

ENVIRONMENTAL ASSESSMENT MEMORANDUM

TO: Andrew Taylor (Property Owner)
201-2165 St. Johns Street
Port Moody, BC, V3H 0A5



cc: City of Port Moody

DATE: 23 November 2020

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

SUBJECT: 2122 St. George Street – Environmental Assessment Memorandum

1 OVERVIEW

AquaTerra Environmental Ltd. (AquaTerra) is pleased to provide Mr. Andrew Taylor (the “client”) with this Environmental Assessment Memorandum (the ‘memo’) for the proposed sub-division of the site, referenced as 2122 St. George Street in the City of Port Moody (the ‘City), BC. A stormwater line and a stormwater outfall are proposed as part of the sub-division. Refer to **Figure 1** for location details.

Figure 1: Site and Proposed Stormwater Infrastructure Location Overview.



2 PROJECT OVERVIEW

AquaTerra understands that the owner proposes to subdivide the existing lot into two (2) lots. In order to facilitate the lot subdivision and due to lacking stormwater infrastructure along St. Andrews Street, the client is proposing to construct a stormwater line and an outfall discharging to Schoolhouse Creek, approximately 100 m west of the site. Site plan is included in **Appendix A**.

The City of Port Moody had requested an Environmental Assessment (EA) to be completed at the site, including the area along St. Andrews Street and the stormwater outfall location to evaluate the potential of any significant natural features present at the site. The City also requested a completion of an Invasive Plant Management Plan and a Replanting Plan (**Appendix B & Appendix C**), included in this EA. This report is required to be submitted as part of the development permit.

3 STUDY LIMITATIONS

Findings presented in this memorandum are based upon:

- Information provided by the client;
- Available orthophotos / aerial photos;
- Available on-line databases; and
- Field surveys completed by AquaTerra on 08 August 2020 and 18 November 2020.

Consequently, while findings and conclusions documented in this report have been prepared in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession practicing under similar circumstances in the area at the time of the performance of the work, this environmental assessment report is not intended, nor is it able, to provide a totally inclusive evaluation of local area environmental conditions. This report is intended to provide information to reduce, but not necessarily eliminate, uncertainty regarding the on-site features and site subdivision.

This environmental assessment memo must be read in its entirety and has been prepared solely for the use of Andrew Taylor pursuant to the agreement between AquaTerra Environmental Ltd. and the client. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibility of such parties. AquaTerra Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report.

4 FIELD SURVEY RESULTS

4.1 SITE DESCRIPTION

AquaTerra personnel conducted an Environmental Assessment on 08 August 2020, at the site, as well as along St. Andrews Street and the location of the proposed stormwater outfall at Schoolhouse Creek. At the time of the assessments, a house was present at the southeast corner of the site, a sea-can at the northeast corner and a wooden fence (north-south direction) was dividing the lot. A follow-up site assessment occurred on 18 November 2020. Similar conditions were observed during the follow-up assessment.

The western portion of the lot was predominantly empty, apart from a paved driveway and a wooden kid's play station. Majority of the site was occupied by manicured lawn. Two (2) Bitter Cheery (*Prunus emarginata*) trees and a Beaked Hazelnut (*Corylus cornuta*) shrub were present at the site. Other ornamental plants were noted scattered throughout the site.

The proposed stormwater line and outfall locations, along St. Andrews Street, were also assessed. The street was paved with shoulders lacking any significant vegetation, with the exception of a small Japanese Knotweed (*Fallopia japonica*) outcrop on the north side of the road at 2109 St. Johns Street. No stormwater infrastructure (i.e. catchbasins or ditches) was present along the road.

The proposed stormwater outfall location was dominated by non-native and invasive vegetation, such as English Ivy (*Hedera helix*), Bamboo (*Bambusoideae* sp.) and Japanese Knotweed. While English Ivy and Bamboo are considered species of concerns, Japanese Knotweed is a noxious weed, as identified by the Invasive Species Council of BC. Per the *B.C. Weed Control Act*, the City requires residents to manage and control invasive vegetation on private property. In this case, invasive / noxious vegetation is present on the City's property; however, considering the proposed works may impact the infested areas, the proponent is responsible for avoiding the spread of the invasive and / or noxious plant species. As previously mentioned, City had requested an Invasive Plant Management Plan (**Appendix B**) to be included as part of the submission to the City.

Schoolhouse Creek is located approximately 100 m to the west of the site. Schoolhouse Creek (**Watershed Code: 900-044300**) is a fish-bearing creek with Cutthroat trout (*Oncorhynchus clarkii*), Rainbow Trout (*O. mykiss*), Chum salmon (*O. keta*), Coho Salmon (*O. kisutch*) reported present in the stream (Fish Inventories Data Queries 2020). Additional information is provided in Section 6.

5 SUMMARY OF BACKGROUND SEARCH RESULTS

5.1 BC Species and Ecosystems Explorer (<https://a100.gov.bc.ca/pub/eswp/>)

The federal species-at-risk and species-at-risk / local government databases were queried on 20 November 2020 to evaluate the potential for federally-listed endangered, threatened and/or special concern species to occur on-site. The following Schedule 1, Schedule 3, and COSEWIC (Committee on the Status of Endangered Wildlife in Canada) listed species were listed as potentially occurring on-site based on available habitat types observed during the field survey (Section 8):

