

Watercourse Protection DP000297 (3273 Lancaster Street)

RECOMMENDATION:

That Smart Growth Committee approve Development Permit DP000297 to provide for the protection and enhancement of a watercourse at 3273 Lancaster Street.

PREVIOUS COUNCIL/COMMITTEE ACTION

None directly related to this application.

REPORT SUMMARY

This report describes an application to obtain a watercourse protection development permit in order to facilitate a 2-lot subdivision adjacent to a portion of Fox Creek. As explained in the report, approval of the permit is required due to the site's proximity to a watercourse and the City's requirements to protect and enhance watercourses as a condition of development approval. In addition, the report addresses the circumstance of an unopened road allowance (a portion of Shaftsbury Avenue) and an unopened service lane that would be require construction pursuant to the City's Subdivision Servicing Bylaw, despite the fact the road allowances are within a watercourse protection area and the City does not need the road. The report recommends approval of the watercourse development permit to provide for the protection and enhancement of the watercourse as well as variance to the bylaw. If approved, the Approving Officer could then proceed to consider the subdivision, including a proposed dedication to the City of a small area of land that includes the creek.

BACKGROUND

Preliminary Consideration: A report seeking approval in principal for this watercourse protection development permit application was considered by the Smart Growth Committee meeting at its October 12, 2017 meeting. At that time, a motion to forward the application to Council for consideration specific to the species at risk information provided within the environmental report was defeated and Committee's only adopted motion requested staff provide Council an information session on species at risk within the community.

Applicable Regulations: The Official Community Plan designates the subject property within the "Small Lot Residential" designation and encourages the subdivision of larger lots to small lots. The site is zoned Residential Single Dwelling RS4 and has sufficient frontage and lot area to permit a conforming two-lot subdivision. To comply with design guidelines for small lot developments, future homes will be required to have an articulated façade, front entries that face the street, not an identical design and at least one tree planted in their front yards.

The Official Community Plan also identifies Fox Creek as a Class A (fish-bearing) watercourse and includes the subject property in a Watercourse Protection Area designation. It promotes the protection and enhancement of the watercourses.

The regulations of the Subdivision Servicing Bylaw require the owner to construct the unopened portion of Shaftsbury Avenue and the lane to the rear as new roads, as well as reconstruct

Watercourse Protection DP000297 (3273 Lancaster Street)

Lancaster Street as a condition of subdivision approval. Committee may vary this subdivision requirement in its approval of a watercourse development permit.

The property is located on the southwest corner of Lancaster Street and Shaftsbury Avenue (unopened) in a neighbourhood consisting predominantly of single residential and duplex homes. It is currently developed with an older dwelling with vehicular access from Lancaster Street. An informal gravel driveway has been constructed on the unopened road that is used for parking vehicles and to provide access to rear of the subject property. There are six trees on the property including a lodgepole pine, western red cedar, Douglas-fir, big leaf maple and balsam poplar (cottonwood), two of which are defined as significant trees per the Tree Bylaw.



Location of 3273 Lancaster Street (approximate location of creek in blue, proposed subdivision in yellow)



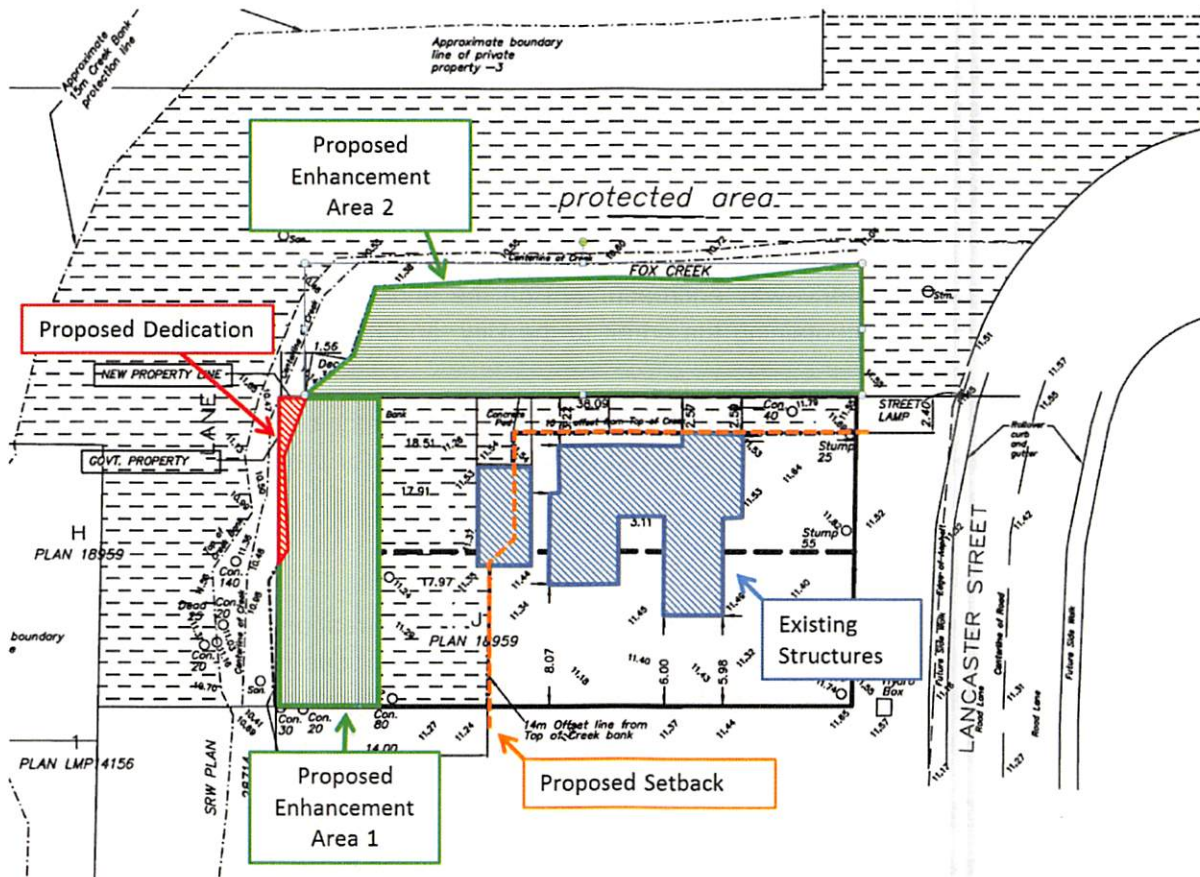
Driveway within the unopened road allowance

Fox Creek flows through the unopened portion of Shaftsbury Avenue directly to the north of the lot and through the unopened lane to the rear to the property, ultimately joining Maple Creek to the south of Fox Park. The creek has a relatively shallow bank with riparian vegetation consisting of a mix of native shrubs such as salmonberry and salal. It also has invasive species including

Watercourse Protection DP000297 (3273 Lancaster Street)

Himalayan blackberry, English ivy, and Japanese knotweed growing within the area. There are no known species at risk in the vicinity of the property; some habitat is considered of moderate value to at-risk bird species.

The existing house is set back 10.27m from the top of bank to the north (within the Shaftsbury road allowance) and there is a detached carport located approximately 11m from top of bank to the west (within the unopened lane). The proposal is to establish a 10.12m watercourse protection setback from the top of bank to the north and 14 m setback from the top of bank to the west.



Proposed dedication, enhancement areas, and setbacks (existing structures to be removed)

The required watercourse setback is 15m. To mitigate the requested variances, a 5m wide riparian buffer would be created along the west side of the property and planted with approximately 100 native shrubs (Enhancement Area 1) and the unopened portion of Shaftsbury Avenue would be replanted with 90 native shrubs and 5 large native trees (Enhancement Area 2). The portion of the lot below the watercourse top of bank would be dedicated to the City (shown in red). The applicant has offered to enter into a restrictive covenant would be registered on the property to ensure the long term protection of Area 1.

Watercourse Protection DP000297 (3273 Lancaster Street)

The proposed watercourse protection development permit will require the owner to remove invasive species from all areas within 15m of the watercourse in accordance with the attached plan. It also requires that the area be monitored for a period of five years with continued removal of invasive species during this period. Existing trees are to be retained and the permit requires protective fencing to be installed at their drip line prior to the start of any construction activity.

The applicant's environmental professional confirms this proposal would not be subject to the provincial Riparian Areas Regulation because all development works are outside of its 10-metre high water mark setback.

