at base, cannot assess further due to goat fence		
77	Healed cavity at base		
78	ERs, Rotting from base	Tree#58-85 are within the gated goat pasture between the garage and the open field in the southwest quadrant of the property. All maples within this area are over-mature and are experiencing some level of decay. Many trees have dead wood, including failed stems, tops, or upper brances. Most of the DBHs within this are were estimated due to inaccessibility from goat fencing. All trees within this area exhibit possible to likely chance of failure (whoe-tree or upper canopy) during the next year.	Small canopy
79	Bulging at base, ES		South side of barn
80	Decay at root collar spreading to trunk		
81	Decay and large cavity		
82	Hollow at base		
83			
84			
85			
86			Irrigated area, potential root impacts
87			subalpinefir or spruce
88	ER	Just north of gated goat area. Tree in similar condition, over-mature.	Major stem previously failed, potential risk to garage
89			At fenceline, off-site. DBH estimated

Tree#_	Tree Units per CMC	DBH (in)	Common Name	Scientific Name	Risk Rating (1-4)	Remove	Condition	Crown Defects	Trunk_Defects

Tree#_	Root Defects	Site_Notes	Comments_

APPENDIX B

TREE DAMAGE APPREVIATIONS/CODES

Canopy and Branches	
Damage Description	**Abbreviation**
Broken branches/hangers	BH
Cavity	CA
Co-dominant Branches	CD
Crack	CR
Dead/Missing Bark	DMB
Dead Top	DT
Dead wood	DW
Included bark	IB
Lightning Damage	LD
Over-extended Branches	OB
Sapwood Decay	SD
Unbalanced Crown	UC
Weak Branch Attachments	WA

Trunk	
Damage Description	**Abbreviation**
Canker	C1
Cavity	CA
Co-dominant Stems	CD
Crack	CR
Dead/Missing Bark	DMB
Epicormic Sprouts	ES
Heartwood Decay	HD
Included Bark	IB
Lean	L
Resin or Sap Flow	RF
Sapwood Decay/Damage	SD
Seam	S
Weak Branch Attachments	WA

Roots	
Damage Description	**Abbreviation**
Buried Root Collar	BRC
Compacted Soil	CS
Conks/Mushrooms	CM
Decay	D
Exposed Roots	ER
Limited Soil Volume	LSV
Pavement Over Roots	POR
Lean	L
Mounding	M

Modifiers (all categories)	
Minor	mi
Moderate	mo
Severe	s
Extreme	e