

## 4 ENVIRONMENTAL SITE ASSESSMENT

Corvidae completed a site visit on October 26<sup>th</sup>, 2022, and May 10<sup>th</sup>, 2023. Photographs of the property are included as Appendix A.

### 4.1 LAND USE

The property has historically been used for agriculture (e.g., grazing land). There is an existing residence near the centre of the property and several accessory buildings. The property is bound by Braefoot Road to the west and residential properties to the east, north, and south. There are agricultural properties to the west of Braefoot Road.

### 4.2 CLIMATE AND BIOGEOCLIMATIC ZONE

The property is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm) (BC CDC 2023b). The CDFmm occurs at low elevations (<150 m) along southeast Vancouver Island, the southern Gulf Islands, and part of the Sunshine Coast. The CDFmm has the mildest climate in Canada. This subzone has a long growing season with warm, dry summers and mild, wet winters.

### 4.3 TERRAIN AND SOILS

Soils in the CDF biogeoclimatic zone are generally derived from morainal, colluvial, and marine deposits, and are typically Brunisols, grading with increased precipitation to Humo-Ferric Podzols (Nuszdorfer *et al.* 1991). The terrain peaks in the southeast corner of the property and slopes toward northwest. In the north is a depressional area which may have historically served as a drainage corridor but is not considered a watercourse in its current state.

### 4.4 VEGETATION

The property occurs within a degraded Garry oak meadow ecosystem with poor conditions due to the invasive and agronomic species. This area is identified as "Woodland" by the Sensitive Ecosystem Inventory (SEI) project (Ward *et al.*, 1998). However, it is more accurately described as Other Important Ecosystem as the area has been substantially altered by human use, but still has significant biological and ecological value (MOE 2006). The CRD mapped Woodland polygon is shown in Figure 1. 

The tree layer in Woodland Garry oak ecosystems is dominated by Garry oak with occasional Douglas-fir and can include arbutus. The shrub layer is often composed of snowberry, oceanspray, baldhip rose, and hairy honeysuckle. Garry oak meadows support a wide variety of herbs including common and great camas, death camas, shooting star, chocolate lily, white fawn lily, spring gold, and many other species. Common moss species include electrified cat's tail moss and Oregon beaked moss.

There are 120 bylaw protected trees on the property, most of which are mature Garry oak (> 80 years old) with the occasional Douglas-fir. The shrub layer is sparse, and the herb layer is dominated by exotic and invasive species due to livestock grazing. The property is dominated by exotic grasses such as Kentucky bluegrass, orchard grass, and sweet vernal grass, English daisy, lemon balm, and Spanish bluebell. Some native herbaceous species remain in isolated patches, such as small camas, broad-leaved shooting star, pacific sanicle, miner's lettuce, and small-flowered woodland star.



violet, and propertius duskywing are typically associated with Garry oak ecosystems but the likelihood of occurrence is very low due to historic disturbance. Further, a detailed vegetation assessment was conducted during the spring and none of these species were observed.