DISCUSSION

The proposed watercourse development permit would meet the intent of the watercourse development permit area guidelines in the Official Community Plan by providing for the restoration and enhancement of riparian habitat through the planting and rehabilitation of compacted soils to improve soil drainage and enhancing fish passage capacity via removal of invasive species. The marginally increased encroachment into the north setback area will be offset by significant increases in vegetation along both reaches of Fox Creek, including native tree planting and rehabilitation of compacted driveway encroachment on the unopened section of Shaftsbury Avenue, dedication of property containing the creek to the City, and removal of invasive species from the area.

The proposed development permit also provides for variance to the required construction of the portion of Shaftsbury and lane as the City does not require the roads for transportation purposes and is recommended for approval.

FINANCIAL IMPLICATIONS

The dedication of land to the City increases the area of land under responsibility of the Parks Division to maintain, however, this impact is expected to be insignificant due to its very small area and retention in a natural state. Further, the provision that the applicant will remove invasive species on the City's property (the unopened road) reduces staff costs for this work.

ENVIRONMENTAL IMPLICATIONS

The proposed development is expected to have a net positive impact on the watercourse.

PUBLIC CONSULTATION

The applicant advises that informal conversations have been held with neighbours to provide information on the potential subdivision and that they did not have any significant concerns. The Maple Creek Streamkeepers were also consulted and did not have concerns with the development as proposed.


OPTIONS

(Check = Staff Recommendation)



Report To:	Smart Growth Committee
Department:	Development Services
Approved by:	L.L. Richard
Date:	June 5, 2018

Watercourse Protection DP000297 (3273 Lancaster Street)

#	Description
1 	Approve Development Permit DP000297, which would provide for the protection and enhancement of a watercourse as well as vary subdivision regulations.
2	Request more information regarding Development Permit DP000297 prior to making a decision.
3	Hold a public meeting in order to obtain neighbourhood input and comment on the application.
4	Refuse Development Permit DP000297 if it determines it does not consider it complies with the objectives and guidelines of the Official Community Plan or wishes to require the road construction. The applicant could appeal Committee's decision to Council pursuant to the delegated authority.

Lead author(s): Neil MacEachern

ATTACHMENTS

Attachment #1: Location Map

Attachment #2: Invasive Species Removal Area

Attachment #3: Subdivision Map (with dedication)

Attachment #4: Draft DP (with dedication)

Attachment #5: Environmental Report (Aquaterra)

June 5, 2018

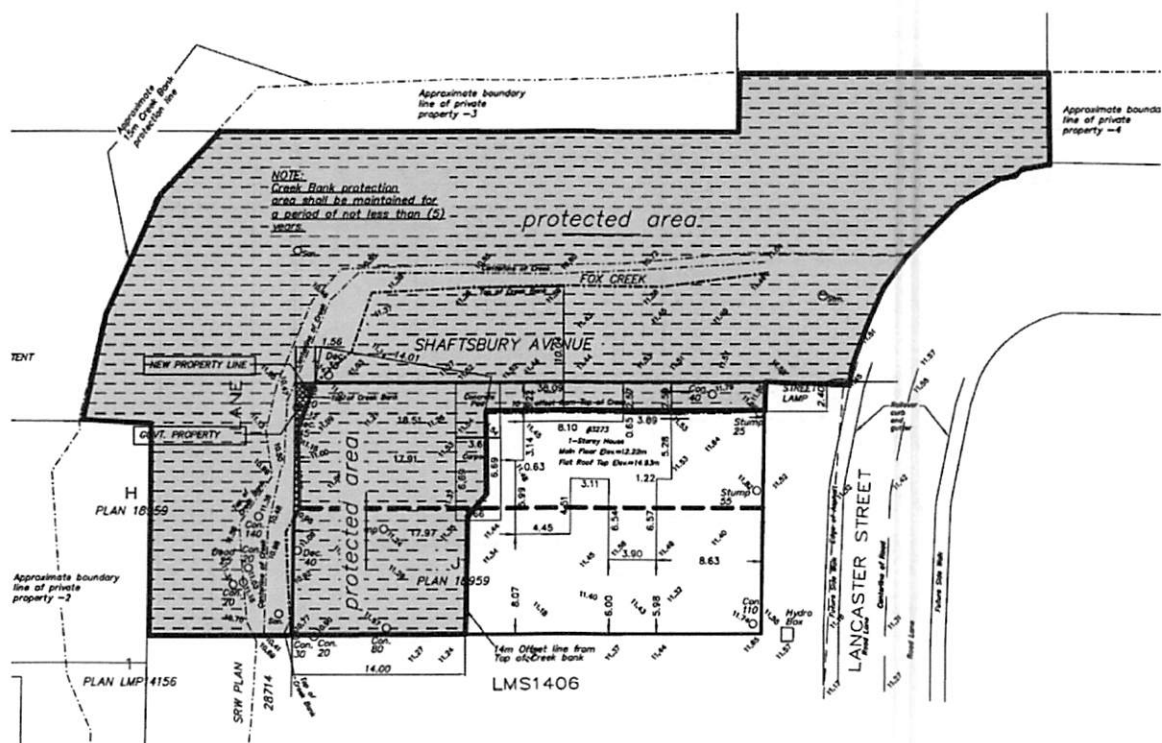
3273 Lancaster Street – Watercourse Development Permit DP000297

Appendix 1: Location Map

ATT#1

City of Port Coquitlam
Development Permit Location Map





[illegible]

THE CORPORATION OF THE CITY OF PORT COQUITLAM

"DEVELOPMENT PROCEDURES BYLAW, 2013, NO. 3849"

WATERCOURSE DEVELOPMENT PERMIT

NO. DP000297

Issued to: WENDY M. MASON
(Owner as defined in the Local Government Act,
hereinafter referred to as the permittee)

Address: 3273 LANCASTER ST, PORT COQUITLAM, BC, V3C 3J9

1. This Development Permit is issued subject to compliance with all of the Bylaws of the Municipality applicable thereto, except as specifically varied by this Permit.
2. This Development Permit applies to and only to those lands within the Municipality described below, and any and all buildings, structures and other development thereon:

Address: 3273 Lancaster Street

Legal Description: Lot "J" District Lot 380 Group 1 New Westminster District
Plan 18959

P.I.D.: 008-144-648

3. The above property has been designated as a Development Permit Area under Section 9.8 – Watercourse Protection in the "Official Community Plan Bylaw, 2013, No. 3838".
4. "Port Coquitlam Zoning Bylaw, 2008, No. 3630" and "Subdivision Servicing Bylaw, 1987, No. 2241" are varied, supplemented or both, subject to the following:
 - a. All landscaping works, sediment control measures and planting materials shall be provided in accordance with plans numbered DP000297(a) to DP000297(d) and specifications thereon which are attached hereto and form part of this permit
 - b. The invasive species removal area shall be maintained clear of invasive species for a period of 5 years commencing from the date of final inspection for a new dwelling unit within the subject property;
 - c. During construction, riparian areas must be protected by temporary silt fencing and all other measures contained within the construction and erosion control plan, specified in the recommendations of Aquaterra in DP000297(d);
 - d. All on-site planting materials shall be able to survive for a period of one year from the date of site landscape approval by the Municipality.

5. **Landscape Security**

- (a) As a condition of the issuance of this Permit, the Municipality is holding the security set out below to ensure satisfactory provision of landscaping and its maintenance in

accordance with the terms and conditions as set forth in Clause 4 above. There is filed accordingly an irrevocable Letter of Credit or cash security in the amounts:

- a. \$8,250.00 for the purpose of landscaping the habitat enhancement area including invasive species removal; and,
 - b. \$4,500.00 for the purpose of inspection and maintenance of the habitat enhancement area including invasive species removal to be held for a minimum period of five years after the final inspection of a new dwelling on the subject property.
- (b) Should any interest be earned upon the security, it shall accrue to the permittee and be paid to the permittee if the security is returned. A condition of the posting of the security is that should the permittee fail to carry out the works or services as hereinabove stated, according to the terms and conditions of this Permit within the time provided, the Municipality may use the security to complete these works or services by its servants, agents or contractors, and any surplus shall be paid over to the permittee.
- (c) The permittee shall complete the landscaping works required by this permit within six months of the final inspection of a building on the site. Within the six month period, the required landscaping must be installed by the permittee, and inspected and approved by the Municipality.
- If the on-site landscaping is not approved within a six-month period, the Municipality has the option of continuing to hold the security until the required landscaping is completed or has the option of drawing the security and using the funds to complete the required landscaping and recoup additional costs from the permittee if necessary. In such a case, the Municipality or its agents have the irrevocable right to enter into the property to undertake the required landscaping for which the security was submitted.
- (d) Should the permittee carry out the works and services permitted by this permit within the time set out above, the landscape security shall be returned to the permittee, provided that a sum of 10% of the original landscaping security stated in Clause 5(a)a. above may be withheld by the Municipality for an additional year. At year-end, or upon re-inspection at the request of the permittee, if the Municipality deems the landscaping to be completed, the 10% hold back will be released. Should the permittee fail to remedy any aspect of the landscaping not in accordance with the approved plan, the Municipality may deduct the cost of remedying the defect from the said deposit and recoup additional costs from the permittee if necessary.
- (e) The permittee shall carry out the inspection, reporting and maintenance prescribed in the watercourse protection area management plan. The landscape inspection and maintenance security may be reduced by up to \$900.00 annually upon submission of a report from a qualified environmental consultant confirming the performance objectives of the watercourse protection area management plan have been achieved.
6. The land described herein shall be developed strictly in accordance with the terms and conditions and provisions of this permit and any plans and specifications attached to this permit, which shall form a part hereof.

