

November 7, 2022

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

Re: City of Shoreline Parks Bond Projects – James Keough Park Preliminary Arborist Report

The Watershed Company Reference Number: 220722

Dear Jacob:

On September 8th and 9th, 2022, ISA Certified Arborists® from The Watershed Company visited James Keough Park located at 2350 N 167th Street (parcel #5727500066) 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 the entirety of James Keough Park, including offsite trees located in proximity to proposed improvements (see Figure 1).



Figure 1. City of Shoreline concept design for James Keough Park (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 James Keough Park. Per conceptual plans, improvements will be made throughout the park with main features including an off-leash dog park, playground, picnic shelter, a small restroom facility, parking improvements, and new walkways. Additional amenities such as picnic tables, benches, and new plantings are also proposed.

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). A round one-and-one-quarter inch-wide, numbered aluminum tag was affixed to 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 tagged. 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 and Off-site Tree Inventory Table contain 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

James Keough Park is located in the south-central portion of the City of Shoreline (Section 08, Township 26 North, Range 04 East). Surrounding land use is predominantly single-family residences with limited tree canopy. Interstate 5 is located immediately east of the park and the Shoreline Recycling & Transfer Station facility is located immediately adjacent to the south. The park totals approximately 3.10 acres in size.

The site is characterized by a large lawn area with rolling hills and limited trees rooted around the perimeter. A derelict tennis court is located in the southern portion of the site and a paved access road is located offsite immediately south of the parcel.

Tree Inventory Results

A total of 45 trees (#1037-1081) located within the park boundaries were included in the inventory. Two trees (#1037 and 1078) included in the inventory are not significant due to a condition rating of poor (4) or worse; a total of 43 significant trees were inventoried (SMC 20.20.048). Inventoried trees located within park boundaries are a mix of coniferous and deciduous species, some native to the Pacific Northwest. Shore pine (*Pinus contorta*) and Lombardy poplar (*Populus nigra 'Italica'*) comprise 88-percent of the significant trees in the park, with 27 and 11 individuals, respectively. Significant trees were generally in good (2) to fair (3) condition.

Overall, the average DBH of significant trees within the park is 15.7-inches. Two Lombardy poplars (#1076 and 1077) are the largest significant trees inventoried, with DBH measurements of 26.7 and 33.0, respectively. With diameters greater than 24-inches DBH, both trees are eligible for landmark tree status in the City of Shoreline. 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>Arbutus menziesii</i> (Pacific madrone)	1	-	n/a	19.0
<i>Pinus contorta</i> (shore pine)	27	-	13.7	19.2
<i>Populus nigra 'Italica'</i> (Lombardy poplar)	11	2	21.6	33.0
<i>Prunus emarginata</i> (bitter cherry)	1	-	n/a	7.0
<i>Prunus sp.</i> (flowering cherry)	1	-	n/a	8.3
<i>Robinia pseudoacacia</i> (black locust)	1	-	n/a	18.4
<i>Salix scouleriana</i> (Scouler’s willow)	1	-	n/a	16.0
TOTAL	43	2	15.7	33.0

* Landmark tree based upon size criteria only.

Off-site Tree Inventory Results

A total of 47 trees (#22-68) located off-site, but in proximity to the proposed project area, were included in the inventory. Off-site trees are dominated by coniferous species. Fourteen different species, both native and non-native to the Pacific Northwest, were identified.

Douglas-fir (*Pseudotsuga menziesii*) is the most common off-site tree species, with 17 individuals. The average size of off-site trees is estimated to be 16-inches DBH, with trees ranging from approximately 6-inches to 34-inches in diameter. Six 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, six significant trees in James Keough Park and 11 off-site trees are expected to have indirect impacts. Indirect impacts appear to result mainly from installation of new walkways and potential grading within critical root zones. Of the trees anticipated to receive indirect impacts, two offsite trees (#47 and 48) meet size requirements for landmark trees. Indirect impacts are expected to be minor enough to allow for retention, with the exception of one significant tree (#1039) that will likely require removal.