Mammals

- Pacific Water Shrew (*Sorex bendirii*) – Endangered

Birds

- Band-tailed Pigeon (*Patagioenas fasciata*) – Special Concern
- Barn Swallow (*Hirundo rustica*) – Threatened
- Barn Owl (*Tyto alba*) – Special Concern
- Great Blue Heron (*Ardea herodias*) – Special Concern
- Northern Goshawk (*Accipiter gentilis*) – Threatened
- Olive-sided Flycatcher (*Contopus cooperi*) – Threatened
- Peregrine Falcon (*Falco peregrinus*) – Special Concern
- Short-eared Owl (*Asio flammeus*) – Special Concern
- Western Screech Owl (*Megascops kennicottii*) – Threatened

Reptiles and Amphibians

- Northern Red-legged Frog (*Rana aurora*) – Special Concern
- Pacific Tailed Frog (*Ascaphus truei*) – Special Concern
- Western Toad (*Anaxyrus boreas*) – Special Concern

Invertebrates

- Oregon Forestsnail (*Allogona townsendiana*) – Endangered

Plants and mosses

- Streambank Lupine (*Lupinus rivularis*) – Endangered
- Vancouver Island Beggarticks (*Bidens amplissima*) – Special Concern

Based on existing habitat types on-site, sensitive lichen or fish species are not anticipated to occur on-site.

5.2 Conservation Data (<https://maps.gov.bc.ca/ess/hm/imap4m/>)

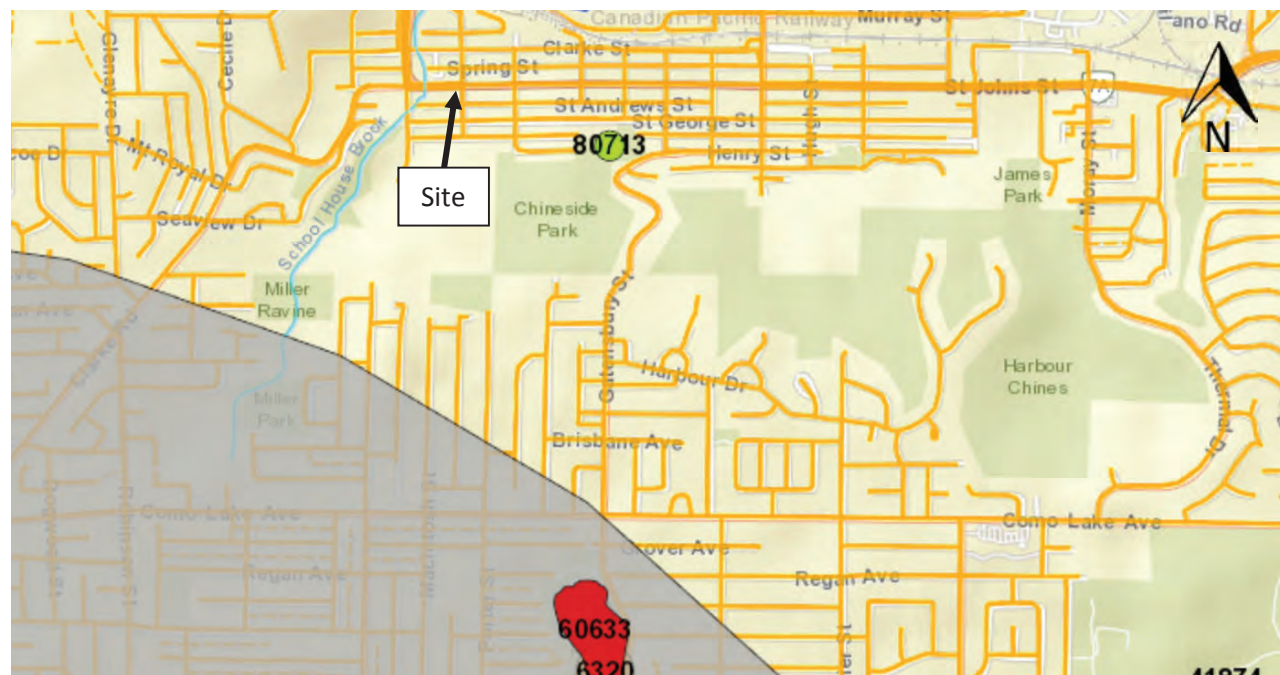
The BC Conservation Data Centre (CDC) database was queried on 23 November 2020 to obtain details on known occurrences of rare animal species or plant communities for the site and surrounding areas. The CDC is part of the Wildlife Inventory Section of the Resource Inventory Branch of the BC Ministry of Environment (MOE) that uses a listing process to identify species that are candidates for legal designation as extirpated, endangered or threatened (**Red Listed**), as well those species that are considered to be of special concern (**Blue Listed**).

The results of the CDC query indicated no rare species or plant communities' occurrence records in the CDC database mapped specifically for the site. Three (3) rare species were recorded within approximately 2 km of the site, which is summarized in **Table 1** and illustrated on **Figure 2**.

Table 1: BC Conservation Centre Results – Organized by Distance from Site.

Shape ID	Common Name	Scientific Name	Provincial Ranking*	Observed Location	Distance from Site	Last Observed
80713	Roell's Brotherella	<i>Brotherella roellii</i>	Red	Stream behind Kyle Park	0.5 km east	2012
60633	Western Painted Turtle	<i>Chrysemys picta pop. 1</i>	Red	Como Lake	1.7 km south	2016
6320	Autumn Meadowhawk	<i>Sympetrum vicinum</i>	Blue	Como Lake	1.8 km south	1974

