



# Environmental Inventory and Impact Assessment at #7 Nerie Rd. RDCO BC

Post Fire Rebuild



*For: Sprout  
#7 Nerie Rd  
RDCO BC V1H 2E4*

Prepared: April 14, 2022

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## 1 Project Introduction and Assessment Rationale

Sage Environmental Consulting Ltd. (SEC) was retained by Doug and Eileen Sprout (Owners) of #7 Nerie Rd., Vernon BC (Site) in the Regional District of Central Okanagan (RDCO). The Site was heavily impacted in the summer of 2021 during the White Rock Lake wildfire. All buildings were lost. The Owners intend to rebuild the lost residence at this Site.

The purpose of this Environmental Inventory and Impact Assessment (EIA) was to review the impacts of the proposed project on the Sensitive Aquatic and Terrestrial Development Permit Areas (DPAs) for the Property. This report is provided to meet the Terms of Reference for Professional Reports for Planning Services (TOR) from the RDCO<sup>1</sup>.

### 1.1 Site Details

The Site is an irregularly shaped, hooked, lakeside lot. The property is bisected by Nerie Rd. RDCO Mapping was reviewed to determine applicable DPAs<sup>2</sup>.

Table 1: Site Details	
Type	Details
<b>Civic Address</b>	#7 Nerie Rd., Central Okanagan West, BC V1H 2E4
<b>Legal Description</b>	Lot 1, Plan KAP20209, District Lot 3329, Osoyoos Div of Yale Land District
<b>PID</b>	007-889-950
<b>Zoning</b>	R1
<b>OCP Designation</b>	RESIDENTIAL - LOW DENSITY
<b>Size</b>	1601.64 m <sup>2</sup> (RDCO GIS)
<b>Sensitive Terrestrial DPA</b>	Whole Site
<b>Sensitive Aquatic DPA</b>	Lakeshore and Riparian Area Okanagan Lake

### 1.2 Personnel

This assessment was carried out by Matthew Davidson PAg, an Environmental Scientist with 16 years of experience conducting habitat assessments in British Columbia.

<sup>1</sup> RDCO. 2014. Terms of Reference - Professional Reports for Planning Services.  
[https://www.rdco.com/en/business-and-land-use/resources/Documents/2014\\_DPA\\_terms\\_of\\_reference.pdf](https://www.rdco.com/en/business-and-land-use/resources/Documents/2014_DPA_terms_of_reference.pdf).

<sup>2</sup> RDCO. Mapping GIS. <https://gis-rdco.hub.arcgis.com/>. Accessed 220308

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## 2 Proposed Project

The proposed rebuild project at the Site includes the construction of a house on the eastern portion of the hooked lot. This is the portion adjacent to Okanagan Lake. The upper western portion of the lot above Nerie Rd. is unavailable for a house site as it is geotechnically restricted and features the current and future wastewater field<sup>3</sup>.

The house and deck footprint are proposed to be 1222 ft<sup>2</sup> (113.5m<sup>2</sup>). The Owners intend to reuse a portion of the existing paved driveway, as well as an existing small patio and small retained garden beds remaining in the leavestrip. The design for the new house aligns with a Riparian Areas Protection Regulations (RAPR) compliant 15m Streamside Protection and Enhancement Area (SPEA) at this location and the 15m RDCO recommended leavestrip for a moderately sensitive shoreline. See Figure 1, attached, for further details of Environmentally Sensitive Areas (ESAs) and intended setbacks.

The entire Site burned during the wildfire, killing all ground cover and shrubs as well as all trees on the lot. The dangerous condition of the dead trees on the eastern portion of the lot necessitated removal. A restoration planting plan is provided on Figure 2 for the riparian area of the Site.

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<sup>3</sup> Interior Testing Services Ltd. 2021. Geotechnical Considerations Proposed House 7 Nerie Road Vernon, B.C. Dated December 21, 2021

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## 3 Methods

This assessment is divided into inventory and impact assessment and mitigation phases.