Additionally, ten significant trees will be directly impacted by proposed park improvements and removal will be necessary. The majority of direct impacts appear to occur in the south portion of the park where proposed parking improvements will be made. No additional impacts are expected to occur to remaining significant trees. However, 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. A summary of anticipated tree impacts is provided in Table 3.

Table 3. Summary of anticipated tree impacts.

Tree Tag	Direct Impact	Indirect Impact	Removal Expected
22	no	yes	no
23	no	yes	no
24	no	yes	no
25	no	yes	no
26	no	yes	no
27	no	yes	no
28	no	yes	no
39	no	yes	no
47	no	yes	no

48	no	yes	no
68	no	yes	no
1039	no	yes	yes
1041	no	yes	no
1042	no	yes	no
1043	no	yes	no
1044	no	yes	no
1045	no	yes	no
1051	yes	n/a	yes
1052	yes	n/a	yes
1053	yes	n/a	yes
1054	yes	n/a	yes
1055	yes	n/a	yes
1056	yes	n/a	yes
1057	yes	n/a	yes
1058	yes	n/a	yes
1059	yes	n/a	yes
1066	yes	n/a	yes
1081	no	yes	no

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,



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

Enclosures

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
1037	Malus domestica (Apple)	D	1	10.0	30	10	Poor	no	no
1038	Pinus contorta (Shore pine)	E	2	16.6	45	15	Fair	yes	no
1039	Pinus contorta (Shore pine)	E	1	14.7	50	10	Good	yes	no
1040	Pinus contorta (Shore pine)	E	1	7.6	35	10	Good	yes	no
1041	Pinus contorta (Shore pine)	E	1	13.5	45	15	Fair	yes	no
1042	Pinus contorta (Shore pine)	E	1	10.8	20	10	Fair	yes	no
1043	Pinus contorta (Shore pine)	E	1	18.7	45	15	Good	yes	no
1044	Pinus contorta (Shore pine)	E	1	12.0	30	5	Fair	yes	no
1045	Pinus contorta (Shore pine)	E	1	10.8	30	10	Good	yes	no
1046	Pinus contorta (Shore pine)	E	1	11.6	40	10	Good	yes	no
1047	Pinus contorta (Shore pine)	E	1	13.1	50	10	Fair	yes	no
1048	Pinus contorta (Shore pine)	E	1	12.5	45	15	Good	yes	no
1049	Pinus contorta (Shore pine)	E	1	16.0	40	10	Fair	yes	no
1050	Pinus contorta (Shore pine)	E	1	13.5	40	20	Fair	yes	no
1051	Pinus contorta (Shore pine)	E	1	13.5	45	15	Fair	yes	no
1052	Pinus contorta (Shore pine)	E	1	10.8	35	10	Fair	yes	no
1053	Pinus contorta (Shore pine)	E	1	13.6	45	10	Fair	yes	no
1054	Pinus contorta (Shore pine)	E	1	16.4	35	15	Fair	yes	no
1055	Arbutus menziesii (Pacific madrone)	E	1	19.0	65	20	Good	yes	no
1056	Pinus contorta (Shore pine)	E	1	14.3	50	15	Fair	yes	no
1057	Pinus contorta (Shore pine)	E	1	14.7	55	20	Fair	yes	no
1058	Pinus contorta (Shore pine)	E	1	13.0	60	15	Fair	yes	no
1059	Pinus contorta (Shore pine)	E	1	9.0	50	10	Fair	yes	no
1060	Pinus contorta (Shore pine)	E	1	12.5	40	10	Fair	yes	no
1061	Pinus contorta (Shore pine)	E	1	18.0	40	20	Fair	yes	no
1062	Pinus contorta (Shore pine)	E	1	14.1	55	20	Fair	yes	no
1063	Pinus contorta (Shore pine)	E	1	13.2	40	15	Fair	yes	no
1064	Pinus contorta (Shore pine)	E	1	15.0	45	15	Fair	yes	no
1065	Salix scouleriana (Scouler's willow)	D	3	16.0	40	20	Fair	yes	no
1066	Pinus contorta (Shore pine)	E	1	19.2	55	15	Fair	yes	no
1067	Populus nigra 'Italica' (Lombardy poplar)	D	1	11.1	65	5	Fair	yes	no
1068	Populus nigra 'Italica' (Lombardy poplar)	D	1	23.0	90	10	Excellent	yes	no
1069	Populus nigra 'Italica' (Lombardy poplar)	D	1	22.9	90	10	Good	yes	no
1070	Populus nigra 'Italica' (Lombardy poplar)	D	1	19.2	90	5	Good	yes	no
1071	Populus nigra 'Italica' (Lombardy poplar)	D	1	14.0	75	10	Good	yes	no
1072	Populus nigra 'Italica' (Lombardy poplar)	D	1	25.1	90	5	Good	yes	yes
1073	Populus nigra 'Italica' (Lombardy poplar)	D	1	19.4	90	5	Good	yes	no
1074	Populus nigra 'Italica' (Lombardy poplar)	D	1	21.7	90	5	Good	yes	no
1075	Populus nigra 'Italica' (Lombardy poplar)	D	1	21.0	75	5	Good	yes	no