7. This permit shall lapse if the permittee does not obtain subdivision approval or a building permit within two years of the (issuance) date of this permit.
8. The terms of this permit or any amendment to it, are binding on all persons who acquire an interest in the land affected by this permit.
9. 9. This Permit is not a building permit.

APPROVED BY THE SMART GROWTH COMMITTEE THE DAY OF JUNE, 2018.

SIGNED THIS ____ DAY OF _____, 2018.

Mayor

Clerk

I ACKNOWLEDGE THAT I HAVE READ AND UNDERSTAND THE TERMS AND CONDITIONS UPON WHICH THIS PERMIT IS ISSUED.

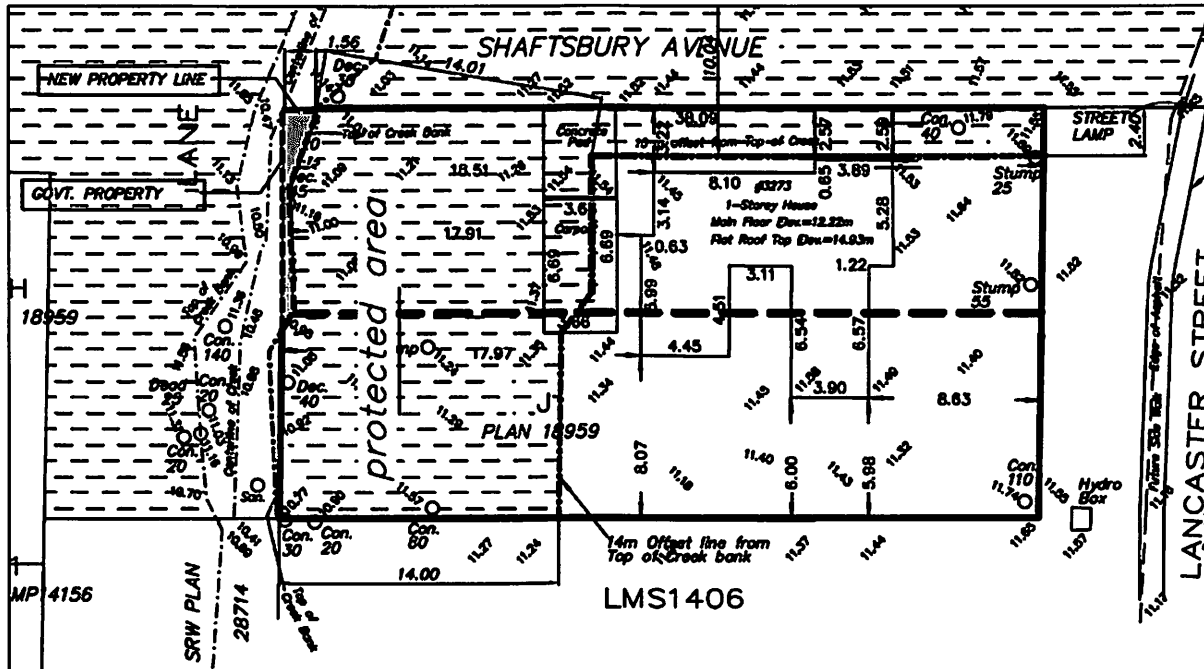
Applicant (or Authorized Agent or
Representative of Applicant)

All riparian plantings will be of a minimum density of 1 shrub per 1 square metre. Planting on a given area being enhanced must be successful to an 80% take. If more than 20% die over one year, replanting is required.

- Shrub species and quantities for the area (n=100) are to be planted, as follows:
- Common Snowberry (*Symphoricarpos albus*) – 2 gallon pots = 20
- Oceanspray (*Holodiscus discolor*) – 2 gallon pots = 20
- Indian Plum (*Oemleria cerasiformis*) – 2 gallon pots =10
- Twinberry (*Lonicera involucrata*) – 2 gallon pots = 10
- Nootka Rose (*Rosa nutkana*) – 2 gallon pots = 40

Road base to be stripped from unopened Shaftbury Avenue RoW
Organic soil planting medium to be added to a minimum depth of 30 cm.

- Shrub and tree species and quantities for the area (n=95) are to be planted, as follows:
- Western Redcedar (*Thuja plicata*) – 2 gallon pots = 2
- Bigleaf Maple (*Acer macrophyllum*) – 2 gallon pots = 1
- Douglas-fir (*Pseudotsuga menziesii*) – 2 gallon pots = 2
- Common Snowberry (*Symphoricarpos albus*) – 2 gallon pots = 20
- Oceanspray (*Holodiscus discolor*) – 2 gallon pots = 20
- Salmonberry (*Rubus spectabilis*) – 2 gallon pots = 10
- Indian Plum (*Oemleria cerasiformis*) – 2 gallon pots = 10
- Twinberry (*Lonicera involucrata*) – 2 gallon pots = 10
- Nootka Rose (*Rosa nutkana*) – 2 gallon pots = 20

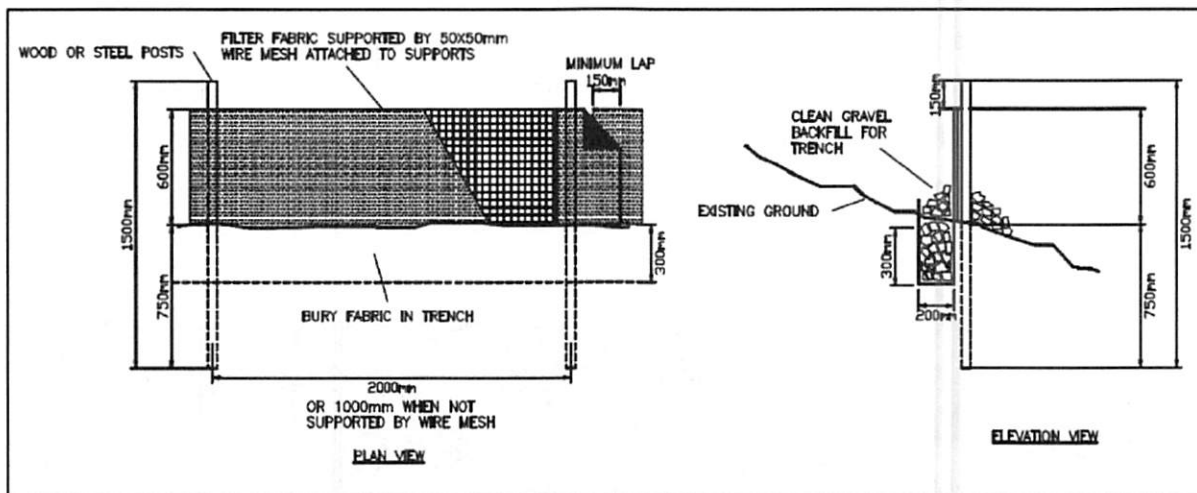


Area to be dedicated to the City (Grey)

Sediment and Erosion Control

The site is flat, sloping gently to the south. The northern reach of Fox Creek is situated across from the unopened Shaftsbury Road RoW and is also situated adjacent and north of an earthen berm area. As such, sediment input and erosional impacts to the northern reach of Fox Creek are not anticipated to occur as a result of construction and no mitigation is proposed. The western reach of Fox Creek may be subjected to sediment inputs during foundation works and stripping of vegetation; therefore, AquaTerra recommends the installation of trenched silt fencing in accordance with the Fisheries and Oceans (DFO) Guidelines Based on the flat gradient and distance between the project area and the creek, limited earth works associated with the deck addition, and presence of existing vegetation (and hence, ability to filter and detain any mobilized sediments), no project-specific erosion and sediment control (ESC) measures are anticipated to be required for this project.