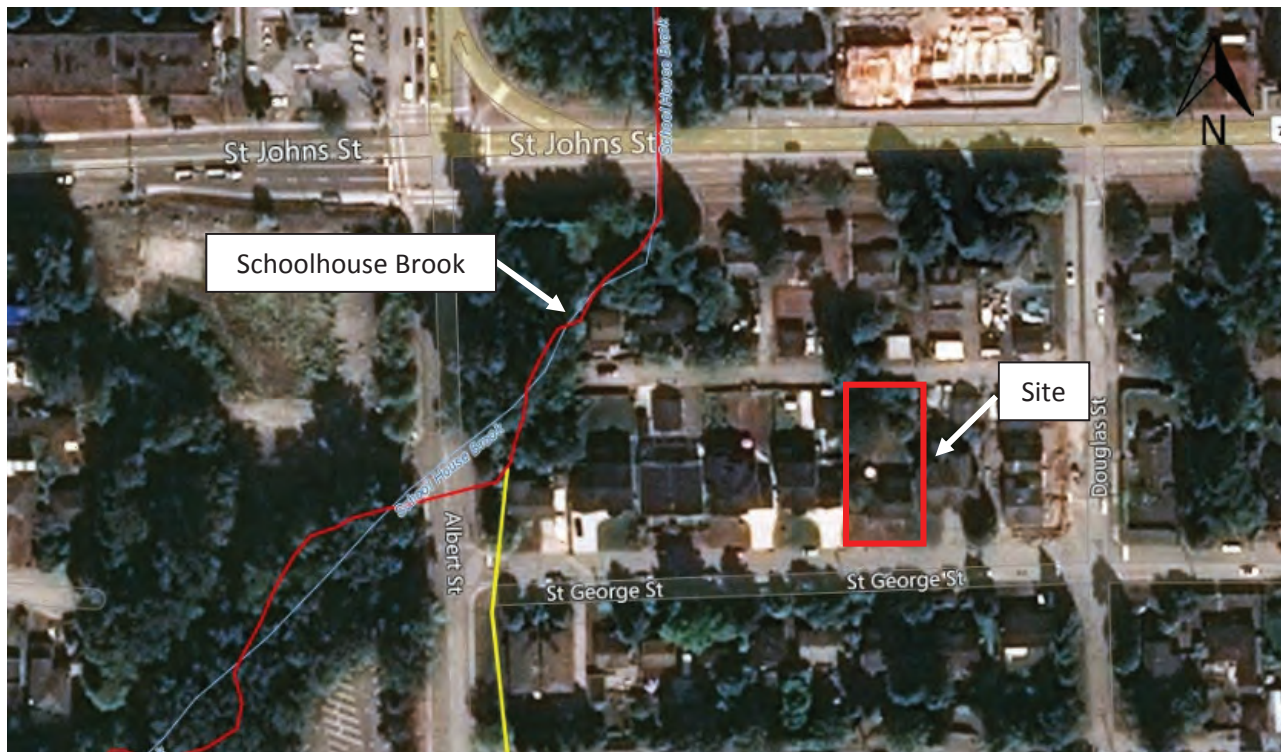
Figure 2: BC Conservation Data Centre Results and Site.



5.3 Community Mapping Network (CMN) - Sensitive Habitat Inventory Mapping (SHIM) (<http://www.cmnmaps.ca/SHIM/>)

The CMN Sensitive Habitat Inventory Mapping (SHIM) was queried on 20 November 2020. No channelized seepages / watercourses were identified at the site; however, Schoolhouse Brook was mapped west of the site. Refer to Section 6 for details relating to the nearby watercourse. Location details are provided in **Figure 3**.

Figure 3: SHIM Mapping Results.



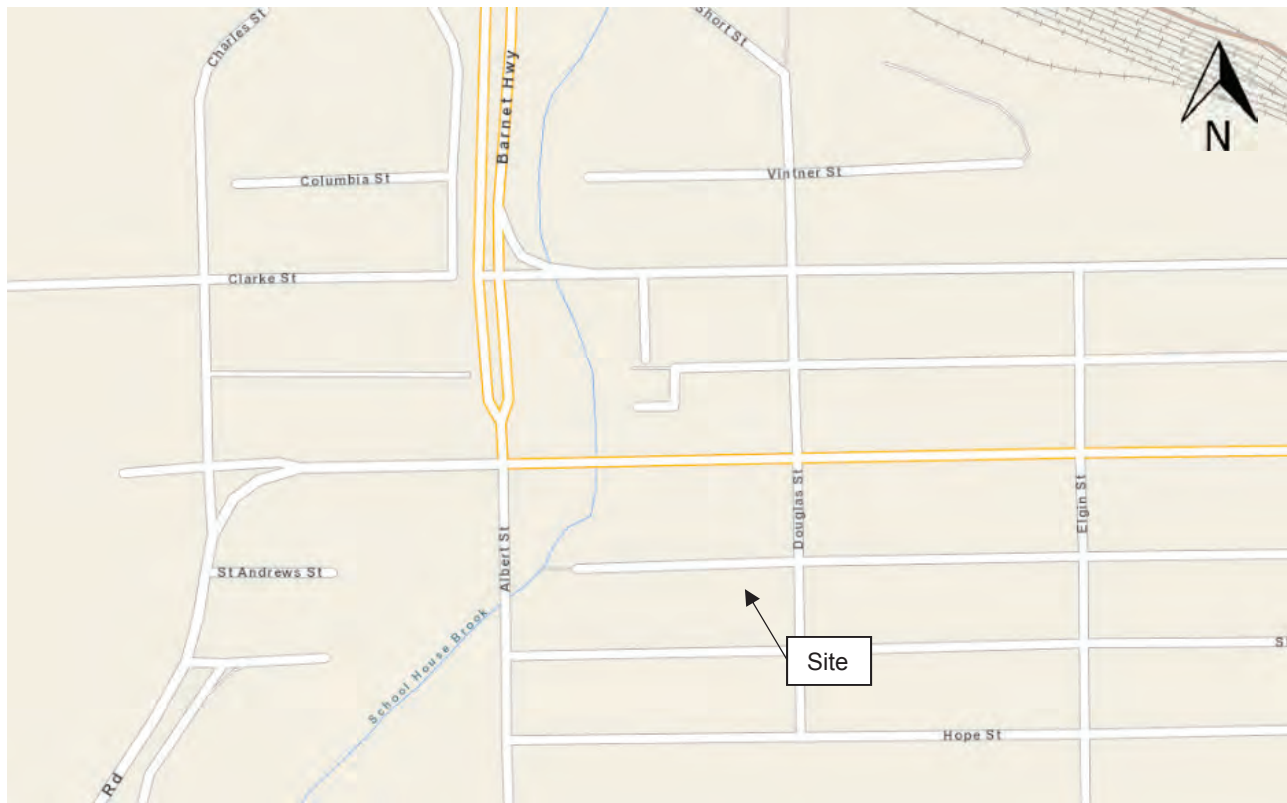
5.3 City of Port Moody GIS Mapping Utility (<https://view.portmoody.ca>)