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
1076	Populus nigra 'Italica' (Lombardy poplar)	D	2	26.7	90	5	Good	yes	yes
1077	Populus nigra 'Italica' (Lombardy poplar)	D	1	33.0	90	15	Good	yes	yes
1078	Prunus emarginata (Bitter cherry)	D	2	10.1	35	10	Poor	no	no
1079	Prunus sp.<flowering cherry> (Cherry, flowering)	D	2	8.3	25	10	Good	yes	no
1080	Prunus emarginata (Bitter cherry)	D	1	7.0	25	5	Fair	yes	no
1081	Robinia pseudoacacia (Black locust)	D	1	18.4	45	15	Excellent	yes	no

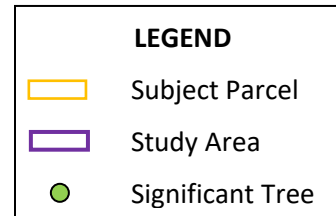
TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
22	Cryptomeria japonica (Japanese cedar)	E	1	14.0	45	10	Good	yes	no
23	Pseudotsuga menziesii (Douglas-fir)	E	1	16.0	75	15	Excellent	yes	no
24	Picea pungens (Colorado spruce)	E	1	10.0	35	10	Fair	yes	no
25	Picea pungens (Colorado spruce)	E	1	8.0	30	10	Fair	yes	no
26	Picea pungens (Colorado spruce)	E	1	8.0	30	10	Fair	yes	no
27	Picea pungens (Colorado spruce)	E	1	10.0	30	10	Fair	yes	no
28	xHesperotropis leylandii (Leyland cypress)	E	1	14.0	45	10	Fair	yes	no
29	xHesperotropis leylandii (Leyland cypress)	E	1	24.0	45	15	Good	yes	yes
30	xHesperotropis leylandii (Leyland cypress)	E	1	24.0	45	15	Good	yes	yes
31	xHesperotropis leylandii (Leyland cypress)	E	1	24.0	45	15	Fair	yes	yes
32	Platanus occidentalis (American sycamore)	D	1	12.0	45	15	Good	yes	no
33	Pinus contorta (Shore pine)	E	1	12.0	40	15	Fair	yes	no
34	Pinus contorta (Shore pine)	E	1	14.0	35	10	Fair	yes	no
35	Pseudotsuga menziesii (Douglas-fir)	E	1	14.0	55	15	Fair	yes	no
36	Pseudotsuga menziesii (Douglas-fir)	E	1	16.0	65	15	Good	yes	no
37	Pinus contorta (Shore pine)	E	1	10.0	50	10	Good	yes	no
38	Populus balsamifera (Cottonwood)	D	1	18.0	65	20	Excellent	yes	no
39	Picea sitchensis (Sitka spruce)	E	1	18.0	45	20	Fair	yes	no
40	Pseudotsuga menziesii (Douglas-fir)	E	1	26.0	85	20	Good	yes	yes
41	Pseudotsuga menziesii (Douglas-fir)	E	1	18.0	65	15	Excellent	yes	no
42	Pseudotsuga menziesii (Douglas-fir)	E	1	18.0	65	15	Excellent	yes	no
43	Thuja plicata (Western red cedar)	E	1	18.0	70	15	Excellent	yes	no
44	Prunus cerasifera 'thundercloud' (Thundercloud flowering plum)	D	1	12.0	30	10	Good	yes	no