Figure 6: Trenched Silt Fencing Installation Details from the DFO Land Development Guidelines.



ENVIRONMENTAL REPORT



TO: Mr. Clarence Riehl & Wendy Mason
3273 Lancaster Street
Port Coquitlam, BC
V3C 3J9

Submittal Date: 23 October 2016

FROM: Chris Lee, M.Sc., RPBio, QEP, BC-CESCL

15 May 2017 (Rev.1)

27 May 2017 (Rev.2)

CC: Mr. Neil MacEachern (City of Port Coquitlam)

**SUBJECT: 3273 Lancaster Street, Port Coquitlam BC – Environmental Report
[Rev.2]**

1 Overview

AquaTerra Environmental Ltd. ('AquaTerra') is pleased to provide Mr. Clarence Riehl and Wendy Mason (the 'proponents') with this updated Environmental Report (the 'report') – Revision 1 - for the site, referenced as 3273 Lancaster Street (the 'site'; **Figure 1**) in the City of Port Coquitlam (the 'City'), BC. Revision 1 includes specific updates requested by the City following the initial review of the report as it relates to specific City requirements to achieve the objectives of the Smart Growth Committee, as outlined in Section 3.

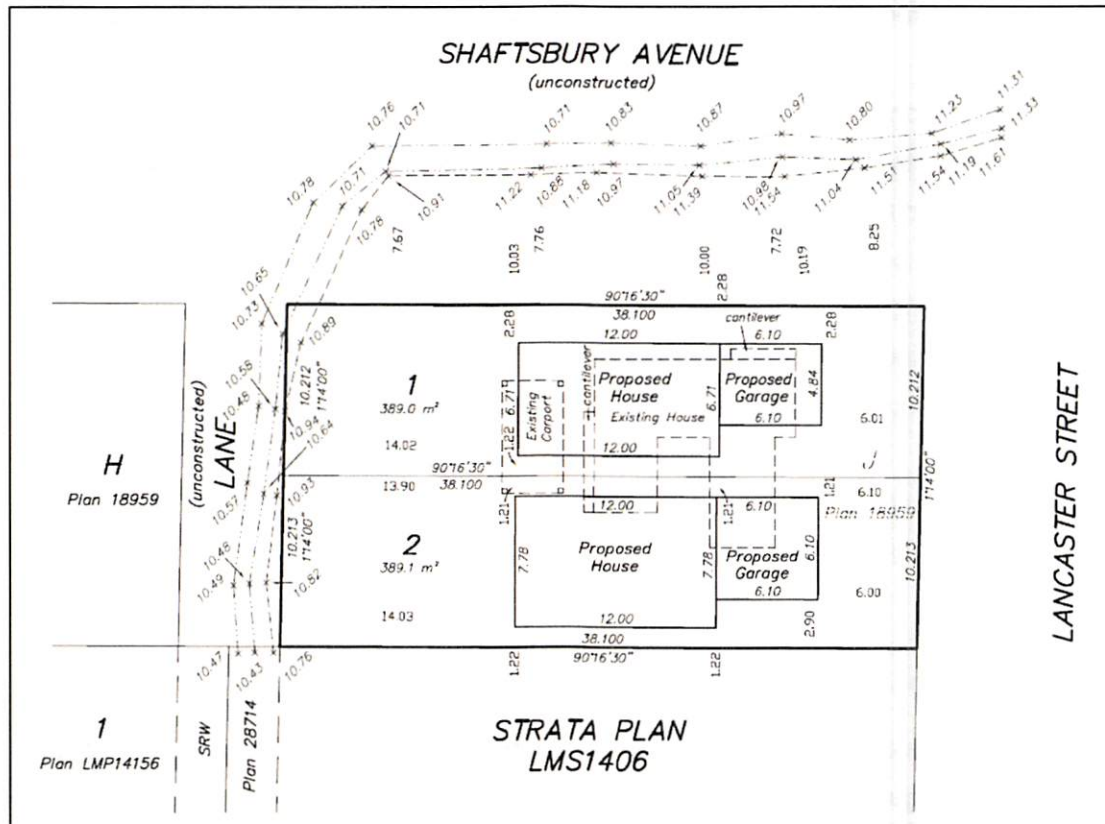
Figure 1: Site Location Plan (Red Polygon) and Fox Creek (a tributary of Maple Creek) adjacent and north/west of the site.



2 Project Description

The proponents are proposing to demolish the existing residence and subdivide the lot into two single-family residential lots. The details relating to the proposed site redevelopment and existing residence are illustrated on **Figure 2**.

Figure 2: 3273 Lancaster Street – Existing and Proposed Site Conditions.



3 Report Objective

Based on discussions with the proponents, AquaTerra understands that the City of Port Coquitlam has requested a focused Environmental Report to meet the Watercourse Development Permit (WCDP) criteria as outlined in the WCDP Application. City of Port Coquitlam staff have indicated that information is required relating to the preservation, protection and enhancement of watercourse protection areas. The WCDP is required as per the city Official Community Plan (OCP), because the proposed residences are situated within 15 m of the top of bank of Fox Creek.

Ultimately, the objective of this report is to establish that the proponents will subdivide the existing lot and construct the proposed single-family residences in a manner that meets today's building code, local city bylaws, and respects the riparian setback requirements for Fox Creek.

City staff has noted that the City of Port Coquitlam Smart Growth Committee is anticipated to require the following as part of the Watercourse Development Area variance:

- 1) Dedication to the City of the area of the watercourse that intersects with the site;
- 2) A restrictive covenant within the area adjacent to the stream including limiting access to the area adjacent to the watercourse via hedge or fencing;
- 3) Detailed planting plan to enhance watercourse habitat function and improve site hydrology;
- 4) Rehabilitation of limited-permeability surfaces adjacent to the stream; and
- 5) Removal of invasive species in or encroaching on the watercourse.

Details pertaining to enhanced habitat function, reclamation and protection are discussed in detail in Section 8.3.

4 Site Biogeoclimatic Zone

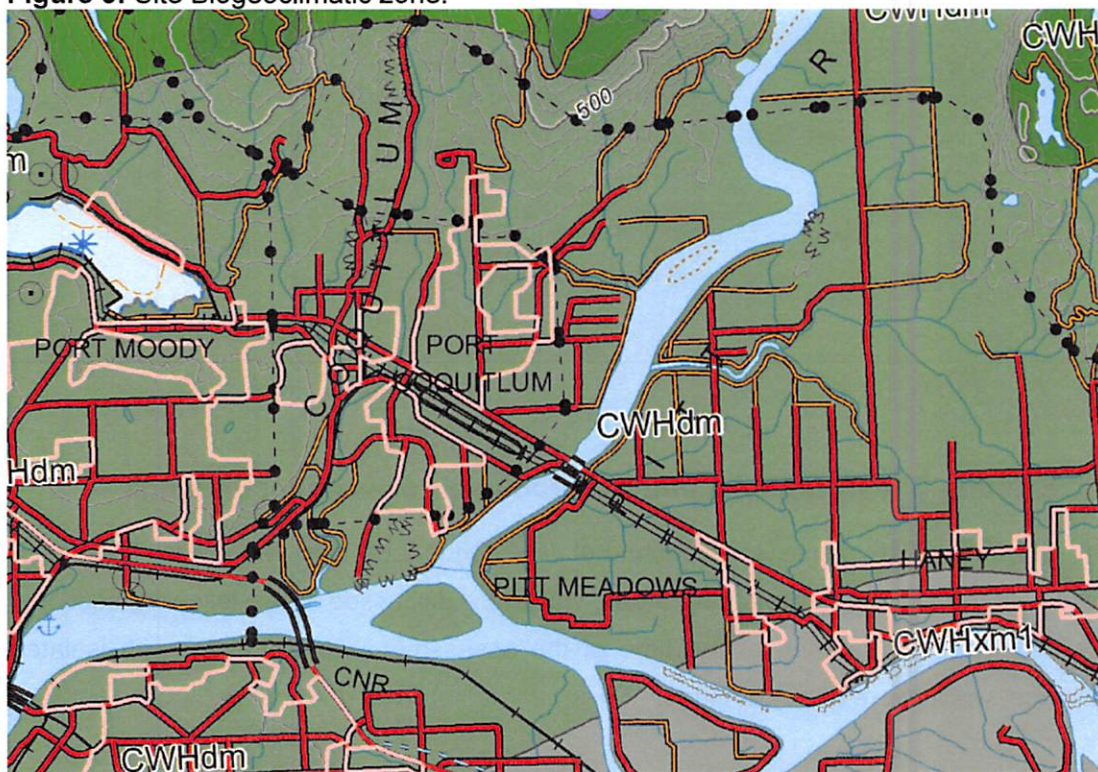
The site is situated within Coastal Western Hemlock Dry Maritime (CWHdm) zone as illustrated on **Figure 3**, which occurs at low to middle elevations mostly to the west of the coastal mountains, along the entire British Columbia Coast and on into both Alaska and Washington/Oregon. The CWH consists of 10 subcategories of continentality (hypermaritime, maritime, and submaritime subzones) and precipitation (very dry, dry, moist, wet, and very wet). Applicable to the site is the Coastal Western Hemlock Dry Maritime Subzone (CWHdm), occurring at low elevations on the mainland and immediately adjacent islands. Elevational limits range from sea level to approximately 650 m. The CWHdm has warm, relatively dry summers and moist, mild winters with little snowfall. Growing seasons are long, and feature only minor water deficits on zonal sites. Mean annual temperature is approximately 8 °C and ranges from 5.2 °C to 10.5 °C among the CHW subzones. The mean annual precipitation for the zone is 2228 mm (ranging from 1000 to 4400 mm) (MOF, 1991).