The City of Port Moody GIS Mapping Utility was queried on 20 November 2020 to assess for potential watercourses within and adjacent to the site, if any, as well as associated setbacks, if applicable. The mapping utility did not identify any watercourses at the site. However, Schoolhouse Creek was identified to the west of the site, as previously mentioned above. City of Port Moody Mapping Utility results area illustrated on **Figure 4**.

Figure 4: City of Port Moody GIS Mapping Utility Results.

5.4 BC iMAP (<http://webmaps.gov.bc.ca/imfx/imf.jsp?site=imapbc>)

The BC iMAP database and mapping utility was queried on 20 November 2020. No watercourses were identified at the site; however, Schoolhouse Brooke was mapped to the west of the site. The site and the surrounding area are not listed as a designated approved or proposed Wildlife Habitat Area (WHA) or a Wildlife Management Area (WMA). The site and the surrounding areas are illustrated on **Figure 5**.

Figure 5: Sensitive Habitat Inventory Mapping Results.

6 WATERCOURSE ASSESSMENT

Schoolhouse Creek (the 'Creek'), located to the west of the site, was identified on the quired databases. The Creek is a fish bearing stream with salmonids present in the reach closest to the site. The wetted width of the channel was approximately 1.5 m – 2.5 m. Channel composition consisted of 40% boulder, 30% cobble, 10% gravel and 20% fines. Remnant broken pieces of concrete were also noted within the channel.

Riparian vegetation consisted of Western Hemlock (*Tsuga heterophylla*), Douglas Fir (*Pseudotsuga menziesii*), Black Walnut (*Juglans nigra*), Red Alder (*Alnus rubra*), Salmonberry (*Rubus spectabilis*), Swordfern (*Polystichum munitum*) and Blacken Fern (*Pteridium aquilium*). Non-native vegetation present along the riparian corridor consisted of Japanese Knotweed, Himalayan Blackberry (*Rubus armeniacus*), Bamboo and English Ivy. Note that majority of the trees were located on the western side of the creek (left bank) and non-native vegetation dominated the eastern side (right bank) of the creek, at St. Andrews Street.

7 ENVIRONMENTALLY SENSITIVE AREA (ESA) ASSESSMENT

No Environmentally Sensitive Areas (ESAs) are present at or adjacent to the site.

8 HABITAT SUITABILITY AND POTENTIAL OCCURRENCE RANKING

Development of habitat suitability ratings for potentially occurring species was based on protocols outlined in the document titled 'British Columbia Wildlife Habitat Rating Standards' (MELP 1999). Given the paucity of data for many provincially and federally species at risk (SAR) specific habitat requirements, a four-class ranking system was used. This ranking system employs high (H), moderate (M), low (L) and nil (N) ratings for defined seasons and habitat uses. Ratings reflect the value of a specific habitat type for a specific SAR relative to the best habitat (benchmark) available for this species in the province. Specifically, the benchmark is the highest capability habitat for the species in the province, against which all other habitats for that species are rated. It is used to calibrate the capability and suitability ratings by providing "the standard" for comparing and rating each habitat or ecosystem unit for a particular season and life requisite. The ranking system criteria are summarized in **Table 2**.

Table 2: Adapted Habitat Suitability Rating Scheme for Species at Risk.

% of Provincial Best	Intermediate Knowledge – 4-Class	
	Rating	Code
100-76%	High	H
75-26%	Moderate	M
25-1%	Low	L
0%	Nil	N

Ratings for potentially occurring provincially and federally-listed rare and endangered species within the site boundaries are presented in **Table 3** and are based on habitat suitability ratings, the reviewed background information, BEC zone, and the detailed site assessment findings.

Table 3: Occurrence Ranking for Sensitive Species Potentially Utilizing the Site Based on Habitat.

Common and Scientific Names	Status	Potential Occurrence Ranking	Rationale
MAMMALS			
Pacific Water Shrew <i>Sorex bendirii</i>	Red; EN	LOW	Most individuals are found within forest near water. Minimal suitable habitat available directly on site. However, some habitat is available within the Schoolhouse Creek corridor.
BIRDS			
Band-tailed Pigeon <i>Patagioenas fasciata</i>	Blue; SC	MEDIUM	Utilize a variety of habitat, including mature forests, open bushland, city yards and more. The site is predominantly void of significant vegetation; however, forested area along Schoolhouse Creek may be utilized for nesting and foraging.