45	Prunus cerasifera 'thundercloud' (Thundercloud flowering plum)	D	2	17.0	30	10	Good	yes	no
46	Pyrus pyrifolia (Asian pear)	D	1	7.0	20	10	Excellent	yes	no
47	Arbutus menziesii (Pacific madrone)	E	2	33.9	35	20	Good	yes	yes
48	Pseudotsuga menziesii (Douglas-fir)	E	1	34.0	90	20	Good	yes	yes
49	Pseudotsuga menziesii (Douglas-fir)	E	1	6.0	30	15	Excellent	yes	no
50	Pinus contorta (Shore pine)	E	1	16.0	45	15	Good	yes	no
51	Pinus contorta (Shore pine)	E	1	18.0	50	10	Good	yes	no
52	Prunus emarginata (Bitter cherry)	D	1	14.0	50	15	Good	yes	no
53	Prunus emarginata (Bitter cherry)	D	1	6.0	40	10	Good	yes	no
54	Pseudotsuga menziesii (Douglas-fir)	E	1	14.0	45	15	Good	yes	no
55	Salix scouleriana (Scouler's willow)	D	2	14.4	35	15	Good	yes	no
56	Pinus contorta (Shore pine)	E	1	18.0	35	15	Good	yes	no
57	Pinus contorta (Shore pine)	E	1	16.0	40	15	Excellent	yes	no
58	Pinus contorta (Shore pine)	E	1	16.0	45	10	Good	yes	no
59	Pseudotsuga menziesii (Douglas-fir)	E	1	20.0	55	20	Excellent	yes	no
60	Pinus contorta (Shore pine)	E	1	14.0	30	10	Fair	yes	no

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	LANDMARK
61	Pseudotsuga menziesii (Douglas-fir)	E	1	22.0	50	20	Excellent	yes	no
62	Pseudotsuga menziesii (Douglas-fir)	E	1	16.0	50	20	Excellent	yes	no
63	Pseudotsuga menziesii (Douglas-fir)	E	1	10.0	55	15	Excellent	yes	no
64	Pseudotsuga menziesii (Douglas-fir)	E	1	12.0	60	15	Excellent	yes	no
65	Pseudotsuga menziesii (Douglas-fir)	E	1	14.0	60	15	Excellent	yes	no
66	Pseudotsuga menziesii (Douglas-fir)	E	1	18.0	65	20	Excellent	yes	no
67	Pseudotsuga menziesii (Douglas-fir)	E	1	10.0	20	10	Fair	yes	no
68	Picea pungens (Colorado spruce)	E	1	12.0	35	15	Good	yes	no

Tree Inventory Sketch – James Keough Park

Site Address: 2350 N 167 Street; Shoreline, WA
Parcel Number: 5727500066
Site Visit Date: September 8 and 9, 2022

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



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 1-1/4 inch round aluminum tags with a unique identification number (#1037-1081) permanently affixed to the tree trunk. Offsite trees were not tagged but given a unique identification number (#22-68).