The following climate information is based on data collected by Environment Canada at the Coquitlam Como Lake STP weather station (49° 16'N, 122° 52'W; 160.0 metres [m] elevation) between 1971 and 2000, located approximately 8 kilometers (km) southwest of the site.

Daily Mean Temperature	Not listed
Precipitation	1924 mm/year
Highest Monthly Avg.	November, 299.1 mm
Lowest Monthly Avg.	July, 61.5 mm

Vegetation within the CWHdm zone includes those species listed above but also includes Western Redcedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii*), Western Hemlock (*Tsuga heterophylla*), Dull Oregon-grape (*Mahonia nervosa*) and Salal (*Gaultheria shallon*). The typical CWHdm zonal vegetation assemblage represents the Site Potential Vegetation Type (SPVT); however, under current and prospective future scenarios (under a residential land use scheme), natural vegetation succession will be limited to the riparian areas and will be limited by the ability of the sloped areas to support larger trees, particularly conifers.

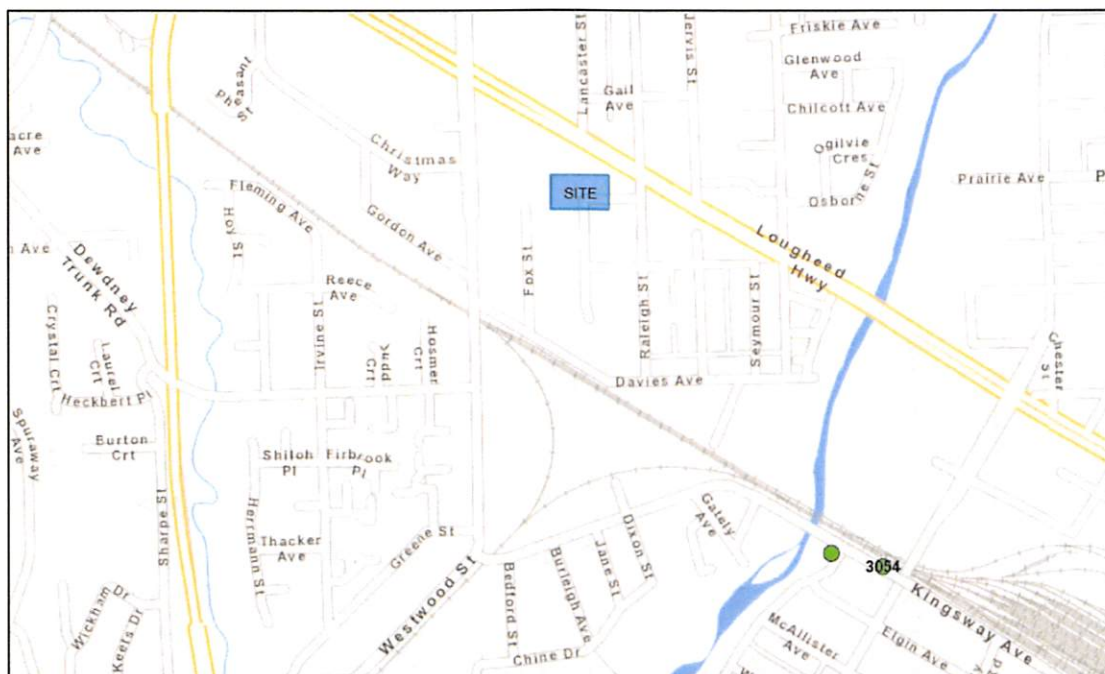
Figure 3: Site Biogeoclimatic zone.



5 Background Information Review

AquaTerra reviewed available background information including the Fisheries and Oceans (DFO) Mapster database, Fisheries Information Summary System (FISS), Sensitive Habitat Inventory Mapping (SHIM), and BC iMAP. No watercourse information, fisheries sensitive watersheds, fish observations, or species / ecosystems at risk were identified for the site and immediately surrounding area. The closest available sensitive species (Streambank Lupine) is situated east of the Coquitlam River, approximately 840 m southeast of the site (**Figure 4**).

Figure 4: Streambank Lupine (Green) – Shape ID 3054 – situated 840 m Southeast of the Site.



6 Existing Site Conditions and Watercourse Assessment Findings

On 01 June 2016, AquaTerra personnel (Mr. Chris Lee and Ms. Olga Fedianina) assessed the site and surrounding areas, which are discussed in the following sections. Weather conditions during at the time of the assessment was overcast with isolated showers, which were heavy at times.

6.1 Aquatic Areas

Fox Creek is situated north and west of the site as illustrated on **Figure 1**. The sharp, 90° bend in the watercourse coupled to the presence of locally rip-rapped banks and a uniform channel width coupled with culverts and stormwater outfalls appear to indicate that the watercourse was constructed or re-directed / partially re-directed, historically. Channel complexity is 'low' with little-to-no scour or depositional areas, pools, braiding, bars, or other habitat features to support fish populations. Although noted by the City as being designated as 'fish bearing', the low flow volumes, length of culverted section above and below the site, and stream morphology are anticipated to preclude fish presence. Watercourse details including average width, substrate composition, and gradient were submitted online as part of a detailed Riparian Areas Regulation [RAR] assessment (issued under separate cover) through the RAR Notification System (RARNS). A setback of 10 m on the north and west reaches of Fox Creek is warranted and prescribed. The setbacks will not encroach into the proposed building envelopes of the subdivided lots.

6.2 Riparian Areas

Riparian areas within 30 m of Fox Creek (within the site boundaries and adjacent areas where private property issues were not raised) were assessed during the field assessment. Generally, the intact riparian area is limited to a narrow band of vegetation on either side of Fox Creek, ranging from 5-10 m (typically <10 m) from the High Water Mark (HWM). There is an unconstructed road right-of-way (RoW) for Shaftsbury Avenue situated between the residence and the creek to the north. This road allowance is currently a gravel roadway but is devoid of vegetation (refer to photographs for details) and serves to limit potential for significant tree root growth and future planting on this RoW. Similarly, an unconstructed lane is situated west of the site, but is currently occupied by the creek and adjacent riparian areas.

At the site, the vegetation assemblage is disturbed and consists of a mixture of native and invasive/decorative/ornamental vegetation within the riparian corridor. Dominant observed trees consisted of Black Cottonwood (*Populus trichocarpa*), Western Redcedar (*Thuja plicata*) and Western Hemlock (*Tsuga heterophylla*). Dominant shrubs consisted of Salmonberry (*Rubus spectabilis*) and Indian Plum (*Oemleria cerasiformis*). Invasive vegetation included English Ivy (*Hedera helix*), Himalayan Blackberry (*Rubus*

armeniacus), Lamium/Archangel (*Lamium* sp.), and Japanese Knotweed (*Fallopia japonica*).