### 3.1 Site Inventory Methods for Environmentally Sensitive Areas (ESAs)

Site inventory includes review of publicly available habitat mapping and literature pertinent to the site. Field assessments were conducted at the Site on October 6 and 8, 2021. The following data sources were considered and collected during site inventory:

- Ecosystem inventories and mapping review
  - Biogeoclimatic Ecosystem Classification (BEC) zone
  - Sensitive Ecosystem Inventory (SEI)
  - Foreshore Inventory and Mapping (FIM)
  - Sensitive Habitat Inventory and Mapping (SHIM)
  - Conservation Analysis for the Central Okanagan Valley<sup>4</sup>
- Review of the Landscape Context
  - Contiguity to other ESAs
  - Edge effects
  - Cumulative impacts
  - Relation/dependence of ecosystems beyond its boundaries.
- Unique or rare landforms or other aesthetic considerations
- Size of the lot under consideration

#### 3.1.1 Indigenous Species and Ecosystems

Inventory includes a review of species and ecosystems associated with the Site including:

- Species at Risk
- Habitat Features
- Sensitivity

#### 3.1.2 Habitat Condition and Sensitivity

Considerations of condition and sensitivity include:

- Ability to tolerate anthropogenic disturbance
- Resilience to imposed stresses on an ecosystem
- Current quality and condition
- Potential for post disturbance habitat restoration
- Long term impacts on habitat values and ecosystem functionality
- Severity or extent of the disturbance

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<sup>4</sup> Haney, A. and K. Iverson. 2009. Report: Conservation Analysis and Updated Ecosystem Mapping for the Central Okanagan Valley: Central Okanagan, South Slopes, Kelowna, Ellison and Joe Rich project areas.  
<https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=16043>

### 3.1.3 ESA Ranking on the Site

ESAs identified on the Site were ranked according to RDCO definitions based on the above noted factors. ESA Ranking is as follows:

- ESA – 1: Very Significant
- ESA – 2: Moderate Significance
- ESA – 3: Low Significance
- ESA – 4: Little or No Significance

### 3.2 Methods Impact Assessment Mitigation and Enhancement

The impact assessment will be based on the ESAs determined on the Site and the proposed work to be carried out. The compensation hierarchy will be applied accordingly to avoid and mitigate impacts to higher value ESAs where possible. Compensation and enhancements will be provided to meet RDCO requirements.

## 4 Results – Site Inventory

### 4.1 Public Mapping and Literature review

Table 2 summarizes the public mapping and data review.

Table 2: Literature and Mapping Review Summary	
Type	Details
<b>Biogeoclimatic Ecosystem Classification (BEC) zone<sup>2</sup></b>	IDFxh1 – Interior Douglas Fir – Very Hot Dry
<b>Sensitive Ecosystem Inventory (SEI)<sup>2</sup></b>	70% NS / 20% MF:co / 10% WD:co 70% non-sensitive / 20% Mature Forest, coniferous / 10% Coniferous Woodland
<b>Foreshore inventory and Mapping (FIM)<sup>2</sup></b>	Moderate value habitat suitable for juvenile rearing (Kokanee). Submergent milfoil
<b>Sensitive Habitat Inventory and Mapping (SHIM)<sup>2</sup></b>	Not available for this area
<b>Biodiversity Conservation Strategy<sup>2</sup></b>	Relative Biodiversity: Low to Very Low Management Class: Private lands Conservation Ranking Class Value: Moderate Habitat Connectivity: Moderate to High
<b>Conservation Analysis for the Central Okanagan Valley<sup>4</sup></b>	The Site is within a NA Conservation Analysis Polygon
<b>Sensitive Ecosystem Ranking / Approximate ESA<sup>5</sup></b>	Total Conservation Value: 5.3 Pre-fire portions of the Site would have predominantly ranked in ESA-2 and ESA-3. ESA-2 Areas would have been the upper forested western area above Nerie Rd. The location of the wastewater field on the upper lot would have been an ESA-3 area. The house and driveway area would have been an ESA-4. The lower riparian portion of the Site was landscaped with lawn and gardens and would have been ESA-3
<b>Conservation Data Center Species at Risk<sup>6</sup></b>	A review of mapped CDC public and masked data showed no records on or near the Site

### 4.2 Field Visit Results

SEC carried out field visits on October 6 and 8, 2021. All visits were delayed until public access to the fire affected sites were permitted. The fire effects resulted in the loss of buildings on site including a house and boathouse. Ecosystem impacts on the Site were the loss of all groundcover vegetation, all shrubs, and killing of all trees on the site. Some burned trees have been removed for safety reasons at this time. Regeneration was initiating in some areas of the upper (western) portion of the Site during later visits indicating remnant soil integrity.