Barn Swallow <i>Hirundo rustica</i>	Blue; TH	LOW	The species prefers open fields with structures, such as bridges or older farm buildings for nesting. The site lacks biophysical attributes required by the species.
Barn Owl <i>Tyto alba</i>	Blue; SC	LOW	Prefers large tracts of open habitat, which is minimal on-site. Minimal nesting habitat present at site. Presence, if any, is anticipated to be transitory.
Great Blue Heron <i>Ardea herodias fannini</i>	Blue; SC	MEDIUM	Minimal foraging or nesting habitat. Great Blue Heron may forage along Schoolhouse Creek.
Northern Goshawk <i>Accipiter gentilis</i>	Red; TH	NIL	Prefers mature forests, far from developed areas, including clear cuts and right-of ways. No nesting habitat is available at the site.
Olive-Sided Flycatcher <i>Contopus cooperi</i>	Blue; TH	LOW	Limited breeding, nesting, or foraging habitat on site. May periodically traverse and/or utilize site and the Schoolhouse Creek corridor during migration.
Peregrine Falcon <i>Falco peregrinus</i>	Red; SC	NIL	Species prefer rock ledges for nesting near an undisturbed forested area. Foraging is typically close to the nesting location. The site lacks biophysical attributes to support this species.
Short-eared Owl <i>Asio flammeus</i>	Blue; SC	LOW	Prefers open areas like grassland, meadows, marshlands etc. No nesting habitat available on site.
Western Screech Owl <i>Megascops kennicottii kennicottii</i>	Blue; TH	LOW	The species is associated with riparian areas dominated by deciduous trees. No nesting and foraging habitat is available on site but the species may potentially utilize the riparian corridor along Schoolhouse Creek.
AMPHIBIANS AND REPTILES			
Northern Red-legged Frog <i>Rana aurora</i>	Blue; SC	MEDIUM	Some suitable habitat is available within Schoolhouse Creek; however, the site is not anticipated to support the species.
Pacific Tailed Frog <i>Ascaphus truei</i>	Blue; SC	HIGH	Species found in cold, fast running streams. Schoolhouse Creek may support the species. The species was observed in the similar streams in Port Moody.
Western Toad <i>Anaxyrus boreas</i>	Yellow; SC	LOW	The species utilizes shallow ponds or slow flowing streams with sufficient riparian area. The site lacks the necessary habitat attributes; however, Schoolhouse Creek riparian corridor may support the species.
INVERTEBRATES			
Oregon Forestsnail <i>Allogona townsendiana</i>	Red; EN	LOW	The species prefers broadleaf forest containing Stinging Nettle. No stinging nettle was noted at the site or Schoolhouse Creek riparian corridor, at St. Andrews Street.
PLANTS AND MOSSES			
Streambank Lupine <i>Lupinus rivularis</i>	Red; EN	LOW	The species is typically found along dykes and railroad beds. The site and the Schoolhouse Creek corridor lacks the necessary attributes.
Vancouver Island Beggarticks <i>Bidens amplissima</i>	Blue; SC	LOW	Species is typically found in wetland habitat including, ditches, stream-sides or tidal river benches. No necessary habitat is available at the site. No wetted benches were noted along Schoolhouse Creek corridor near St. Andrews Street.

9 RECOMMENDATIONS

The following recommendations for the site are based on background search results, applicable Best Management Practices (BMPs) and municipal, provincial and federal guidelines:

1. To avoid undue impacts to potentially nesting birds, do not remove or alter vegetation during the typical sensitive peak breeding period between March 15 and August 15. The current (2012) Develop with Care manual has recently extended the passerine nesting window to March 1 – August 31 and the Canadian Wildlife Service (CWS) website should be checked for updates prior to the onset of works. Disturbance or destruction of nesting birds contravenes Section 35 of the *Wildlife Act* and the *Migratory Birds Convention Act*. If land-clearing is necessary within this window, proceed only once a Songbird Nesting Survey (SBNS) is conducted in accordance with CWS protocols to ensure that nesting or breeding wildlife impacts are assessed. If active raptor nests are found, implement buffer zones to reduce sensory disturbance until chicks have fledged.
2. Reduce and mitigate total storm runoff volume and flow velocities, where feasible, through use of appropriate detention areas, swales, etc.
3. Minimize compaction of sediments to maintain subsurface flows to the watercourse east of the site, where feasible.
4. Install silt fencing (or equivalent) to prevent material migration off-site, where applicable, prior to onset of construction activities.
5. Protect any excavated/stockpiled material or exposed slopes from being eroded into nearby watercourses. Protective measures include, but are not limited to: covering the material with erosion blankets/poly, seeding or planting with native vegetation, installation of silt fencing.
6. Consideration will be given to proper invasive species (specifically Japanese Knotweed) management per the Invasive Plant Management Plan (Appendix B).
7. Develop a site-specific Erosion and Sediment Control (ESC) plan in accordance with City of Port Moody requirements prior to the commencement of clearing, grubbing and/or construction-related activities within the site area boundaries. Retain an independent

environmental monitor (and a Qualified Environmental Professional [QEP]) to assess the adequacy of the ESC plan over the duration of construction. The focus of the ESC plan for the site should serve to protect sensitive habitats.

10 CLOSURE

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

Respectfully submitted,

 Digitally signed by Chris Lee
DN: cn=Chris Lee,
o=AquaTerra
Environmental Ltd., ou,
email=chris@aquaterra.ca,
c=CA
Date: 2020.12.03 16:36:29
-08'00'

Chris Lee, M.Sc., R.P. Bio., QEP, BC-CESCL

Principal, Senior Project Biologist

AquaTerra Environmental Ltd.

Attachments:

1. Photographs
2. Appendix A – Site Plan
3. Appendix B – Invasive Species Management Plan
4. Appendix C – Habitat Restoration / Replanting Plan

Photographs

Photo 1: Site overview, looking south.



Photo 2: Site overview, looking north.