**Table 3. Species and ecosystem at risk occurrences within 2 kilometres of 4015 Braefoot Road**

Common Name	Scientific Name	BC Provincial Status <sup>1</sup>	SARA Schedule 1 Status <sup>2</sup>
<b>Plant Species</b>			
Vancouver Island beggarticks	<i>Bidens amplissima</i>	Blue	Special Concern
Banded cord-moss	<i>Entosthodon fascicularis</i>	Blue	Special Concern
Fern-leaved desert-parsley	<i>Lomatium dissectum</i>	Red	N/A
Foothill sedge	<i>Carex tumulicola</i>	Yellow	Endangered
Graceful cinquefoil	<i>Potentilla gracilis</i> var. <i>gracilis</i>	Red	N/A
Purple sanicle	<i>Sanicula bipinnatifida</i>	Red	Threatened
Twisted oak moss	<i>Syntrichia laevipila</i>	Blue	Special Concern
White meconella	<i>Meconella oregana</i>	Red	Endangered
Yellow montane violet	<i>Viola praemorsa</i> var. <i>praemorsa</i>	Red	Endangered
<b>Animal Species</b>			
Common Ringlet, insulana subspecies	<i>Coenonympha californica insulana</i>	Red	N/A
Green Heron	<i>Butorides virescens</i>	Blue	N/A
Painted Turtle - Pacific Coast Population	<i>Chrysemys picta bellii</i>	Red	Threatened
Propertius Duskywing	<i>Erynnis propertius</i>	Red	N/A
Western Bumble Bee	<i>Bombus occidentalis</i>	Blue	N/A
<b>Ecosystems</b>			
Douglas-fir / Arbutus	<i>Pseudotsuga menziesii</i> / <i>Arbutus menziesii</i>	Red	N/A
Douglas-fir / dull Oregon-grape	<i>Pseudotsuga menziesii</i> / <i>Mahonia nervosa</i>	Red	N/A
Garry oak / California brome	<i>Quercus garryana</i> / <i>Bromus carinatus</i>	Red	N/A
Garry oak / Oceanspray	<i>Quercus garryana</i> / <i>Holodiscus discolor</i>	Red	N/A
Red alder / Slough sedge [black cottonwood]	<i>Alnus rubra</i> / <i>Carex obnupta</i> [ <i>Populus trichocarpa</i> ]	Red	N/A
Western Redcedar / Osoberry	<i>Thuja plicata</i> / <i>Oemleria cerasiformis</i>	Red	N/A
Western redcedar / Vanilla-leaf	<i>Thuja plicata</i> / <i>Achlys triphylla</i>	Red	N/A

<sup>1</sup> BC CDC 2023a

<sup>2</sup> Government of Canada 2023





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July 30, 2024  
PLANNING DEPT.  
DISTRICT OF SAANICH

July 10, 2024

S. 22  
Email: S. 22

Dear S. 22:

Re: 4015 Braefoot Rd, Saanich

As requested, please find an updated report of our comparative tree-impact analysis of two proposed development concepts for the above property. Also included is a description of the methodology used to complete the analysis. A Tree Impact Plan drawing of each concept is also attached.

There are 125 trees currently growing on the site or its boundaries, 120 of which are bylaw protected. The large majority of these trees are mature or over-mature Garry oaks and appear relatively even-aged.

The two development concepts consist of the following:

1. a single-family layout consisting of six strata lots (with a strata road, common property) two fee-simple lots and associated site servicing;
2. a multi-family townhome strata layout with a strata road, common property and site servicing.

**Single-Family Concept Tree Impacts:** Our analysis of the tree impacts associated with the first concept indicates that 46 trees would need to be removed (or 37% of the on-site tree resource), 37 of which are viable, bylaw-protected trees (or 31% of the bylaw-protected tree fraction). The remaining 9 trees are dead, dying or dangerous (5) or not protected under the current tree bylaw (4).<sup>1</sup>

92 tree replacements are required to mitigate the removal of 37 bylaw-protected trees, which exceeds the District's Urban Forest Strategy policy objective of 61 trees to ensure no net tree loss over time.

**Multi-Family Townhouse Tree Impacts:** Our analysis of the tree impacts associated with the multi-family plan attached below indicates that 69 trees would need to be removed (or 55% of the overall tree resource), 60 of which are viable, bylaw-protected trees (or 50% of the bylaw-protected tree fraction). The remaining 9 trees are dead, dying or dangerous (5) or not protected under the current tree bylaw (4).

152 tree replacements are required to mitigate the removal of the 60 viable bylaw-protected trees, which exceeds the District's Urban Forest Strategy policy objective of 68 trees to ensure no net tree loss over time.

*Don't necessarily need to be removed*

<sup>1</sup> As the preferred option on the part of the developer and Saanich Planning, the analysis of the multi-family concept has been developed to a greater level detail and, as a consequence, has a more accurate and/or comprehensive indication of anticipated tree removals than the single-family concept.



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	<b>OPTION 1: Single-Family</b>	<b>OPTION 2: Multi-Family</b>
	<b># of Tree Removals</b>	<b>% of Tree Class</b>
<b>All Anticipated Tree Removals</b>	46	37%
<b>Protected Tree Removals</b>	37	31%

**Discussion:**

Our analysis indicates that the multi-family concept results in the loss of 18% more mature oaks than the single-family concept. Both concepts allow for good urban forest canopy connectivity along the north, east and southern boundaries of the site. The single-family concept provides additional connectivity from north-to-south through the interior of the site.

