

November 9, 2022

Jacob Bilbo
City of Shoreline
206.801.2358
Via email: jbilbo@shorelinewa.gov

Re: City of Shoreline Parks Bond Projects – Kruckeberg Botanic Garden Preliminary Arborist Report

The Watershed Company Reference Number: 220722

Dear Jacob:

On September 12th and 15th, 2022, ISA Certified Arborists® from The Watershed Company visited Kruckeberg Botanic Garden located at 20312 15th Avenue NW (parcels #012603-9219 and -9378) in Shoreline, Washington to inventory significant trees located in proximity to proposed park improvements. This report summarizes the findings of the study and provides a preliminary tree impacts assessment associated with proposed park improvements. The following documents are enclosed:

- Tree Inventory Table
- Off-site Tree Inventory Table
- Tree Inventory Sketch

Study Area

The study area, shown on the attached Tree Inventory Sketch, includes portions of Kruckeberg Botanic Garden including offsite trees located in proximity to proposed improvements (see Figure 1).

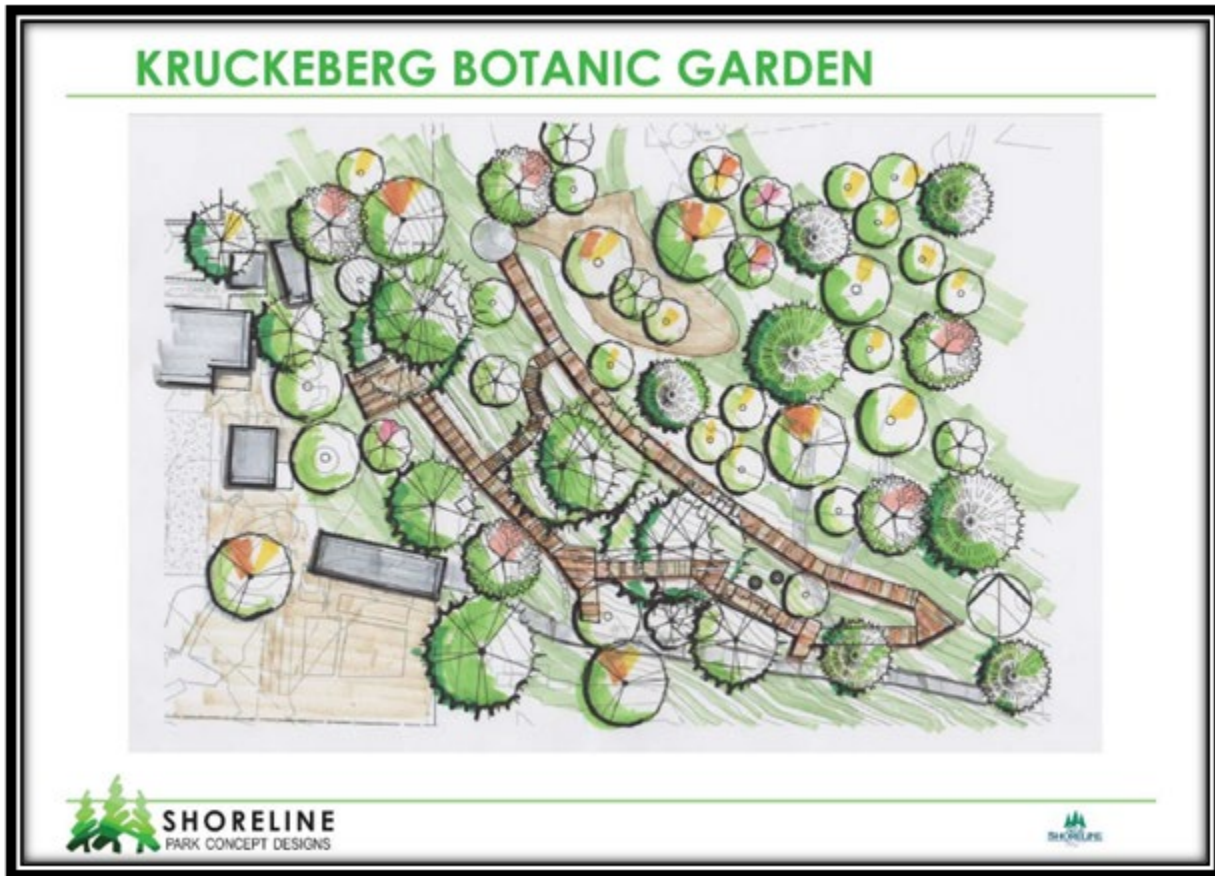


Figure 1. City of Shoreline concept design for Kruckeberg Botanic Garden (City of Shoreline, July 2019).