Photo 3: Wooden fence at the site, looking south.



Photo 4: St. Andrews Street, looking west.



Japanese
Knotweed along St.
Andrews Street.

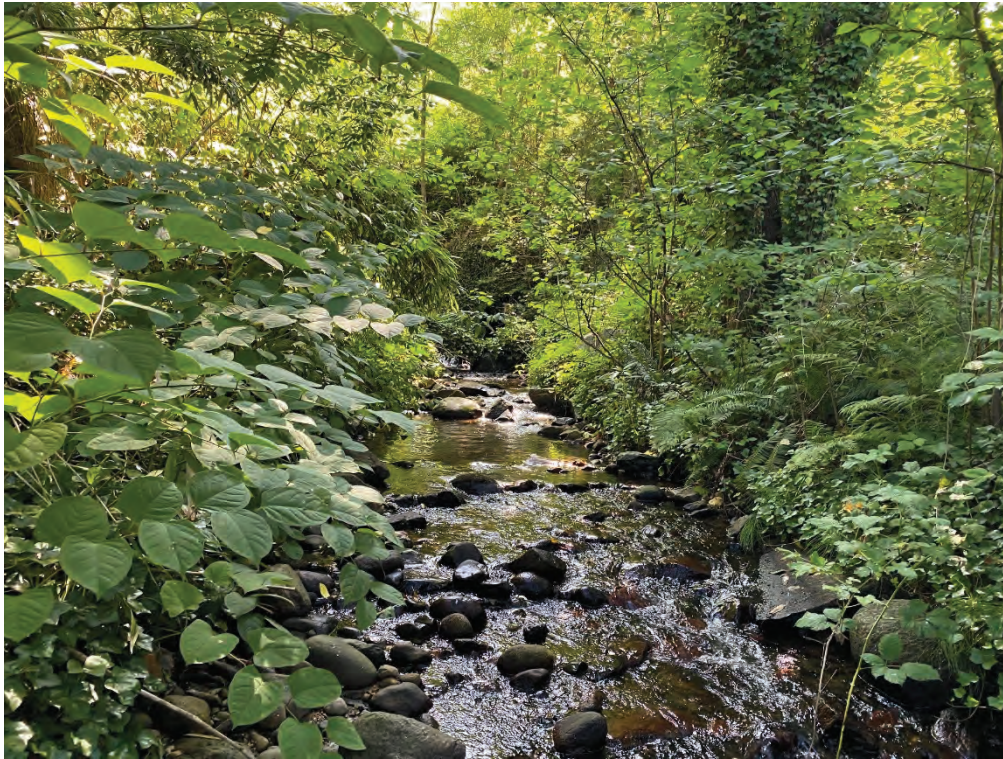
Photo 5: Japanese Knotweed present along Schoolhouse Creek.



Photo 6: Invasive plants present within the riparian area of Schoolhouse Creek at St. Andrews Street.



Photo 7: Overview of Schoolhouse Creek and riparian vegetation at St. Andrews Street.



APPENDIX A
SITE PLAN

APPENDIX B
INVASIVE PLANT MANAGEMENT PLAN

INVASIVE PLANT MANAGEMENT PLAN

TO: Andrew Taylor
201-2165 St. Johns Street
Port Moody, BC
V3H 0A5



DATE: 26 November 2020

FROM: Chris Lee, M.Sc., R.P. Bio., QEP, BC-CESCL

Subject: Invasive Plant Management Plan – 2122 St. George Street

AquaTerra Environmental Ltd. ('AquaTerra') is pleased to provide Andrew Taylor (the 'client') with this Invasive Plant Management Plan (the 'plan'), which summarizes recommendations associated with the disturbance / removal of Japanese Knotweed (*Fallopia japonica*) and other invasive plants (namely English Ivy (*Hedera helix*) and Bamboo (*Bambusoideae* sp.) in proximity to the proposed stormwater outfall (discharging to Schoolhouse Creek) and stormwater line installation along St. Andrews Street, associated with sub-division of 2122 St. George Street in Port Moody, BC (the 'site'). Refer to **Figure 1** for location details. The focus for invasive species management is Japanese Knotweed, as AquaTerra anticipates that the prescribed management of this species will also address effective management of other observed invasive vegetation species.

Figure 1: Approximate Locations of Japanese Knotweed and Other Invasive Plants (Yellow).



Japanese Knotweed – a noxious weed (as identified by the Invasive Species Council of BC) was identified along the eastern slope (right bank) of Schoolhouse Creek at St. Andrews Street and a small cluster on the north side of the road at 2109 St. Andrews Street. Per the *B.C. Weed Control Act*, the City of Port Moody (the 'City') requires the residents to manage and control invasive vegetation on private property. In this case, invasive / noxious vegetation is present on the City's property; however, considering the proposed works may impact the infested areas, the proponent is responsible for avoiding the spread of the invasive and / or noxious plant species. The City allows the use of professional pesticide applicator to remove the plant using recommended approaches; however, other methods can be employed, depending on the time restraints, as pesticide application can take multiple years.

Works Potentially Causing Disturbance

As mentioned above, Japanese Knotweed (and/or other invasive plants) are situated adjacent and west of the terminus of St. Andrews Street, an isolated patch at 2901 St. Andrews Street, and at the proposed outfall location. The project-related works that are anticipated to potentially interact with invasive plants are related to excavation during stormwater line and outfall installation. Mitigation measures for any excavated affected soil are discussed in the following sections.