In response to preliminary comments from Saanich Parks, the following refinements have been made to the site planning and design of the multi-family concept.

- As much as possible, development has been sited in areas of surficial bedrock, while proposed tree planting sites are located in areas with deeper soils.
- A broad range of native tree, shrub and herb species have been included in the planting plan to promote urban biodiversity, particularly for pollinating insects.
- While it is true that the multi-family option retains fewer trees, it balances meaningful levels of tree preservation and landscape restoration with a significantly greater density in support of the Province and District's current housing policy direction.
- As much as possible, the project arborist has worked with the developer and the project's design consultants to minimize tree impacts as much as possible through the site planning and design process, which must also consider and try to integrate a broad range of non-tree related factors.
- A complete summary of tree-statistics is now provided for the multi-family option.

Both concepts result in significant mitigation with roughly twice the number of new trees being planted than removed. The District's current Urban Forest Strategy policy objective of no net loss for both concepts is significantly exceeded with both concepts.

The removal of mature and over-mature trees combined with high levels of new tree stock will enhance the diversity of age-classes on the site and improve the sustainability of the woodland over time. The range of native understory woodland species proposed in the Corvidae biologist's report will restore this currently degraded woodland ecosystem to a higher functioning and more attractive condition.

While a natural state covenant is not recommended by the biologist, a tree protection covenant may be supported. A tree protection covenant would allow access to the woodland on common property for maintenance and in combination with defined trails allow for gentle recreational access. Given the rapid spread of invasive plant species within the district, it is important to encourage maintenance of the woodland understory, as recommended in the Corvidae report.



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SARA Schedule 1 SAANICH

Environmental Assessment for 4015 Braefoot Road

Common Name	Scientific Name	BC Provincial Status <sup>1</sup>	SARA Schedule 1 Status <sup>2</sup>
Sword fern	<i>Polystichum munitum</i>	Yellow	--
Thistle sp.	<i>Cirsium sp.</i>	Exotic	--
White clover	<i>Trifolium repens</i>	Exotic	--
Yellow archangel	<i>Lamium galeobdolon</i>	Invasive; Exotic	--

<sup>1</sup> BC CDC 2023a

<sup>2</sup> Government of Canada 2023

#### 4.5 WILDLIFE

Existing trees on the property provide nesting and roosting habitat for birds, including migratory songbirds, year-round resident species, raptors, and owls. No nests were observed during the site assessment, though several songbirds, and a bald eagle were observed on or near the property. The meadow provides habitat for deer, small mammals, reptiles, and invertebrates.

During the site assessment the species in Table 2 were observed on or near the property.

Table 2. Wildlife species observed on site during May 10<sup>th</sup>, 2023 field visit

Common Name	Scientific Name	BC Provincial Status <sup>1</sup>	SARA Schedule 1 Status <sup>2</sup>
American robin	<i>Turdus migratorius</i>	Yellow	--
Anna's hummingbird	<i>Calypte anna</i>	Yellow	--
Bald eagle	<i>Haliaeetus leucocephalus</i>	Yellow	--
Black-tailed deer	<i>Odocoileus hemionus</i>	Yellow	--
Chestnut-backed chickadee	<i>Poecile rufescens</i>	Yellow	--
Chipping sparrow	<i>Spizella passerine</i>	Yellow	--
Dark-eyed junco	<i>Junco hyemalis</i>	Yellow	--
House finch	<i>Haemorhous mexicanus</i>	Yellow	--
House sparrow	<i>Passer domesticus</i>	Exotic	--
Song sparrow	<i>Melospiza melodia</i>	Yellow	--
Spotted towhee	<i>Pipilo maculatus</i>	Yellow	--

<sup>1</sup> BC CDC 2023a

<sup>2</sup> Government of Canada 2023

insects?