6.3 Terrestrial / Upland Areas

With the exception of the narrow band of front yard fronting Lancaster Street near the southeast corner of the site, the entirety of the site is situated within 30 m of Fox Creek. This narrow band of vegetation consists predominantly of manicured lawn and two recently felled trees, and does not provide appreciable terrestrial habitat value and is therefore not discussed in further detail in this Environmental Report

7 Natural Biophysical Features

7.1 Wildlife Utilization and Species-at-Risk Potential

Small-to-Medium sized wildlife, including Raccoon, Coyote, and Striped Skunk likely utilize the Fox Creek corridor. The access and anthropogenic constraints (e.g., Highway 7 [Lougheed Highway] and rail line) between the Coquitlam River corridor and the site (situated approximately 550 m away at its closest point) likely limit regular utilization by larger mammals such as Black Bear and Black-tailed Deer. Migratory and resident songbirds likely utilize wider portions of the riparian corridor for foraging and nesting. At the time of the field assessment (01 June 2016), no active nests were observed between the creek and top-of-bank at the site. No sensitive species / species-at-risk were observed at the site during the assessment. Potentially occurring species-at-risk with associated potential presence rankings are provided in **Table 1**.

Table 1: Ranking Potential for Provincially and Federally-listed Rare and Endangered Species

Common and Scientific Names	Status ²	Potential Occurrence Ranking	Rationale
MAMMALS			
Pacific Water Shrew <i>Sorex bendirii</i>	Red; EN	LOW	Although the watercourse appears suitable for PWS presence, lack of connectivity and culverted sections upstream and downstream likely preclude the presence of this species.

Table 1: Con't.

Common and Scientific Names	Status ²	Potential Occurrence Ranking	Rationale
Trowbridge's Shrew <i>Sorex trowbridgii</i>	Blue	LOW	Although this shrew species is more terrestrial relative to the Pacific Water Shrew, it does frequent water. Given the presence of a watercourse within the site area and prevalence of coniferous and mixed forests, there is a potential for this species to occur.
BIRDS			
Band-tailed Pigeon <i>Patagioenas fasciata</i>	Blue	MODERATE	Prevalence of suitable berries present on-site and some conifers provide some nesting potential.
Common Nighthawk <i>Chordeiles minor</i>	TH	MODERATE	Uncommon resident at the northern edge of its range. Utilizes a wide range of habitats including mountains and plains in open and semi-open habitats. Specific habitats include open forests, savannah, grasslands, fields, and areas around cities and towns.
Great Blue Heron <i>Ardea herodias</i> ssp. <i>fannini</i>	Blue; SC	LOW	Although there is a watercourse adjacent to the site, no fish are anticipated to be present (limiting forage potential); therefore, this species is not likely to be present.
Green Heron <i>Butorides virescens</i>	Blue	LOW	Although there is a watercourse adjacent to the site, no fish are anticipated to be present (limiting forage potential); therefore, this species is not likely to be present.
Olive-Sided Flycatcher <i>Contopus cooperi</i>	TH	MODERATE	Suitable foraging habitat adjacent to the site area boundary. If present, likely transitory en-route to more suitable breeding habitat.
Western Screech-Owl <i>Megascops kennicottii</i> ssp. <i>kennicottii</i>	Blue; SC	LOW	May occasionally roost and forage in forested areas of the site and in adjacent, undeveloped forested areas. Preference given to larger tracts of contiguous, undisturbed areas away from developed areas.
AMPHIBIANS AND REPTILES			
Northern Red-legged Frog <i>Rana aurora</i>	Blue; SC	LOW	No suitable breeding area. Narrow corridor / limited connectivity likely precludes this species.
Western Toad <i>Bufo boreas</i>	SC	LOW	No suitable breeding area. Narrow corridor / limited connectivity likely precludes this species.
Coastal Tailed Frog <i>Ascaphus truei</i>	Blue; SC	NIL	Permanent watercourse on-site, but conveys insufficient flows year-round and average temperature / substrate precludes this species.
Northern Rubber Boa <i>Charina bottae</i>	SC	NIL	Absence of rocky outcrops at the site precludes this species.
Western Painted Turtle <i>Chrysemys picta</i> pop.1	Red; EN	NIL	Unsuitable habitat on-site; no significant water resources on-site.

Table 1: Con't.

Common and Scientific Names	Status ²	Potential Occurrence Ranking	Rationale
INVERTEBRATES			
Dun Skipper <i>Euphyes vestries</i>	Blue; TH	LOW - MODERATE	Utilizes a wide variety of habitats including wetlands, fields, meadows, right-of-ways, etc.
Monarch <i>Danaus plexippus</i>	Blue; SC	LOW - MODERATE	Has been observed in low moist spots in fields, meadows, right of ways, etc., but typically prefers large tracts of undisturbed, natural habitat. Anthropogenic activities (habitat degradation, fragmentation and introduction of invasive species) are thought to be the primary reason for this species decline.
Pacific Sideband <i>Monadenia fidelis</i>	Blue	MODERATE	Often found in moist ground layered with leaves, fir needles, moss and other debris. Some suitable habitat exists on site.
PLANTS			
Vancouver Island Beggarticks <i>Bidens amplissima</i>	Red; EN	LOW	Often found in wetland and shoreline areas including ditches, wet fields and marshes as well as old riverbeds, pond margins, streamside and river edges. Marginally suitable species on-site.

Based on the generally low-to-moderate potential for species-at-risk utilization of the existing, available habitats, the age of the neighbourhood (circa 1950s-1960s) and associated habitat fragmentation, and type of project (which consists of re-development within an existing disturbed footprint), indicate a very low potential for interaction between species-at-risk, if any, and the project.

7.2 Habitat Linkages

The Fox Creek corridor is fragmented by Lougheed Highway (Highway 7) to the north, Fox Park (where the watercourse is culverted) and Davies Avenue / a rail-line to the south, and existing streets and residences to the east and west. As such, the ability of the site to contribute to a functional habitat linkage under current or future, prospective conditions will remain marginal, irrespective of the proposed project, which will not reduce the riparian corridor widths provided the detailed RAR setbacks are followed. Improvements to habitat linkages would require largescale changes to Port Coquitlam infrastructure, daylighting of culverted sections and improving linkages to other green spaces and corridors, which are beyond the scope of this project.

7.3 Significant Trees

The project does not interact with the trees situated within the riparian area, which are situated at, or beyond the top-of-bank outside of the site area boundaries (i.e.g, north of the unopened Shaftsbury Avenue RoW and west of the west site boundary). As such, significant trees were not assessed as part of this environmental report.

8 Environmental Assessment

8.1 Project Footprint and Encroachment

The project will consist of the demolition of an existing single-family residence and existing carport (~488 sq.m.) followed by the construction of two (2) single-family residences with two (2) attached garages (totaling ~970 sq.m.). Although the footprints of the new residences are approximately double the footprint of the existing residence, the constructed areas are proposed to be outside of the assessed Streamside Protection & Enhancement Area (SPEA) as determined via the detailed RAR methodology. Based on current information provided by the proponent, no encroachment into the SPEA is being proposed as part of this project.

The 10 m SPEA under RAR is deemed to be protective of the function of Fox Creek as determined through the detailed RAR methodology.

8.2 Potential Project Effects

Given that permanent structures are to be constructed outside of the calculated SPEA as determined under the detailed RAR methodology, coupled with the existing unopened road RoW between the proposed residences and Fox Creek (north), no measurable, significant impact on fish and/or fish habitat or sensitive / terrestrial ecosystems will occur as a result of the project.

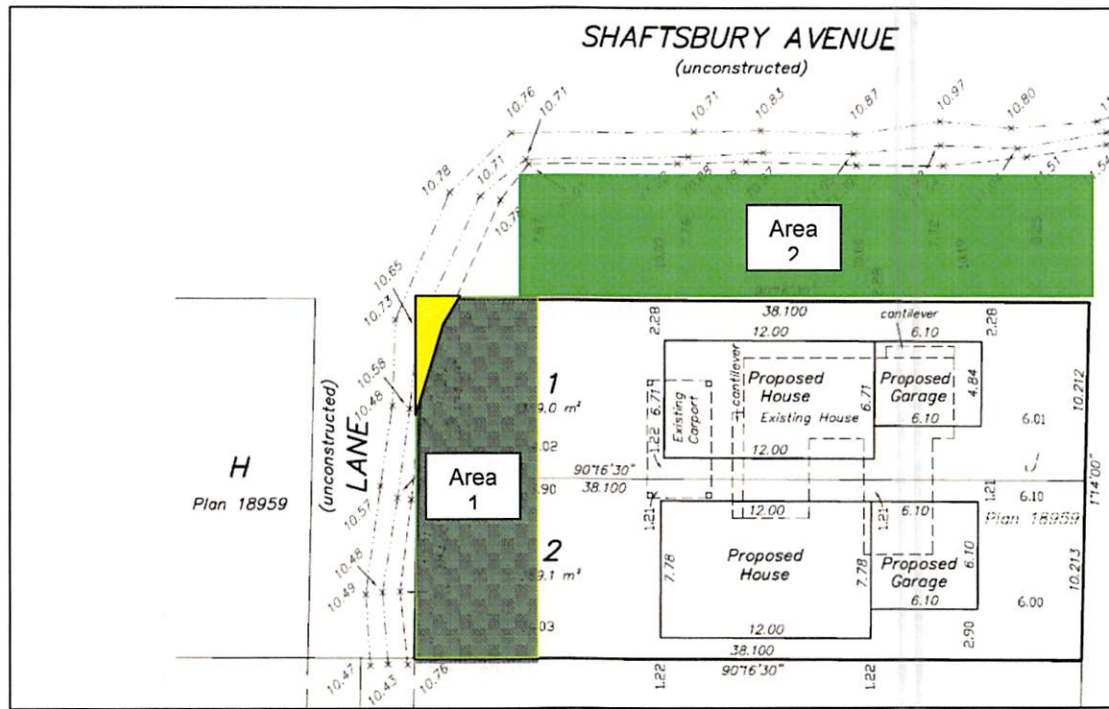
8.3 Preservation and Enhancement Opportunities