Project Background

Proposition 1, passed in the February 2022 special election, is a bond levy for improvements and land acquisitions at several Shoreline parks, including Kruckeberg Botanic Garden. Per conceptual plans, improvements will be made in the central portion of the park with main features including an accessible boardwalk trail connecting upper and lower garden areas. An expanded parking area is also planned in the western portion of the park.

Methods

Per Shoreline Municipal Code (SMC), a significant tree is defined as “any healthy tree six inches or greater in diameter at breast height (DBH) excluding those trees that qualify for complete exemptions from Chapter 20.50 SMC, Subchapter 5, Tree Conservation, Land Clearing, and Site Grading Standards, under SMC 20.50.310(A)” (SMC 20.20.048). White flagging with unique identification numbers were affixed to, or near, the trunk of all trees measuring six inches or greater located in proximity to the project area. Trees located outside of the park boundary in

proximity to the project area were assigned a unique identification number but not flagged. All observation of off-site trees were made from the park property or public right-of-way; attributes of off-site tree are estimated.

The attributes collected during the field survey are described in Table 1, below. The attached Tree Inventory Table contains the data collected for each tree inventoried. General attributes documented for all inventoried trees include the unique identification number and species name. Physical attributes include number of stems, diameter at breast height (DBH), height, canopy radius, and condition.

Table 1. Attributes recorded for all inventoried trees and that are presented in the spreadsheet database.

Attribute	Description of Attribute
ID NUMBER	Unique number assigned to an assessed tree. This number corresponds to the tag number in the field.
SCIENTIFIC NAME	Formal scientific name conforming to the International Code of Nomenclature.
COMMON NAME	Name that is based on normal or common language of the Pacific Northwest.
STEMS	Number of trunks or shoots that contribute significantly to the canopy.
DBH	Diameter at Breast Height; or 4.5 feet from the ground surface.
HEIGHT	Approximate distance from the ground surface at the trunk to the highest point of the subject tree as visually estimated.
CANOPY RADIUS	Approximate average distance from the stem to the limits of the drip line, or end of branches.
CONDITION	<p>Health rating of an assessed tree using a 6-tier system as follows:</p> <ul style="list-style-type: none"> 1 – Excellent: No apparent problems with the tree. Form is exemplary for the species. 2 – Good: Few minor defects such as crossed branches, minor foliage die-back, minor trunk damage, or unbalanced canopy. 3 – Fair: Several minor problems exist. 4 – Poor: Major defects visible such as significant trunk decay, codominant leaders with included bark, significant canopy die-back, major cracks in a stem or major limbs, and/or other structural problems. Topped trees are generally considered poor. 5 – Dying: Tree is in a state of significant decline. 6 – Dead: Tree is dead.

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. Methodology for measuring and calculating the diameter of trees with multiple trunks, major leans, or on steep slopes followed those outlined in the Guide for Plant Appraisal, 10th Edition, written by the Council of Tree and Landscape Appraisers (CTLA) and published by ISA (CTLA 2020). For trees with multiple trunks the total diameter was calculated by taking the square root of the sum of each diameter squared, which allows for comparison to other single-stemmed trees and for more accurate permitting and tree retention calculations. Visual estimates of trunk diameter were used where direct access to the tree was not allowed or not feasible.

Findings

Environmental Setting

Kruckeberg Botanic Garden is located in the northwest portion of the City of Shoreline (Section 01, Township 26 North, Range 03 East). The study area totals approximately 1.5 acres in size and is only a portion of the larger park. Surrounding land use is predominantly single-family residences with limited tree canopy.