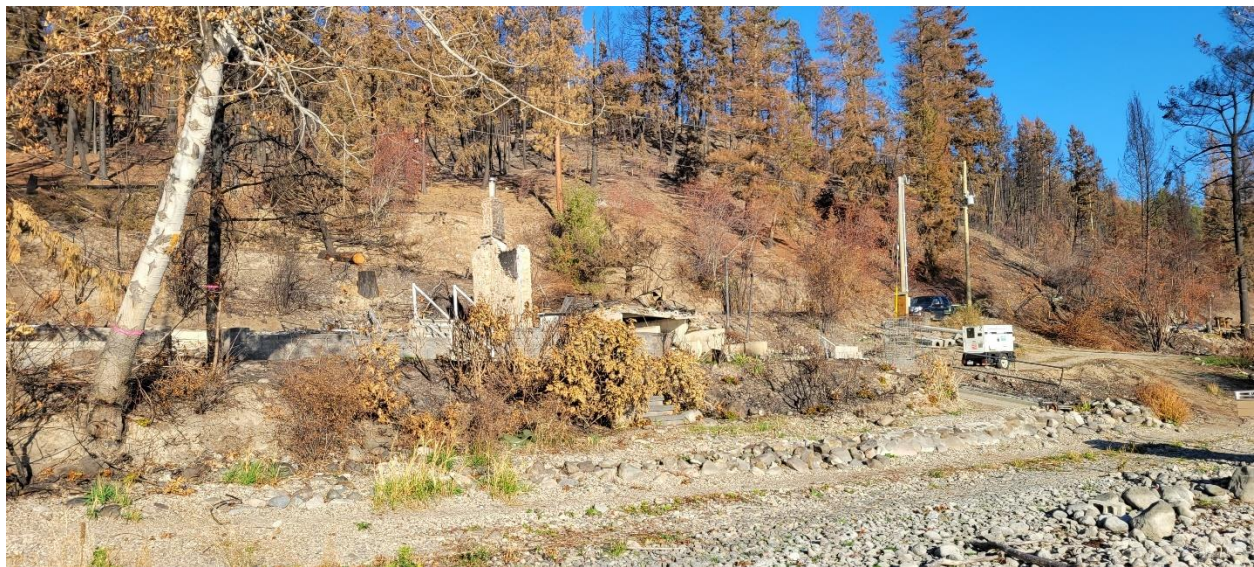
<sup>5</sup> Okanagan Habitat Atlas. <https://cmnmaps.ca//OKANAGAN/>. Accessed March 30, 2022

<sup>6</sup> BC Conservation Data Centre. <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre>. Accessed 220331





*Photo 1: Riparian portion of the Site, post-fire and pre-demolition, patio for retention in the foreground, gardens for retention in the background behind the stair rail 211006*



*Photo 2: Site from Shoreline 211108 Prior to Demolition*

Demolition activities have removed the house, boathouse, and foundations on this site. The paver patio and small retaining wall in the leavestrip have been retained. The house site has been returned to natural grade in preparation for construction.

Contiguity with neighbouring ESA areas and entire neighbouring ESA areas have been disturbed due to the wildfire across this Site. With regenerative growth and the proposed restoration planting it is anticipated that habitat function and contiguity will return over time. See details below for proposed enhancements.

Wildlife features such as hibernacula, wildlife trees, and rock outcrops were not identified at this location. The riparian corridor along the shoreline offered moderate connectivity for wildlife movement prior to the fire and is anticipated to offer a similar or better opportunity after redevelopment. The western portion of the lot previously had good upland and lateral connectivity to neighbouring ESA areas prior to the fire and it is anticipated this will return with regeneration and habitat enhancements.



*Photo 3: Western portion of the lot Fall 2021. Shrubs, trees, and groundcover were lost but soils on the Site seem to be intact 211006*



*Photo 4: Initial Regeneration Fall 2021 Bunchgrasses 211006*

### 4.3 Habitat Condition and Sensitivity

Prior to the White Rock Lake wildfire the Site featured habitats of low, moderate and high value (ESA-4, ESA-3 and ESA-2, respectively). The fire has removed most ground cover, shrub and tree vegetation from

the Site and has reduced the quality and condition of the entire Site to low. Long term habitat value and ecosystem function will return to the Site through regeneration, and managed revegetation. With broad heavy disturbance it can be anticipated that the eventual condition of this site will be a novel ecosystem with Indigenous plant components and novel aspects. Habitat value will be present, but restoration of the Site is not likely to achieve the complete characteristics of a native ecosystem due to the high level of disturbance, the combination of land management choices on neighboring lots and the large invasive plant seed bank that is likely present in the neighbourhood soils.

#### 4.4 ESA Ranking on the Site

ESAs identified on the Site have been ranked according to RDCO definitions based on the above noted factors.

ESA-3 Areas on the Site include the lower riparian area of the property which retains a small amount of vegetation below the Site boundary. With restoration the riparian area, this site is expected to improve to ESA-2 value providing ecosystem functions and connectivity to nearby riparian habitats. This is expected to be improved in comparison to the pre-fire landscaped condition.