Mitigation Measures

In order to effectively manage Japanese Knotweed and other invasive plants throughout the proposed works, the following Best Management Practices should be followed:

- Avoid unloading, parking, or storing equipment and vehicles in infested areas on-site and off-site.
- Avoid accessing impacted areas – delineate the extents of the Japanese Knotweed infestation and flag the boundary with flagging tape and/or snow fencing to prevent access during construction.
- If access to the affected area is required, remove plants, plant parts, and seeds from personal gear, clothing, vehicles, and equipment before leaving the infested area.
- Minimize soil disturbance during work activities and re-vegetate exposed soil as soon as possible. Avoid cutting or mowing knotweed stems as disturbance will encourage spread.
- Continue to work with the City to manage and treat the Japanese Knotweed infestation.

Japanese Knotweed Removal – Overview

The areas infested by Japanese Knotweed along the eastern bank of Schoolhouse Creek and a small outcrop along St. Andrews Street were identified by a Qualified Environmental Professional (QEP; AquaTerra). The areas infested by Japanese Knotweed are approximately 1m x 1m along St. Andrews Street, and 4m x >10m along Schoolhouse Creek. Note that the extent of Japanese Knotweed along the creek extended beyond the proposed outfall location. As part of approving the sub-division, the client is responsible for properly managing soils containing Japanese Knotweed during construction activities.

As previously mentioned, pesticide application can be utilized during the project, depending on timing. Alternative methods to pesticide application include manual removal of the plant and soil that contains plant roots. Manual methods and procedures are outlined in detail - below.

Note that preference will be given to disposing of the soils containing Japanese Knotweed at the site. Environmental monitoring (QEP) and the client may agree on a location. However, disposal at the site will require a large, excavated pit. Burial depth required, is at least 3 m below the existing ground level, prior to any fill being placed in this location.

Alternatively, soil containing Japanese Knotweed may require to be transported and disposed of at a designated / licensed facility (agreed upon by the client and their qualified environmental professional). Retain all relevant paperwork, in case requested by the environmental monitor or the City. Ensure that the works are completed in compliance with the following recommendations:

- To minimize cross contamination, designated truck(s) will transport the contaminated soil from the site to a designated facility.
- Delineate zones that contain Japanese Knotweed and brief the personnel on site to avoid those areas, unless working directly with removal of Japanese Knotweed.
- During decontamination process, use permeable area (or surround equipment and trucks with straw wattles or an equivalent alternative) to capture any dirt that may contain plant parts or seed and avoid directing water to creek or installed stormwater systems.
- Follow the decontamination procedures for trucks, excavators and personnel, as outlined below.
- Note that Japanese Knotweed “may extend from a parent plant up to 20 metres laterally and up to a depth of 3 metres” (Invasive Species Council of BC). Therefore, full-time

environmental monitoring by a qualified professional may be required during removal of Japanese Knotweed, to determine the extent of the root systems in the field.

- Additional measures may be recommended by the environmental monitor, on site.

Decontamination procedures

Truck decontamination:

- Position trucks outside of the delineated area to avoid tracking of contaminated soil debris throughout the site and off site.
- Carefully load the trucks to prevent soil falling outside.
- Once the truck is loaded, compact the load with the excavator bucket and protect with geotextile material or a layer of clean fill to prevent spreading on route to the disposal facility.
- Upon completion, the environmental monitor will inspect the trucks to ensure no soil remains in the bed of the trucks and wheel.

Excavator decontamination:

- Preference will be given to positioning the excavator on a pad (such as swamp pads on top of geotextile) to avoid equipment contact with contaminated soil.
- Geotextile or other material that comes in contact with contaminated soil is to be disposed of at a designated facility or properly decontaminated.
- In case excavator comes in contact with contaminated soil, the equipment shall be thoroughly cleaned / decontaminated.
- Equipment decontamination will include sweeping the inside of the cabin of any excess dirt, cleaning the tracks and bucket (and any other parts that came in contact with contaminated soil. Power washer may be required to remove all soil remains from the tracks and other areas.
- Decontamination shall be completed on a permeable surface to avoid water run-off.
- Upon completion, the environmental monitor will inspect to ensure no soil remains on the tracks or the bucket of the excavator.

Personnel decontamination:

- Shake off / brush off the outer wear, such as visi-vest, jackets, and pants within the delineated or decontamination area.

- Remove any soil inside and outside the boots using a stiff brush and bucket of clean water.
- Used water is to be poured through permeable material to retain any of the soil that may contain parts of knotweed plant or seeds. Used permeable material is then required to be disposed off with the removed contaminated soil.
- Upon completion, the environmental monitor will inspect all personnel, including their outer wear, personal protective equipment and boots, to ensure no soil remains.

Disposal:

- Off site: Japanese Knotweed can be effectively disposed of at a designated landfill or composting site (i.e., Vancouver Landfill or City of Burnaby green waste depot). During transportation, the affected soil should be covered/tarped to avoid potentially affecting off-site properties during transportation.
- On site: Affected soil can be potentially buried and backfilled on-site if the material is deemed to be structurally sound, or if the burying location does not interact with the residence. The minimum depth of excavation for burying is 3 m.

Responsibilities**The Client**

The client and its contractors are the required to follow the procedures outlined in this document. He client / contractor will liaise with AquaTerra, to ensure Environmental Monitor will be present on-site during the excavation works within the known Japanese Knotweed infested area(s). Personnel will follow the guidance provided by AquaTerra, to ensure compliance.

AquaTerra Environmental

Environmental Monitor is required to be present on-site for Japanese Knotweed removal works, as required, to ensure compliance with the outlined procedures, regulations, and Best Management Practices (BMPs). The excavated soils will be visually inspected to determine presence / absence of Japanese Knotweed roots and the extent of the contamination (including width and depth).