The park functions as a botanical garden that is open to the public, with soft surface trails, outdoor classroom facilities, and group gathering spaces located in the forested east portion of the study area. The west portion of the site is developed with several buildings, plant propagation areas, a small retail nursery area, and a paved parking lot. A steeply sloped hillside divides the smaller west portion from the larger east portion of the park. The sloped area has a northeast facing aspect, with an average grade of approximately 28 percent. Vegetation is characterized by a variety of trees, shrubs, and herbaceous species that were imported as specimens for the botanical collection. These exotic plants are interspersed with northwest native vegetation.

Tree Inventory Results

A total of 94 trees (#5000-5093) located within the study area were included in the inventory. Three trees (#5020, 5029, and 5046) included in the inventory are not significant due to a condition rating of poor (4) or worse; a total of 91 significant trees were inventoried (SMC 20.20.048). Coniferous and evergreen trees comprise approximately two-thirds of the inventoried trees located within the study area. Forty-six different species of trees, most not native to the Pacific Northwest, were inventoried. Douglas-fir (*Pseudotsuga menziesii*) is the most common species with 18 individuals, followed by western red cedar (*Thuja plicata*) with eight

trees inventoried. Most other species are specimen trees with just one or two individuals located in the study area. Significant trees were generally in good (2) condition.

Overall, the average DBH of significant trees within the study area is 20.0-inches. The largest significant tree (#5045) is a giant sequoia (*Sequoiadendron giganteum*) with a DBH of 73.6-inches. The next largest tree (#5070) is a Douglas-fir with a DBH of 60.3-inches. Nine trees (#5014, 5062, 5067, 5068, 5071, 5076, 5077, 5079, and 5091), including seven Douglas-firs, have DBHs measuring between 40.0-inches and 50.0-inches.

Twenty-seven significant trees, including those listed above, have diameters greater than 24-inches DBH and are eligible for landmark tree status in the City of Shoreline. All of the Douglas-firs in the study area meet landmark size requirements and comprise two-thirds of all landmark trees inventoried. A landmark tree is defined as “Any healthy tree over 24 inches in diameter at breast height (DBH) that is worthy of long-term protection due to a unique combination of size, shape, age, location, aesthetic quality for its species or any other trait that epitomizes the character of the species, and/or has cultural, historic or ecological importance or is a regional erratic” (SMC 20.20.048). A summary of significant tree species and size is provided in Table 2 below.

Table 2. Summary of tree species and size.

Tree Name	Total Significant	Total* Landmark	Average DBH (In.)	Largest DBH (In.)
<i>Abies grandis</i> (grand fir)	1	1	n/a	26.1
<i>Acer capillipes</i> (red snakebark maple)	1	-	n/a	13.6
<i>Acer circinatum</i> (vine maple)	2	-	6.6	7.0
<i>Acer davidii</i> (David maple)	2	-	16.5	19.5
<i>Acer griseum</i> (paperbark maple)	1	-	n/a	8.2
<i>Azara microphylla</i> (boxlea azara)	1	-	n/a	9.0
<i>Castanea sp.</i> (chestnut)	1	-	n/a	7.6
<i>Cedrus atlantica</i> (atlas cedar)	1	-	n/a	21.4
<i>Cephalotaxus harringtonia</i> (Japanese plum yew)	2	-	7.1	11.0
<i>Cercidiphyllum japonicum</i> (katsura)	1	-	n/a	21.5
<i>Chamaecyparis lawsoniana</i> (Port Orford cedar)	4	-	10.6	12.3
<i>Cornus nuttallii</i> (Pacific dogwood)	5	-	10.3	13.4