ESA-3 Areas include the fire impacted western (upper) portion of the lot. This area features the current and future wastewater field. This area despite the disturbance retains connectivity to neighbouring ESAs and is anticipated to improve with regeneration and revegetation to an ESA-2 area over time. The area of the wastewater field is likely to remain ESA-3.

ESA-4 Areas include the former house location, driveway and patio areas. These areas were ESA-4 pre-fire and will feature the new house and driveway after redevelopment. Retained garden beds will feature native species for improved habitat performance.

See Figure 1 Attached for more details.

## 5 Results - Impact Assessment

The proposed new house will be built on the eastern portion of the hooked lot behind the riparian leavestrip of 15m which aligns with a RAPR compliant SPEA location. RAPR enhancement and mitigation measures will be applied to the leavestrip on the site including a riparian restoration planting plan.

The upper portion of the lot has been entirely impacted by wildfire. This area was seeded in the spring of 2022 to control erosion and facilitate regeneration.

The southern half of the western side of the Site features the current wastewater field which will be renovated or replaced to function to the current standard. This portion will reestablish some vegetation but is not likely to restore to habitat value. This area will be monitored over time to determine if regeneration will be sufficient or if further restoration planting is necessary.

### 5.1 Building Location

The impact mitigation hierarchy was applied to this site when planning the position of the house and wastewater system. In both instances the site selection is for locations that were previously impacted by development avoiding additional impact to ESAs on the Site. The new house location will be further from the lakeshore providing an opportunity for restoration of near shore habitat areas previously used by buildings (boathouse, and house) or lawn. The resultant riparian habitat value will be improved from pre-fire condition and is expected to eventually become an ESA-2 area.

### 5.2 Aquatic Habitat Impact Mitigation

#### 5.2.1 Danger Trees

Due to fire effects, dead and dangerous trees are located throughout the Site. Tree removal was conducted on the trees on the eastern (lower) part of the Site prior to initiation of construction and restoration works. Table 3 outlines the trees removed and replacement planting proposed.

Table 3: Tree Removal and Replacement Criteria <sup>7</sup> in Leavestrip				
Common Name	Species	DBH (mm)	Height (m)	Replacement Shrubs*
<b>Trembling Aspen</b>	<i>Populus tremuloides</i>	279	5.5	6
<b>Western Red Cedar</b>	<i>Thuja plicata</i>	355	9.8	8
<b>Ponderosa Pine</b>	<i>Pinus ponderosa</i>	177	6.1	6
<b>Total replacement</b>				20

\*Shrubs are selected for replacement over trees to reduce trees near the future house Site and due to allowable space.

#### 5.2.2 Windthrow

There is no potential for windthrow on the eastern portion of the lot. Trees on the western, upper lot portion will be assessed for danger, wildlife and windthrow potential prior to modification or removal.

<sup>7</sup> Province of BC. 1997. Tree Replacement Criteria.  
<https://www.env.gov.bc.ca/wld/documents/bmp/treereplcrit.pdf>

### 5.2.3 Slope Stability

Slope stability behind the house will be addressed with an engineered building foundation that supports the embankment below Nerie Rd. The western (upper) portion of the Site has stability concerns which are addressed in a report from Interior Testing Services Ltd.

### 5.2.4 Protection of Trees

Fire impacted trees have been removed from the leavestrip as all were dead and dangerous.

### 5.2.5 Leavestrip Encroachment

Temporary encroachment into the leavestrip is anticipated to be necessary to complete final demolition and site preparation tasks post-fire. The design indicates that the final house footprint will be above the 15m leavestrip.

### 5.2.6 Sediment and Erosion Control

Sediment and erosion control focus is on minimizing disturbance and source-control to prevent sediment or sediment laden water from entering the leavestrip or associated waterways during construction activities. Under the direction of the EM, erosion and sediment control activities will include but not be limited to the following:

- All areas with exposed soils will be re-vegetated promptly with appropriate native vegetation especially where surface flows have potential to reach the lake; if re-vegetation cannot occur immediately, alternative sediment control methods will be employed. These can include the use of filter cloth, tarps and/or straw mulch in combination with silt fencing or straw bales, if required.
- Barrier protection methods may need to be employed regardless as re-vegetation may not protect the immediate erosion threat.
- With limited space excavated materials may need to be stockpiled for the short-term inside the leavestrip. This must be done in areas where there is negligible potential for sediment to be transported to the lake; soil stockpiles that will be in place for an extended period of time should be covered where possible.
- In areas where soils are to be excavated near or within the leavestrip silt fencing will form a final barrier to sediment transport. The silt fence should be installed according to manufacturer's instructions and be monitored periodically for tautness and effectiveness.
- The timing of development activities near and within the leavestrip where sediment and erosion control measures are employed should occur during dryer seasons if possible. Work completed with the potential for erosive work should be halted during heavy precipitation or snow melt.