11 spp

#### 4.6 SPECIES AT RISK

A query of the BC CDC iMap tool yielded occurrences of 7 species and 14 ecosystems at risk within a two-kilometer radius of the property (BC CDC 2023b) (Table 3) The location of these occurrences in relation to the property is provided in Figure 2. None of the species in Table 3 were identified during the field assessment. It is possible that either the Garry oak / California brome, or Garry oak / oceanspray ecologically community occurred on the property in the past. However, due to historical disturbance current conditions on the property are not representative of either ecological community. Historical occurrence polygons of western-branded skipper, threaded vertigo, and island tiger moth overlap the property. These are large polygons based on historical data. These species are typically associated with Garry oak ecosystems. However, the likelihood of the species utilizing the ecosystem on the property is reduced due to the degraded condition of the meadow. Additionally, of the species in Table 3, fern-leaved desert-parsley, foothill sedge, graceful cinquefoil, purple sanicle, twisted oak moss, white meconella, yellow montane



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Six invasive plant species were observed on the property: English holly, English ivy, Himalayan blackberry, large periwinkle, spurge-laurel, and yellow archangel. Measures to remove and prevent invasive species are provided in Section 6 of this report. All vegetation species noted during the October 26<sup>th</sup>, 2022 and May 10<sup>th</sup>, 2023 field visits are included below in Table 1.

Table 1. Plant species observed on site during the October 26<sup>th</sup>, 2022 and May 10<sup>th</sup>, 2023 field visits

Common Name	Scientific Name	BC Provincial Status <sup>1</sup>	SARA Schedule 1 Status <sup>2</sup>
Annual honesty	<i>Lunaria annua</i>	Exotic	--
Black hawthorn	<i>Crataegus douglasii</i>	Yellow	--
Broad-leaved shootingstar	<i>Primula hendersonii</i>	Yellow	--
Brome sp.	<i>Bromus sp.</i>	--	--
Cleavers	<i>Galium aparine</i>	Yellow	--
Common dandelion	<i>Taraxacum officinale</i>	Exotic	--
Common forget-me-not	<i>Myosotis discolor</i>	Exotic	--
Common snowberry	<i>Symphoricarpos albus</i>	Yellow	--
Common vetch	<i>Vicia sativa</i>	Exotic	--
Cutleaf evergreen blackberry	<i>Rubus laciniatus</i>	Exotic	--
Cut-leaved geranium	<i>Geranium dissectum</i>	Exotic	--
Douglas-fir	<i>Pseudotsuga menziesii</i>	Yellow	--
English daisy	<i>Bellis perennis</i>	Exotic	--
English holly	<i>Ilex aquifolium</i>	Invasive; Exotic	--
English Ivy	<i>Hedera helix</i>	Invasive; Exotic	--
Feverfew	<i>Tanacetum parthenium</i>	Exotic	--
Garry oak	<i>Quercus garryana</i>	Yellow	--
Herb robert	<i>Geranium robertianum</i>	Exotic	--
Himalayan blackberry	<i>Rubus armeniacus</i>	Invasive; Exotic	--
Horse chestnut	<i>Aesculus hippocastanum</i>	Exotic	--
Kentucky bluegrass	<i>Poa pratensis</i>	--	--
Large periwinkle	<i>Vinca major</i>	Invasive; Exotic	--
Lemon balm	<i>Melissa officinalis</i>	Exotic	--
Lilac	<i>Syringa sp.</i>	Exotic	--
Meadow buttercup	<i>Ranunculus acris</i>	Exotic	--
Meadow foxtail	<i>Alopecurus pratensis</i>	Exotic	--
Miner's lettuce	<i>Claytonia perfoliata ssp. perfoliata</i>	Yellow	--
Nootka rose	<i>Rosa nutkana</i>	Yellow	--
Orchard grass	<i>Dactylis glomerata</i>	Exotic	--
Osoberry	<i>Oemleria cerasiformis</i>	Yellow	--
Pacific sanicle	<i>Sanicula crassicaulis</i>	Yellow	--
Purple deadnettle	<i>Lamium purpureum</i>	Exotic	--
Rose campion	<i>Silene coronaria</i>	Exotic	--
Small camas	<i>Camassia quamash</i>	Yellow	--
Small-flowered woodland star	<i>Lithophragma parviflorum</i>	Yellow	--
Spanish bluebell	<i>Hyacinthoides hispanica</i>	Exotic	--
Spurge-laurel	<i>Daphne laureola</i>	Invasive; Exotic	--
Sweet vernalgrass	<i>Anthoxanthum odoratum</i>	Exotic	--

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