<i>Cunninghamia lanceolata</i> (China fir)	1	-	n/a	14.4
<i>Davidia involucrata</i> (dove tree)	1	-	n/a	7.7
<i>Eucalyptus gunnii</i> (cider gum)	1	-	n/a	6.2
<i>Fagus sylvatica</i> (European beech)	1	-	n/a	23.2
<i>Fraxinus sp.</i> (ash)	1	-	n/a	18.8
<i>Juglans mandshurica</i> (Manchurian walnut)	1	-	n/a	22.0
<i>Lithocarpus densiflorus</i> (tan oak)	4	2	30.5	41.7
<i>Pinus contorta</i> (shore pine)	1	-	n/a	14.1
<i>Prunus emarginata</i> (bitter cherry)	1	-	n/a	7.5
<i>Prunus sp.</i> (flowering cherry)	1	-	n/a	9.0
<i>Pseudotsuga menziesii</i> (Douglas-fir)	18	18	37.9	60.3
<i>Pterocarya fraxinifolia</i> (Caucasian wingnut)	21	-	15.8	17.0
<i>Quercus chrysolepis</i> (canyon live oak)	2	-	15.8	19.9
<i>Quercus ilex</i> (holly oak)	1	-	n/a	23.0
<i>Quercus myrsinifolia</i> (Chinese evergreen oak)	1	-	n/a	13.0
<i>Quercus phillyreoides</i> (black ridge oak)	1	-	n/a	9.7
<i>Quercus pontica</i> (Armenian oak)	1	-	n/a	11.6
<i>Quercus sp.</i> (oak)	1	-	n/a	21.1
<i>Rhododendron sp.</i> (rhododendron)	1	-	n/a	11.8
<i>Sequoia sempervirens</i> (redwood)	1	-	n/a	7.0
<i>Sequoiadendron giganteum</i> (giant sequoia)	2	2	61.1	73.6
<i>Taxus baccata</i> (English yew)	2	-	7.8	8.1
<i>Taxus brevifolia</i> (Pacific yew)	2	-	8.1	9.2
<i>Thuja plicata</i> (western red cedar)	9	3	20.2	32.5
<i>Thujopsis dolabrata</i> (elkhorn cedar)	2	-	7.8	8.9
<i>Tilia cordata</i> (littleleaf linden)	2	-	9.4	11.0
<i>Tsuga canadensis</i> (Canadian hemlock)	1	-	n/a	16.8
<i>Tsuga heterophylla</i> (western hemlock)	1	-	n/a	9.6
<i>Tsuga sieboldii</i> (southern Japanese hemlock)	1	-	n/a	8.0
<i>Xanthocyparis nootkatensis</i> (Nootka cypress)	2	1	20.0	29.1
Unknown conifer	1	-	n/a	6.0

Unknown deciduous	1	-	n/a	7.1
TOTAL	91	27	20.0	73.6

* Landmark tree based upon size criteria only.

Off-site Tree Inventory Results

A total of 12 trees (#146-157) located off-site, but in proximity to the proposed project area, were included in the inventory. Three trees (#155, 156, and 157) included in the inventory are not significant due to a condition rating of poor (4) or worse; a total of nine significant off-site trees were inventoried (SMC 20.20.048). Off-site trees are dominated by coniferous species native to the Pacific Northwest.

Western red cedar is the most common off-site tree species, with seven individuals accounting for approximately 78-percent of those inventoried. The average size of off-site trees is estimated to be 25-inches DBH, with trees ranging from approximately 8-inches to 32-inches in diameter. Seven significant trees located near the park are estimated to meet size requirements for landmark tree status.

Local Regulations

The City of Shoreline regulates public trees under Chapter 12.30 *Public Tree Management*. Public trees include those located within the public rights-of-way and city-owned public property (SMC 12.30.010). It is the tree board’s responsibility to make policy recommendations regarding the management of public trees (SMC12.30.020). Per SMC 12.30.010 “it shall be the responsibility of the parks, fleet, and facilities manager (hereafter “manager”) to manage and oversee the planting, care, maintenance, and removal of all trees on public rights-of-way and city-owned public property within the city limits.” Additionally, if critical areas and/or associated buffer are present within, or in proximity, to the proposed park improvements, all trees located within critical areas or buffers are regulated under Chapter 20.80 *Critical Areas*.

Preliminary Tree Impacts Assessment

Based upon the conceptual plan depicting proposed improvements at Kruckeberg Botanic Garden, some significant trees may have impacts that will require their removal. Tree impacts may occur along the alignment of the proposed accessible boardwalk trail where it is routed through forested parts located centrally in the park. Expansion of the existing parking lot located in the western portion of the study area is also proposed. Concept plans do not include details of this area, so it is not clear how extensive tree impacts associated with parking

improvements may be. Potential grading, staging, and site access occurring within critical root zones (CRZ) may also require tree removals.