### 5.2.7 Stormwater Management

Additional stormwater will not be directed uncontrolled into the leavestrip surface or lake from the house or driveway. Due to limited space stormwater may be directed to an inground infiltration point constructed inside the leavestrip and or absorbent landscaping. Any inground infiltration system to be used will have the oversight of a Geotechnical Engineer.

### 5.2.8 Floodplain Concerns

The proposed house location is inside of the 15m horizontal floodplain setback specified by RDCO. This site has been reviewed by a hydrotechnical engineer Watershed Engineering Ltd. and a floodplain variance to the horizontal floodplain setback will be requested by the Owners, see attached house layout A1 from 925R Designs Inc.

### 5.2.9 Aquatic Habitat Restoration

Habitat restoration of the leavestrip is focused on the lower riparian habitat contained on the Site. No work is proposed below the property boundary of the Site. Restoration will focus on the installation of indigenous species shrub beds in the riparian area. This will be placed in areas of previous lawn and in the location of the previous boathouse and garden beds. These shrubs will be planted in clusters to create habitat areas and the shrub beds will be mulched with fir bark or rock to reduce erosion potential.

### 5.2.10 Reference Ecosystems

Reference Ecosystems were determined from historic mapping, literature review and a habitat assessment for the project location. Reference Ecosystems for this location include:

- Black cottonwood - Douglas-fir / common snowberry - red-osier dogwood (*Populus trichocarpa* - *Pseudotsuga menziesii* / *Symphoricarpos albus* - *Cornus stolonifera*) – reported to have historically occurred in this area.

#### 5.2.10.1 Species Selection and Numbers

Proposed species and numbers for this location are listed in Table 4:

Table 4: Restoration Plant Species and Details			
Common	Species	Number	Size
Lewis's Mock Orange	<i>Philadelphus lewisii</i>	2	#2 Pot
Nootka Rose	<i>Rosa nutkana</i>	8	#1 Pot
Snowberry	<i>Symphoricarpos albus</i>	12	#1Pot
Kentucky Bluegrass	<i>Poa pratensis</i>	25	plugs
Blue Wildrye	<i>Elymus glaucus</i>	12	6"

### 5.2.11 Performance Monitoring for Aquatic Habitat

The QEP will monitor and report the success of the restoration project once a year (spring or fall) for two years after planting. If re-planting is required due to die-off of plants, monitoring may be required for additional years to ensure the restoration of riparian habitat is successful and achieved.

An environmental monitoring and implementation schedule will be developed once this work plan is approved by the Client and the District to ensure milestones and treatments are met. Measures to control invasive weed species, erosion or other issues in the restoration area will be addressed by the EM and reported annually to the Client and District.

Restored condition after three years will be considered minimum 80% survival and cover by native species in the leavestrip, to include less than 10% cover by invasive species.

### 5.3 Terrestrial Habitat Impact Mitigation

The construction or renovation of the wastewater field on the western portion of the Site will be done at the same location as the current field. This will cause a short-term impact to this area; however, all current vegetation value was removed by the wildfire. The trees remaining on the western portion of the Site have been reviewed by a Professional Forester from Frontline Resource Operations and are primarily dead. As the trees are anticipated to deteriorate, the trees will be modified or removed as necessary. Where possible wildlife trees will be maintained. Rider Ventures will carry out the tree removal and modification once site access is achievable.

#### 5.3.1 Erosion Control

Seed for erosion control and vegetation has been applied to the western portion of the Site. Post-fire regeneration had initiated for some cover and shrub species in the fall of 2021 and the establishment of a grass layer will additionally facilitate surface erosion control at this site through the spring rains.

#### 5.3.2 Terrestrial Habitat Restoration

As this Site retained the primary soil structure and a seed bank, natural regeneration supported by erosion seeding will be allowed to carry out for one to two years prior to a restoration prescription. A prescription shall only be provided if warranted for suitable ecological succession at this location. The proposed target ecosystem is a shrubland complex to reduce the future threat of high impact fire behaviour on this Site. As regeneration and seeding have already initiated further direct mitigation measures will not be provided at time.