Preservation and enhancement opportunities were initially deemed to be limited as the creek and much of the riparian buffer area are situated on city-owned lands. Moreover, there is an existing unopened gravel road RoW (Shaftsbury Road) on city-owned lands that would benefit from riparian planting, invasive species removal (particularly Japanese

Knotweed) and reclamation. Review by City staff have indicated that offsetting measures could include enhancements to these city owned lands, and are proposed as follows in an effort to meet the objectives of the Smart Growth Committee:

1. Dedicate to the City the area within the northwestern corner / western portion of the site where the watercourse and setback interact with the site as depicted on **Figure 5**.
2. Implement a restrictive covenant within the area adjacent to the stream along the western site boundary coupled with riparian planting. Planting of a hedgerow or fencing would severely limit rear yard use by its occupants without conveying measureable benefit to the creek. As such, AquaTerra recommends native riparian planting coupled with the covenant to limit access / encroachment. Specifically, AquaTerra recommends a 5 m riparian vegetation buffer along the edge of the creek (**Area 1, Figure 5**). This width of buffer is anticipated to be sufficient given the narrow channel width and limited habitat value coupled with little-to-no vegetation on neighbouring properties. In accordance with the DFO Re-vegetation Criteria, planting should be undertaken as follows:
 - All riparian plantings should be based on 1 shrub per 1 square metre density.
 - The botanical name should be used when ordering stock to ensure that the desired native species is being purchased. Each specimen should be tagged with the botanical name and the tag should be left attached after planting.
 - Stock planted during the fall (Sept. - Oct.) and spring (March - April) has the greatest likelihood of surviving. Regular watering may be required until the plants are established. Additional advice on proper planting procedures should be obtained from the nursery supplying the stock.
 - Planting on a given area being enhanced must be successful to an 80% take. If more than 20% die over one year, replanting is required.
 - A minimum of 50% of shrubs planted should be fruit-bearing species.

Figure 5: 3273 Lancaster Street Place Habitat Enhancement Area (Green) and Proposed Area to Dedicate to the City (Yellow).



Re-planting will have direct benefits to fish utilizing the creek, including food, shade and other nutrient inputs. Additionally, shrubs will provide cover and forage for bird and small mammal species. Given the length of the rear yard, approximately 100 shrubs are proposed for the rear yard.

Proposed shrubs and quantities for the area (n=100) is as follows:

- Common Snowberry (*Symphoricarpos albus*) – 2 gallon pots = 20
- Oceanspray (*Holodiscus discolor*) – 2 gallon pots = 20
- Indian Plum (*Oemleria cerasiformis*) – 2 gallon pots = 10
- Twinberry (*Lonicera involucrata*) – 2 gallon pots = 10
- Nootka Rose (*Rosa nutkana*) – 2 gallon pots = 40

3. Rehabilitation of limited permeability surfaces adjacent to stream (**Area 2 – Figure 5**), consisting of:

- Strip roadbase from unopened Shaftsbury Avenue RoW and use elsewhere on-site.

- Import organic soil planting medium – minimum depth – 1 foot (30 cm).
- Plant approximately 95 (n=95) native trees and shrubs, as follows:
 - Western Redcedar (*Thuja plicata*) – 2 gallon pots = 2
 - Bigleaf Maple (*Acer macrophyllum*) – 2 gallon pots = 1
 - Douglas-fir (*Pseudotsuga menziesii*) – 2 gallon pots = 2
 - Common Snowberry (*Symphoricarpos albus*) – 2 gallon pots = 20
 - Oceanspray (*Holodiscus discolor*) – 2 gallon pots = 20
 - Salmonberry (*Rubus spectabilis*) – 2 gallon pots = 10
 - Indian Plum (*Oemleria cerasiformis*) – 2 gallon pots = 10
 - Twinberry (*Lonicera involucrata*) – 2 gallon pots = 10
 - Nootka Rose (*Rosa nutkana*) – 2 gallon pots = 20
- 4. Removal of invasive species in or encroaching on the watercourse.

AquaTerra identified Japanese Knotweed and Himalayan Blackberry on city-owned lands to the north of the site. The owner of 3273 Lancaster Street has agreed to undertaking removal of invasive Japanese Knotweed via stem injection and manual removal of Himalayan Blackberry up to a distance of 10 m from the creek.

9 Environmental Protection Plan

This section includes measures to be protective of the aquatic, riparian and terrestrial habitats along the western and northern site boundaries during proposed subdivision, demolition and construction of two (2) single family residences at the site.

9.1 Instream Works

As there is no planned in stream work is currently proposed, provisions relating to in-stream works are not anticipated to be applicable to the project.

9.2 Danger Trees

There are no trees located within the proposed subdivided house footprints. The two trees in the front yard had recently been removed. Therefore, an assessment of danger trees is not applicable to this project.

9.3 Windthrow

There are no trees located within the proposed subdivided house footprints. The two trees in the front yard had recently been removed. Trees within the riparian boundary to the north and west of the site have grown under existing conditions, with a tapered edge to the west, north and east associated with residential development in the 1950s-60s, and are therefore anticipated to be windfirm. As such, an assessment of windthrow is not applicable to this project.

9.4 Slope Stability

The site is flat and not situated within a 'ravine' scenario. The banks of Fox Creek are shallow and works are not proposed within 10 m of the HWM. Therefore, potential issues relating to slope stability are not anticipated to be applicable to this project.

9.5 Protection of Trees

There are no trees located within the proposed subdivided house footprints. The two trees in the front yard had recently been removed. Trees within the SPEA are on city owned lands and are protected from removal. Therefore, tree protection provisions are not applicable to this project.

9.6 Encroachment

Because the back yard is already utilized for recreational and aesthetic purposes (consisting of a manicured lawn and landscaped areas), AquaTerra recommended riparian planting along the eastern boundary of the creek (north-south reach) as discussed in Section 8.3. Planting within this area will improve riparian habitat function, while discouraging encroachment and maintaining functionality of the rear yard.

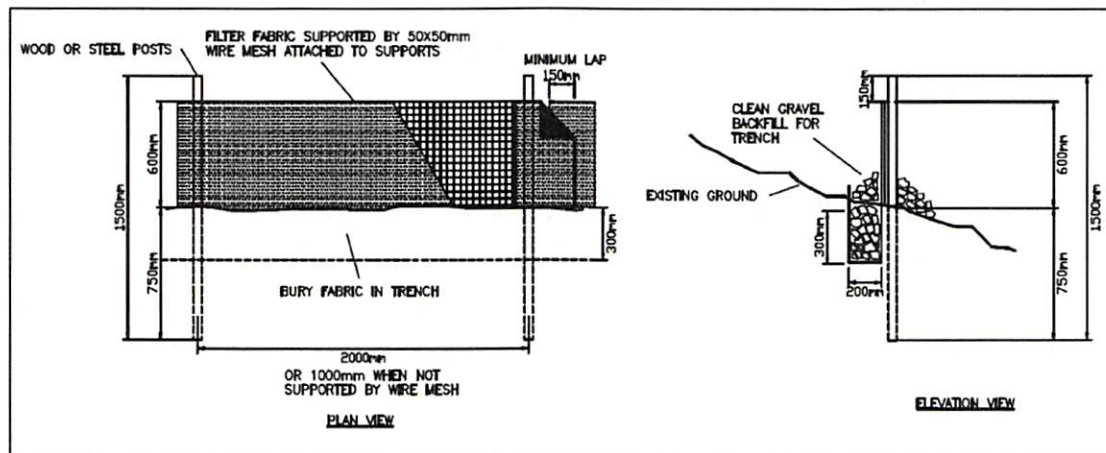
9.7 Floodplain Concerns

The Port Coquitlam database listed the site as 'not in floodplain'. In addition, the site is situated approximately 14 m Above Sea Level (ASL). Fox Creek does not appear to convey large flows based on the upstream catchment area, localized stormwater inputs, and creek substrate / width. As such, floodplain concerns are not anticipated to be applicable to this site.