If construction related activities avoid or minimize intrusion within the CRZ of existing trees and if recommended tree protection measures outlined below are implemented, then trees will not be expected to be impacted with park improvements. It is recommended that further design iterations consider the location of existing significant trees, particularly those that meet landmark tree size requirements. This impact assessment is based upon preliminary park designs and approximate location of significant trees. Further assessment of tree impacts may be needed as the conceptual plan is refined and surveyed tree points are available.

Additionally, several non-significant trees, as well as shrubs and groundcover, are located throughout the botanical garden that have not been included in this preliminary arborist study. Many of these plants are unique or rare specimens that should be prioritized for retention per the direction of Kruckeberg Botanic Garden staff. Further identification and location of such individual trees, shrubs, or groupings of plants is required to ensure their retention as the conceptual design is refined and to guarantee that they are adequately protected throughout the construction phase.

Tree Protection Measures

SMC 20.50.370 *Tree protection standards* outlines the following guidelines for all trees proposed for retention:

- A. *All required tree protection measures shall be shown on the tree protection and replacement plan, clearing and grading plan, or other plan submitted to meet the requirements of this subchapter. Tree protection shall remain in place for the duration of the permit unless earlier removal is addressed through construction sequencing on approved plans.*
- B. *Critical root zones (tree protection zone) as defined by the International Society of Arboriculture shall be protected. No development, fill, excavation, construction materials, equipment staging, or traffic shall be allowed in the critical root zone of trees that are to be retained.*
- C. *Prior to any land disturbance, temporary construction fences must be placed around the tree protection zone to be preserved. If a cluster of trees is proposed for retention, the barrier shall be placed around the edge formed by the drip lines of the trees to be retained. Tree protection shall remain in place for the duration of the permit unless earlier removal is addressed through construction sequencing on approved plans.*

D. *Tree protection barriers shall be a minimum of six feet high, constructed of chain link or similar material, subject to approval by the Director. “Tree Protection Area” signs shall be posted visibly on all sides of the fenced areas. On large or multiple-project sites, the Director may also require that signs requesting subcontractor cooperation and compliance with tree protection standards be posted at site entrances.*

E. *If any construction work needs to be performed inside either the tree drip line, critical root zone, and/or the inner critical root zone, the project arborist will be on site to supervise the work. When excavation must occur within or near the critical root zone, any found roots of three inches or greater in diameter will be cleanly cut to the edge of the trench to avoid ripping of the root.*

F. *Where tree protection zones are remote from areas of land disturbance, and where approved by the Director, alternative forms of tree protection may be used in lieu of tree protection barriers; provided, that protected trees are completely surrounded with continuous rope or flagging and are accompanied by “Tree Leave Area – Keep Out” signs.*

G. *Rock walls shall be constructed around the tree, equal to the dripline, when existing grade levels are lowered or raised by the proposed grading.*

H. *Retain small trees, bushes, and understory plants within the tree protection zone, unless the plant is identified as a regulated noxious weed, a nonregulated noxious weed, or a weed of concern by the King County Noxious Weed Control Board.*

I. *Preventative Mitigation. In addition to the above minimum tree protection measures, the applicant shall support tree protection efforts by employing, as appropriate, the following preventative measures, consistent with best management practices for maintaining the health of the tree:*

- 1. Pruning of visible deadwood on trees to be protected or relocated;*
- 2. Mulching with a layer of four inches to five inches of wood chips in the critical root zones of retained trees; and*
- 3. Ensuring one inch of irrigation or rainfall per week during and immediately after construction and from early May through September until reliable rainfall occurs in the fall.*

Disclaimer

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 physical 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, rain, age, or other causes.

This report is based on the current observable conditions and may not represent future conditions of the trees. Changes in site conditions, including clearing and grading, will alter the condition of remaining trees in a way that is not predictable.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,

A handwritten signature in black ink, consisting of the letters 'RH' in a cursive, stylized font.