#### 5.3.3 Performance Monitoring for Terrestrial Habitat

The QEP will monitor and report the success of the natural regeneration and reseeding in the project once a year (spring or fall) for two years after planting. If re-planting is required due to die-off of plants, monitoring may be required for additional years to ensure the restoration of riparian habitat is successful and achieved.

An environmental monitoring and implementation schedule will be developed once this work plan is approved by the Client and the District to ensure milestones and treatments are met. Measures to control invasive weed species, erosion or other issues in the restoration area will be addressed by the EM and reported annually to the Client and District.

## 6 Construction Environmental Management

### 6.1 Restoration Landscaping Management Practices

The following outlines the planting methods for the project:

- Prior to any work, erosion control will be established where necessary to prevent any erosion or sediment flow to Okanagan Lake.
- Planting is to occur during the spring or fall for the greatest likelihood of plant survival.
- Species selections are conceptual in nature and may vary due to availability of plants. A Qualified Environmental Professional (QEP) will review any plant replacements or variations from the planting plan.
- Nursery stock for grass, shrubs and trees will be obtained. The Native Plant Society of BC<sup>8</sup> has a list of BC nurseries specializing in native plants, and that may be referenced for purchasing stock.
- Nursery stock should be a minimum of two years in age as they will have more developed roots and higher survival rates. Planted nursery stock is available in containers, bare root or wrapped burlap, each with associated advantages and disadvantages.
- Supplemental watering may be warranted for up to three years, in areas of the site, following the installation of the plantings to ensure establishment.
- Where necessary, adequate topsoil must be used to promote root growth for any pocket planting of trees, shrubs, herbaceous plants and seeded areas.
- Construction methods and plant material shall conform to the Canadian National Landscape Standards (latest edition).
- Plant species, sizes, and densities are specified on the Planting Plan and Planting list.
- Structural integrity is important for the success and function of the riparian habitat. Upon availability, salvaged large woody debris and stumps should be placed within the restoration area to provide structural habitat features for wildlife and amphibians.
- Snow fencing, or similar adequate barricades will be installed to delineate the restoration area and prevent wildlife browse until established.
- Machine work and earthworks to improve ground conditions for planting or to install large woody debris into the leavestrip may be requested by the QEP. Any machine work in the leavestrip will be monitored by the QEP.
- All restoration planting will be done with the oversight of the QEP.

#### 6.1.1 Plant Care / Maintenance

Newly planted trees and shrubs often present an attractive new food source for wildlife such as deer, beaver, voles and mice resulting in growth loss and plant mortality. Stem girdling caused by rodents often occurs in winter months below snow cover. To prevent this type of plant damage the following preventative techniques are recommended:

- Stem collars, seedling covers and tree guards (netting, wire cages, stem guards) can be used to protect new plantings from animal damage. These are commercially available through nurseries

<sup>8</sup> Native Plant Nurseries and Seed Suppliers of BC. 2015. Native Council of British Columbia.  
<http://www.npsbc.ca/pdf/NativePlantNurseriesandSeedSuppliersinBC.pdf>



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and forestry supply outlets. Stem collars can also be created from milk cartons, plastic pop bottles or cans, ensuring they extend 10 centimeters up from the ground.

- Stem collars must be maintained and removed before they interfere with plant form and growth.

## 7 Cost Estimate for Mitigation Activities

This cost estimate is provided for the purposes of bonding related to the proposed restoration planting, construction monitoring and performance monitoring of the restoration landscaping. The total cost for construction and performance monitoring as well as restoration landscaping is **\$7985.40**. These anticipated costs are detailed below.

### 7.1 Restoration landscaping cost estimate

The restoration landscaping cost estimate is for the purpose of estimating bonding related to restoration planting and includes approximate costs for plant material, mulch, compost and labour, at the time of the estimate preparation in Spring 2022. This estimate does not include landscaping outside of the prescribed landscaping areas indicated on Figure 2. Estimate details are outlined below.