Closure

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

Respectfully submitted,

 Digitally signed by Chris Lee
DN: cn=Chris Lee, o=AquaTerra
Environmental Ltd., ou,
email=chris@aquaterra.ca, c=CA
Date: 2020.12.03 16:36:46
-08'00'

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

APPENDIX C
RE-PLANTING PLAN

RE-PLANTING PLAN

Overview

The City of Port Moody (the 'City') requested that a Re-planting Plan (the 'Plan') be included in the submission to the City, as part of the Environmental Assessment (EA) memorandum. The following Plan includes proposed locations, plants species and general recommendations for restoration works associated with the proposed sub-division project at 2122 St. George Street in Port Moody (Figure 1).

Due to lack of native vegetation and ecological value at the site, AquaTerra proposes that restoration and re-planting focuses on the high ecological value areas, such as the eastern bank of the riparian area of Schoolhouse Creek. This area is also likely to be disturbed during the proposed stormwater headwall outfall installation. Currently, the area is dominated by invasive and non-native vegetation. Re-planting should occur in conjunction with the Invasive Plant Management Plan (IPMP) (Appendix B).

Figure 1: Approximate location of the stormwater outfall and proposed restoration location



Proposed Works

The proposed headwall outfall is approximately 4 m in length by 2 m in width; however, it is anticipated that a larger area may be impacted to accommodate construction. Therefore, an estimated area of disturbance is 30 m². Details area provided below.

Based on the vegetation observed within the riparian area and preferred plant list by the City of Port Moody, AquaTerra recommends the following:

Trees

- Western Hemlock (*Tsuga heterophylla*) – upper slope – 1.5 m height (n=2)
- Big-leaf Maple (*Acer macrophyllum*) – upper- mid slope – 1.5 m height (n=4)
- Pacific Willow (*Salix lasandra*) (stakes) – mid-lower slope – 4 stakes

Total: 6 pots and 4 stakes

Shrubs

- Salmonberry (*Rubus spectabilis*) – mid-lower slope – 2 gallon pots (n=9)
- Red-osier Dogwood (*Cornus sericea*) – mid-lower slope – 2 gallon pots (n=5)
- Red Elderberry (*Sambucus racemosa*) – upper slope – 2 gallon pots (n=3)

Total: 17 pots

General Planting Recommendations

- Ensure the banks are stable prior to replanting.
- Retain any large organic debris that does not impeded flows or fish migration, within the riparian area.
- All tree and shrub species should be nursery stock for successful transplanting.
- Tree stock should be a minimum of 1.5 m in height and planted in the width suitable for mature stock (i.e. no greater than 2.0 meters apart).
- Tree and shrubs should be planted in the fall (September to October) and spring (March to April). Planting outside of these windows may necessitate watering requirements, depending on the Qualified Environmental Professional's (QEP's) recommendation.
- At least, 80% of the planted trees and shrubs should survive, or additional planting will be required.
- Depending on QEP's recommendations and soil conditions, additional soil may be required to establish proper growth.



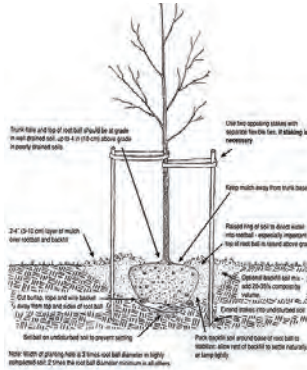
PROPOSED 2 LOT SUBDIVISION
AT 2122 ST. GEORGE STREET, PORT MOODY

PLANT DETAILS

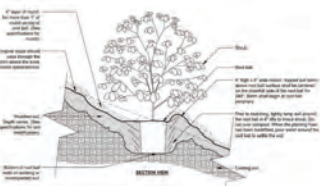
Plant Species	Common Name	Count	Plant Size	Notes
Polygon 1 (A1) = 10 sq.m.				
<i>Rubus saxatilis</i>	Salmalberry	5	1	Lower bench
<i>Sorbus nemoralis</i>	Red Elderberry	3	2	Mid-upper bench
<i>Prunus heterophylla</i>	Western Honeysuckle	2	4.2m height	Upper bench
Polygon 2 (A2) = 12 sq.m.				
<i>Rubus saxatilis</i>	Salmalberry	4	1	Lower bench
<i>Sorbus nemoralis</i>	Red Elderberry	4	2	Mid-upper bench
<i>Prunus heterophylla</i>	Western Honeysuckle	2	2	Upper bench
<i>Acer macrophyllum</i>	Big Leaf Maple	2	2.2m height	Upper bench
Polygon 3 (A3) = 5 sq.m.				
<i>Prunus nemoralis</i>	Red Elderberry	2	2	Mid-upper bench
<i>Acer macrophyllum</i>	Big Leaf Maple	2	2.2m height	Upper bench

PLANTING SPECIFICATIONS

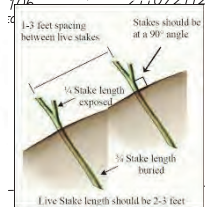
Tree Planting



Shrub Planting



Willow Planting



General Planting Recommendations

- Ensure the banks are stable prior to replanting.
- Retain any large organic debris that does not impeded flows or fish migration, within the riparian area.
- All tree and shrub species should be nursery stock for successful transplanting.
- Tree stock should be a minimum of 1.2 m in height and planted in the width suitable for mature stock (i.e. no greater than 2.0 meters apart).

- Tree and shrubs should be planted in the fall (September to October) and spring (March to April). Planting outside of these windows may necessitate watering requirements, depending on the Qualified Environmental Professional's (QEP's) recommendation.
- At least, 80% of the planted trees and shrubs should survive, or additional planting will be required.
- Depending on QEP's recommendations and soil conditions, additional soil may be required to establish proper growth.