Roen Hohlfeld
Ecologist / ISA Certified Arborist® PN-8562A

Enclosures

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
5000	Pseudotsuga menziesii (Douglas-fir)	E	1	24.2	120	17	Good	yes	yes
5001	Pseudotsuga menziesii (Douglas-fir)	E	1	25.5	120	15	Good	yes	yes
5002	Pseudotsuga menziesii (Douglas-fir)	E	1	27.1	120	16	Good	yes	yes
5003	Pseudotsuga menziesii (Douglas-fir)	E	1	28.1	120	16	Good	yes	yes
5004	Pseudotsuga menziesii (Douglas-fir)	E	1	29.6	145	21	Good	yes	yes
5005	Pseudotsuga menziesii (Douglas-fir)	E	1	30.3	120	20	Fair	yes	yes
5006	Cedrus atlantica (Atlas cedar)	E	1	21.4	85	16	Good	yes	no
5007	Pinus contorta (Shore pine)	E	1	14.1	80	15	Fair	yes	no
5008	Prunus emarginata (Bitter cherry)	D	1	7.5	50	11	Fair	yes	no
5009	Eucalyptus gunnii (Cider gum)	E	1	6.2	20	6	Fair	yes	no
5010	Thuja plicata (Western red cedar)	E	1	18.1	50	15	Good	yes	no
5011	Thujopsis dolabrata (Elkhorn cedar)	E	2	6.7	25	7	Good	yes	no
5012	Acer davidii (David maple)	D	1	19.5	50	23	Good	yes	no
5013	Rhododendron sp. (Rhododendron species)	E	5	11.8	20	13	Good	yes	no
5014	Pseudotsuga menziesii (Douglas-fir)	E	1	32.0	155	16	Good	yes	yes
5015	unk.<deciduous> (Deciduous, unknown)	D	3	7.1	25	12	Good	yes	no
5016	Cornus kousa (Kousa dogwood)	D	4	12.3	35	20	Good	yes	no
5017	Thuja plicata (Western red cedar)	E	1	28.5	80	13	Good	yes	yes
5018	Thuja plicata (Western red cedar)	E	1	32.5	80	15	Good	yes	yes
5019	Thuja plicata (Western red cedar)	E	1	20.0	70	10	Good	yes	no
5020	Thuja plicata (Western red cedar)	E	1	25.5	70	10	Very Poor	no	no
5021	Quercus ilex (Holly oak)	D	1	23.0	65	17	Good	yes	no
5022	Thuja plicata (Western red cedar)	E	1	25.6	65	15	Fair	yes	yes
5023	Thuja plicata (Western red cedar)	E	1	13.9	65	12	Fair	yes	no
5024	Tsuga heterophylla (Western hemlock)	E	1	9.6	60	10	Fair	yes	no
5025	Lithocarpus densiflorus (Tan oak)	E	1	23.3	70	29	Good	yes	no
5026	Quercus chrysolepis (Canyon live oak)	E	1	19.9	70	14	Good	yes	no
5027	Cornus kousa (Kousa dogwood)	D	1	10.4	45	16	Good	yes	no
5028	Cephalotaxus harringtonia (Japanese plum yew)	E	3	11.0	25	10	Good	yes	no
5029	Azara microphylla (Boxleaf azara)	E	2	7.9	50	6	Very Poor	no	no
5030	Azara microphylla (Boxleaf azara)	E	1	9.0	50	8	Fair	yes	no
5031	Taxus baccata (English yew)	E	1	8.1	15	12	Good	yes	no
5032	Fagus sylvatica (European beech)	D	1	23.2	65	28	Good	yes	no
5033	Lithocarpus densiflorus (Tan oak)	E	1	22.7	70	24	Good	yes	no
5034	Acer griseum (Paperbark maple)	D	1	8.2	50	11	Good	yes	no
5035	Quercus pontica (Armenian oak)	D	3	11.6	20	10	Good	yes	no
5036	Xanthocyparis nootkarensis 'pendula' (Nootka cypress)	E	1	10.8	60	9	Good	yes	no
5037	Juglans mandshurica (Manchurian walnut)	D	2	22.0	40	21	Good	yes	no
5038	Quercus myrsinifolia (Chinese evergreen oak)	E	3	13.0	30	18	Good	yes	no