- Plant material and labour are estimated at \$1985.40

PLANTING DESIGN COST ESTIMATING					Page 1				
Quantity	Plant Code	Botanical Name	Common Name	Size	Cost Each	Ext.	Labour	Total	Markup 20%
2		<i>Philadelphus lewisii</i>	Lewis's Mock Orange	#2	20.00	40.00	80.00	120.00	\$ 24.00
8		<i>Rosa nutkana</i>	Nootka Rose	#1	15.00	120.00	240.00	360.00	\$ 72.00
15		<i>Symphoricarpos albus</i>	Snowberry	#1	15.00	225.00	450.00	675.00	\$ 135.00
25		<i>Poa pratensis</i>	Kentucky Bluegrass	plugs	3.00	75.00	150.00	225.00	\$ 45.00
12		<i>Elymus glaucus</i>	Blue Wildrye	6'	6.00	72.00	144.00	216.00	\$ 43.20
						\$ 532.00	\$ 1,064.00	\$ 1,596.00	\$ 319.20
Quantity	Other	Description			Cost ea.	Total	Labour	Total	Markup
1	n/a	Mulch		cubic metres	\$ 24.00	\$ 24.00	\$ 12.00	\$ 36.00	\$ 7.20
1	n/a	Compost		cubic metres	\$ 15.00	\$ 15.00	\$ 7.50	\$ 22.50	\$ 4.50
						\$ 39.00	\$ 19.50	\$ 58.50	\$ 11.70
	<b>Plant Price :</b>	<b>\$</b>	<b>532.00</b>						
	<b>Labor :</b>	<b>\$</b>	<b>1,083.50</b>						
	<b>Other :</b>	<b>\$</b>	<b>39.00</b>						
	<b>Markup 20% :</b>	<b>\$</b>	<b>330.90</b>						
	<b>Overhead :</b>	<b>\$</b>	<b>0.00</b>						
	<b>TOTAL</b>		<b>1985.40</b>						

### 7.2 Construction Monitoring

Construction monitoring is anticipated to require up to six visits throughout the build costing \$500.00 per visit. These visits will include a monitoring report for the client and RDCO. Anticipated cost for construction monitoring during the rebuild is \$3000.00.

### 7.3 Performance Monitoring Post Construction

Two years of performance monitoring have been recommended for the terrestrial and aquatic habitat establishment. An 80% survival rate indicates success. These events will be followed up by a detailed monitoring and performance report indicating areas of success and challenges in the prescribe restoration areas. Advice related to mitigation measures such as replanting, erosion management, irrigation, and invasive species management will be supplied. The anticipated cost per trip is \$1500.00. The total anticipated cost for performance monitoring for two years is \$3000.00.

## 8 Closure

This assessment has been created by Sage Environmental Consulting Ltd. exclusively for Doug and Eileen Sprout. The conclusions made reflect Sage's best judgment in the light of the information available at the time of preparation. No other warranty, expressed or implied, was made. Any use which a third party makes of this report, or any reliance on or decisions to be made or actions based on this summary, are the responsibility of such third parties. Sage accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

Questions or comments may be directed to the undersigned.

Respectfully Submitted,



Matthew Davidson, PAg

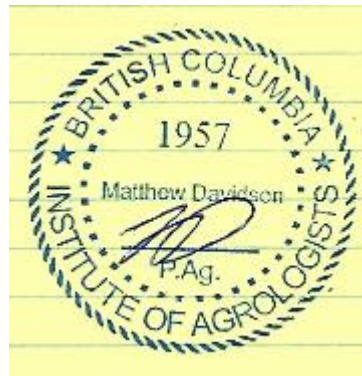
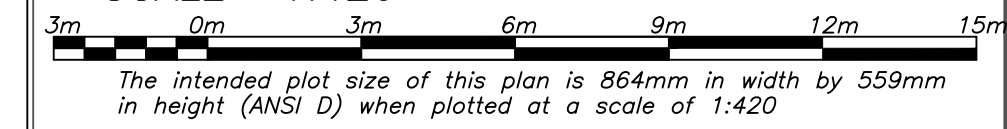




Figure 2: Leavestrip Restoration Planting Plan for Lot 1, DL 3329, ODYD, Plan 20209.