9.8 Sediment and Erosion Control

The site is flat, sloping gently to the south. The northern reach of Fox Creek is situated across from the unopened Shaftsbury Road RoW and is also situated adjacent and north of an earthen berm area. As such, sediment input and erosional impacts to the northern reach of Fox Creek are not anticipated to occur as a result of construction and no mitigation is proposed. The western reach of Fox Creek may be subjected to sediment inputs during foundation works and stripping of vegetation; therefore, AquaTerra recommends the installation of trenched silt fencing in accordance with the Fisheries and Oceans (DFO) Guidelines. Based on the flat gradient and distance between the project area and the creek, limited earth works associated with the deck addition, and presence of existing vegetation (and hence, ability to filter and detain any mobilized sediments), no project-specific erosion and sediment control (ESC) measures are anticipated to be required for this project.

Figure 6: Trenched Silt Fencing Installation Details from the DFO Land Development Guidelines.



9.9 Storm Water Management

Given the scale of the development project, a stormwater management plan is not anticipated to be required; however, options to reduce surface water run-off during stormwater events should be considered, including:

- a. Constructing a rock-lined drain pit or rock garden, which receives surface run off from the roof top and impermeable areas. Resulting stormwater flow will be encouraged to infiltrate slowly into the ground using this method;

- b. Maximizing permeable ground area and using landscaped areas and/or permeable pavers;
- c. Connecting roof rain leaders to perforated underground pipes, which will encourage the infiltration of stormwater; and/or
- d. Installing rain water collection cisterns or rain barrels to collect water flowing off the roof via rain leaders.

10 Summary Statement

Proposed subdivision of the site into 2 single-family residential lots and associated residential construction are not anticipated to result in any adverse environmental effects, based on the distance between the project footprint and Fox Creek HWM, the small-scale of the project, adherence to the detailed RAR SPEA development setback, and the existing use of the rear-yard. Moreover, the proposed preservation and enhancement measures provided herein are anticipated to result in a net benefit to fish / fish habitat.

11 Closure

We trust this provides the information you currently require. Should you have any questions, please feel free to contact the undersigned.

Respectfully submitted,

Chris Lee, M.Sc., R.P. Bio., QEP, BC-CESCL
Principal, AquaTerra Environmental Ltd.

Attachments:

- 1) Site Photographs

Photo 1: Existing Residence looking westward.

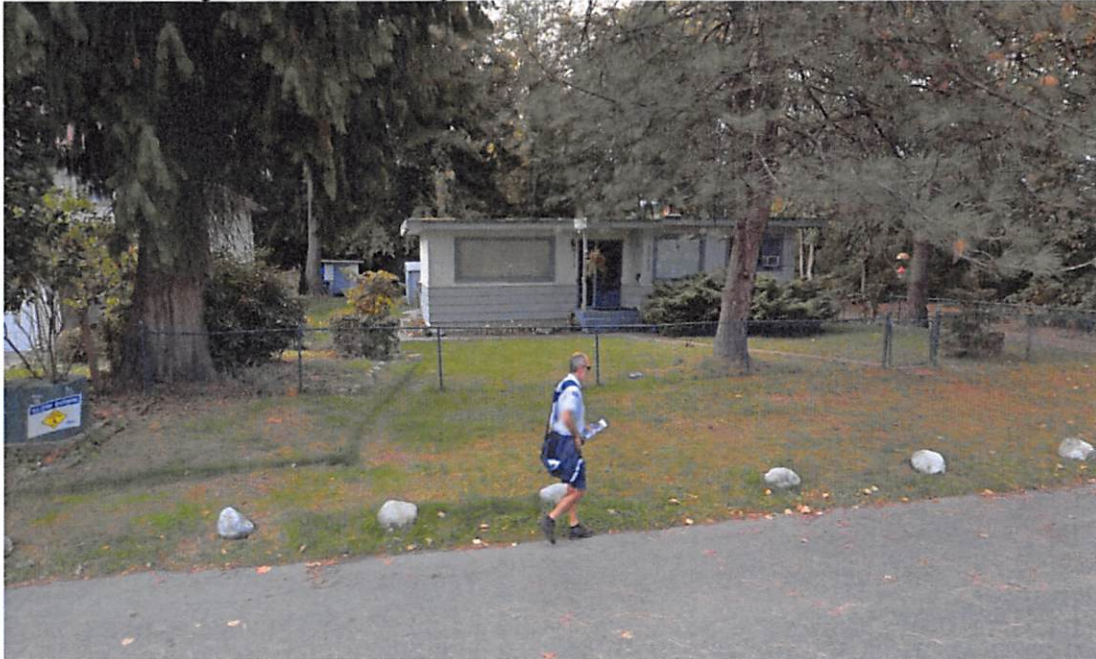


Photo 2: Unopened Road RoW adjacent and north of the site.



Photo 3: rip-rap / outfalls to the north of the site.



Photo 4: Fox Creek at the rear of the site.

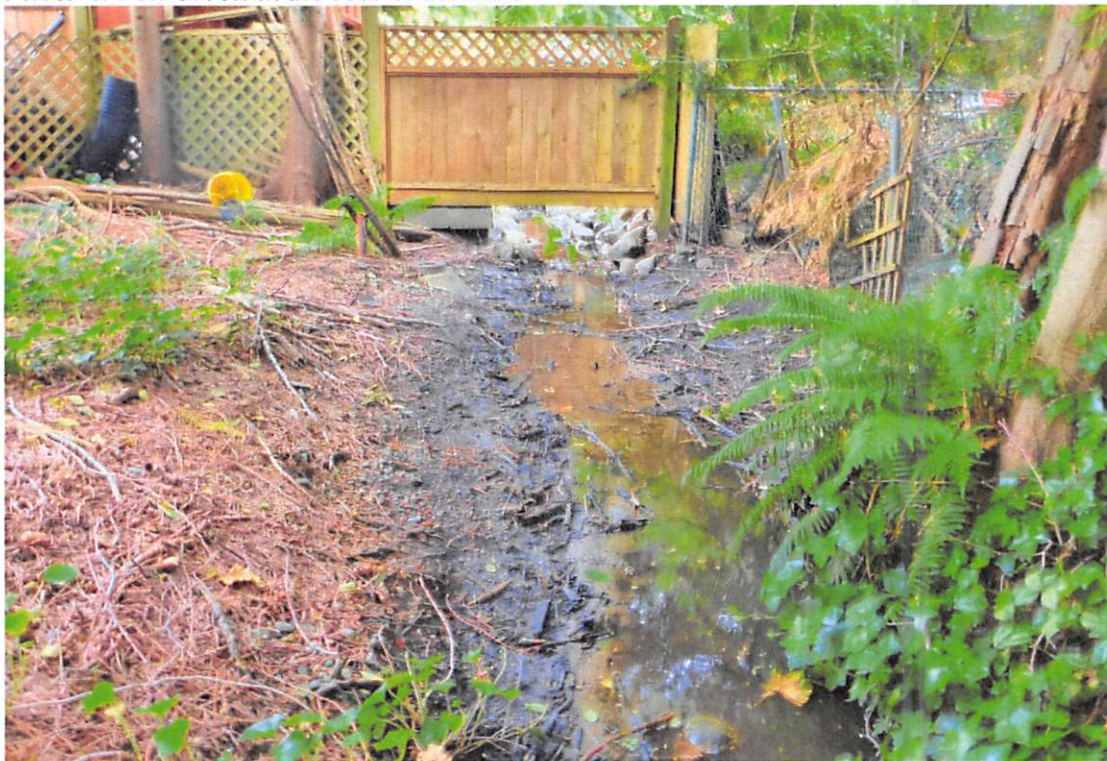


Photo 5: Slope and rip-rapped slope up to unopened road RoW.



Photo 6: Fox Creek channel looking upstream.



Photo 7: Dense invasive Japanese Knotweed growth within the riparian corridor.