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
5039	Lithocarpus densiflorus (Tan oak)	E	1	34.1	80	22	Excellent	yes	yes
5040	Cornus kousa (Kousa dogwood)	D	1	9.5	25	18	Good	yes	no
5041	Cephalotaxus harringtonia (Japanese plum yew)	E	2	7.1	15	9	Good	yes	no
5042	Quercus chrysolepis (Canyon live oak)	E	1	11.7	20	14	Good	yes	no
5043	Quercus phillyreoides (Black ridge oak)	E	4	9.7	35	13	Fair	yes	no
5044	Xanthocyparis nootkatensis, (Nootka cypress)	E	1	29.1	70	21	Good	yes	yes
5045	Sequoiadendron giganteum (Giant sequoia)	E	1	73.6	115	24	Good	yes	yes
5046	Betula pendula (European white birch)	D	1	16.9	25	7	Poor	no	no
5047	Acer circinatum (Vine maple)	D	2	6.1	35	9	Good	yes	no
5048	Cornus nuttallii (Pacific dogwood)	D	1	8.4	55	12	Good	yes	no
5049	Thuja plicata (Western red cedar)	E	1	14.3	45	12	Good	yes	no
5050	Sequoia sempervirens (Redwood)	E	1	7.0	30	6	Good	yes	no
5051	Castanea sp. (Chestnut)	D	1	7.6	55	10	Fair	yes	no
5052	Thuja plicata (Western red cedar)	E	1	12.3	50	12	Good	yes	no
5053	Acer capillipes (Red snakebark maple)	D	1	13.7	60	20	Fair	yes	no
5054	Thuja plicata (Western red cedar)	E	1	16.6	50	11	Good	yes	no
5055	Tsuga sieboldii (Southern Japanese hemlock)	E	1	8.0	30	13	Good	yes	no
5056	Chamaecyparis lawsoniana (Port Orford cedar)	E	1	21.5	70	12	Good	yes	no
5057	Prunus sp.<flowering cherry> (Cherry, flowering)	D	1	9.0	40	15	Good	yes	no
5058	Pseudotsuga menziesii (Douglas-fir)	E	1	35.1	140	18	Good	yes	yes
5059	Pseudotsuga menziesii (Douglas-fir)	E	1	35.6	120	18	Good	yes	yes
5060	Cornus nuttallii (Pacific dogwood)	D	1	7.9	45	18	Fair	yes	no
5090	unk. <evergreen> (Evergreen, unknown)	E	1	6.0	30	7	Good	yes	no
5061	Cornus nuttallii (Pacific dogwood)	D	1	11.6	70	14	Good	yes	no
5091	Sequoiadendron giganteum (Giant sequoia)	E	1	48.5	145	20	Good	yes	yes
5062	Pseudotsuga menziesii (Douglas-fir)	E	1	38.0	160	22	Good	yes	yes
5092	Quercus sp. (Oak species)	D	1	21.1	105	18	Good	yes	no
5063	Cercidiphyllum japonicum (Katsura)	D	1	8.2	40	10	Good	yes	no
5093	Tilia cordata (Littleleaf linden)	D	1	7.8	60	12	Good	yes	no
5064	Pseudotsuga menziesii (Douglas-fir)	E	1	40.4	175	24	Good	yes	yes
5065	Tsuga canadensis (Canadian hemlock)	E	1	16.8	60	14	Good	yes	no
5066	Acer circinatum (Vine maple)	D	3	7.0	45	14	Good	yes	no
5067	Lithocarpus densiflorus (Tan oak)	E	2	41.7	80	42	Good	yes	yes
5068	Taxus baccata (English yew)	E	1	7.4	15	14	Fair	yes	no
5069	Taxus brevifolia (Pacific yew)	E	1	7.0	15	12	Fair	yes	no
5070	Pseudotsuga menziesii (Douglas-fir)	E	1	42.9	180	24	Good	yes	yes
5071	Pseudotsuga menziesii (Douglas-fir)	E	1	43.0	165	26	Good	yes	yes
5072	Tilia cordata (Littleleaf linden)	D	1	11.0	55	22	Good	yes	no
5073	Taxus brevifolia (Pacific yew)	E	1	9.2	25	14	Fair	yes	no
5074	Cunninghamia lanceolata (China fir)	E	1	14.4	60	14	Fair	yes	no