Client: Sprout  
Civic address: #7 Nerie Road, Westside

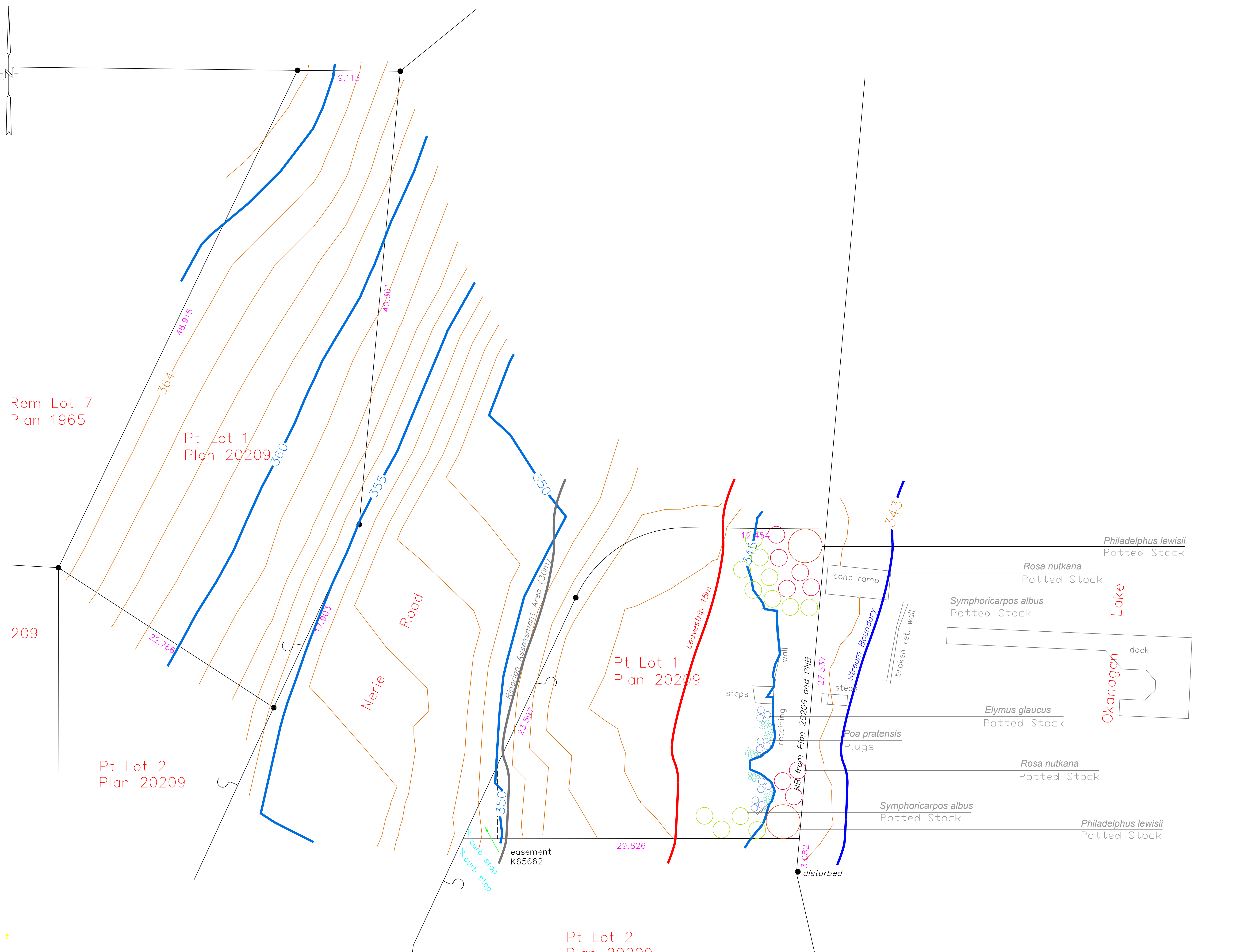
SCALE 1:420



The intended plot size of this plan is 864mm in width by 559mm in height (ANSI D) when plotted at a scale of 1:420

Contour interval = 1m

Elevations are shown in metres, and are based on lake level observations, derived from wateroffice.ec.gc.ca



This plan was prepared for design purposes and is for the exclusive use of Sprout.

Distances are shown in metres and decimals thereof.  
Parcel dimensions are derived from Plan 20209 and field survey.  
This plan shows horizontal ground level distances except where otherwise noted.

Bearings and distances are derived from field survey observations and are referred to the central meridian of UTM zone 11N, NAD83 CSRS

This plan has been prepared based on Land Title and Survey Authority records and a field survey completed on Dec. 7, 2021. Unregistered interests have not been included or considered.

The Certificate of Title PID 007-889-950 was searched on Sep 29, 2021.

Lot 1  
n 20209

tion 1



250.307.6818-925RDesign.com

No. Description Date

Section 2

Ex. Dock

Okanagan Lake

Section 3

Sprout  
Residence  
#7 Nerie Rd

Site

Date Mar 8 2022

Drawn by ML

Project No. 925RDj 22041

Scale 1" = 10'-0"

A1

SEPTIC FIELD  
360

Nerie Road

Connect Septic Tank to Field using Existing Connection

\*\*REQUESTING FRONT SETBACK VARIANCE

Pt Lot 1  
Plan 20209

DWELLING  
1222sf

GARAGE

DECK

SETBACK

PROPERTY LINE

Pt Lot 2  
Plan 20209

COVERAGE CALCULATION:  
SITE AREA: 17233sf  
Dwelling Footprint: 1706sf (9.9%)