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
5075	Pterocarya fraxinifolia (Caucasian wingnut)	D	1	14.6	55	16	Good	yes	no
5076	Pseudotsuga menziesii (Douglas-fir)	E	1	44.8	125	32	Excellent	yes	yes
5077	Pseudotsuga menziesii (Douglas-fir)	E	1	47.5	175	26	Good	yes	yes
5078	Cornus nuttallii (Pacific dogwood)	D	1	10.1	45	13	Good	yes	no
5079	Pseudotsuga menziesii (Douglas-fir)	E	1	49.1	150	20	Good	yes	yes
5080	Pseudotsuga menziesii (Douglas-fir)	E	1	49.2	165	30	Good	yes	yes
5081	Cornus nuttallii (Pacific dogwood)	D	1	13.4	65	14	Good	yes	no
5082	Davidia involucrata (Dove tree)	D	1	7.7	60	10	Good	yes	no
5083	Thujaopsis dolabrata (Elkhorn cedar)	E	2	8.9	45	10	Good	yes	no
5084	Cornus kousa (Kousa dogwood)	D	1	10.1	35	20	Good	yes	no
5085	Pterocarya fraxinifolia (Caucasian wingnut)	D	1	17.0	70	16	Good	yes	no
5086	Fraxinus sp. (Ash species)	D	1	18.8	55	28	Good	yes	no
5087	Acer davidii var. grosseri (David maple)	D	1	13.4	45	22	Good	yes	no
5088	Abies grandis (Grand fir)	E	1	26.1	130	14	Good	yes	yes
5089	Pseudotsuga menziesii (Douglas-fir)	E	1	60.3	165	30	Good	yes	yes
5090	unk. <evergreen> (Evergreen, unknown)	E	1	6.0	30	7	Good	yes	no
5091	Sequoiadendron giganteum (Giant sequoia)	E	1	48.5	145	20	Good	yes	yes
5092	Quercus sp. (Oak species)	D	1	21.1	105	18	Good	yes	no
5093	Tilia cordata (Littleleaf linden)	D	1	7.8	60	12	Good	yes	no

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
146	Pseudotsuga menziesii (Douglas-fir)	E	1	32.0	120	18	Good	yes	yes
147	Thuja plicata (Western red cedar)	E	1	30.0	80	12	Fair	yes	yes
148	Thuja plicata (Western red cedar)	E	1	30.0	80	15	Good	yes	yes
149	Thuja plicata (Western red cedar)	E	1	22.0	80	15	Good	yes	no
150	Thuja plicata (Western red cedar)	E	1	28.0	70	15	Good	yes	yes
151	Thuja plicata (Western red cedar)	E	1	14.0	70	15	Good	yes	no
152	Thuja plicata (Western red cedar)	E	1	16.0	50	15	Fair	yes	no
153	Thuja plicata (Western red cedar)	E	1	26.0	70	15	Good	yes	yes
154	Pseudotsuga menziesii (Douglas-fir)	E	1	28.0	150	30	Good	yes	yes
155	Arbutus menziesii (Pacific madrone)	E	1	12.0	35	15	Poor	no	no
156	Acer macrophyllum (Bigleaf maple)	D	1	8.0	45	10	Poor	no	no
157	Arbutus menziesii (Pacific madrone)	E	1	12.0	65	15	Very Poor	no	no




Tree Inventory Sketch – Kruckeberg Botanic Garden

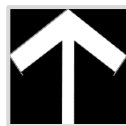
Site Address: 20312 15th Avenue NW; Shoreline, WA
Parcel Number: 012603-9219, -9378
Site Visit Date: September 12 and 15, 2022

Prepared for: City of Shoreline
TWC Ref. No.: 220722



LEGEND

-  Subject Parcel
-  Study Area
-  Significant Tree



Note: Field sketch only. Features depicted are approximate and not to scale. All observations were made from within the subject parcel; adjoining private properties were not entered. Significant trees are marked with white flagging labeled with a unique identification number (trees #5000-5089) affixed to, or adjacent to the tree trunk. Offsite trees were not flagged but given a unique identification number (#146-157).