August 27, 2024

Reference: 12219/P5951

Westcan Property Ltd.
1002 Railway Road
Prince George, BC
V2N 5R9

Attn: James Wankel

Re: 9153 Twinberry Drive (PID: 015-142-370) Environmental Assessment

Dear Mr. Wankel,

Triton Environmental Consultants Ltd. (Triton) was retained by Westcan Property Ltd. (the Client) to conduct an environmental assessment to support a rezoning application for the City of Prince George. The client is proposing to rezone a portion of the property located at 9153 Twinberry Drive (PID: 015-142-370) located within the City of Prince George, BC (the Project; Figure 1).

The Project area is approximately 52 hectares in size and is comprised of six different zoning categories: single residential (RS2), multiple residential (RM 1 & RM3), water recreational (W), greenbelt (AG), and agriculture and forestry (AF) (PG Map 2024). The Client is applying to rezone the northwest corner from RS2 to RM9 (manufactured home park; Attachment 1).

Environmental Setting

The Project area is located within the Mossvale variant of the moist cool subzone of the Sub-boreal Spruce Biogeoclimatic Ecosystem Classification (BEC) zone (SBSmk1; Province of BC 2024a). The SBSmk1 is intermediate with respect to precipitation and temperature, in comparison with other SBS subzones. It is considered to best represent the sub-boreal climate, with relatively long snowy winters and moist cool summers (DeLong et al. 1993). Recurrent disturbances in this variant often lead to forested areas dominated by lodgepole pine (Pinus contorta var. latifolia) and trembling aspen (*Populus tremuloides*). Climax forests are dominated by hybrid white spruce (*Picea* x *albertiana*), with subalpine fir (*Abies lasiocarpa*) being generally absent. Rocky Mountain Douglas-fir (*Pseudotsuga menziesii* var. *glauca*) occurs as a long-lived seral species on drier warm aspects with coarse soils often present. Black spruce occurs in wetlands and in combination with lodgepole pine on poorer upland sites. Paper birch (*Betula papyrifera*) occurs sporadically, often in combination with Rocky Mountain Douglas-fir, and in localized pure stands mostly near Prince George. Black cottonwood (*Populus trichocarpa*) occurs along streams and rivers and is often associated with hybrid white spruce (DeLong et al. 1993).

513875
514075
514275
514475
5985520
5985320
5985120

Meadow Rim Way
Twinberry Dr
WC1
WC2
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Westcan Property Ltd.
Twinberry Drive

Figure 1.
Environmental Overview Assessment

Project No.	Date	Revision
12219-03	Aug 29, 2024	02
Prepared By	**Reviewed By**	**Page Size**
GF	JB	11 x 17

- Site
- Quad Trail
- Drainage
- Watercourse
- NVC / NCD
- Cadastral Fabric
- Project Area
- Ripairian Management Area (15m)
- Waterbody

0 40 80 120 m

Scale: 1:2,000

Projection: NAD 1983 UTM Zone 10N

Base map Source: ESRI Basemaps

TRITON
Environmental Consultants

File Path: G:\1.0 Projects\12219-and M Twinberry Drive RA\12219-and M Twinberry Drive RA.aprx\12219-03_Fig1_EOA_240802

Red- and Blue-listed ecosystems known to occur within the SBSmk1 were identified using the BC Conservation Data Centre's (CDC) BC Species and Ecosystem Explorer (BCSEE) web utility (BC CDC 2024). The BC CDC has adopted plant associations from the BEC system (site series) as the unit for defining terrestrial ecosystems. No Red-listed or Blue-listed ecosystems were identified within the SBSmk1 during the field assessment; it is unlikely that pristine, mature examples of any listed vegetation community type would occur within the Project area given the historical disturbances.

The SBS BEC zone provides habitat for a wide range of wildlife species. The Project area does not occur within any Wildlife Habitat Areas or Ungulate Winter Range (Province of BC 2024a). Shrub dominated wetlands lower than 900 m are important habitat for Moose (*Alces americanus*), American Beaver (*Castor canadensis*), Common Muskrat (*Ondatra zibethicus*), American Mink (*Neovison vison*), and North American River Otter (*Lontra canadensis*). Riparian forests are used by Grizzly Bear (*Ursus arctos*) and American Black Bear (*U. americanus*). Moose (Alces alces), White-tailed Deer (*Odocoileus virginianus*), Canada Lynx (*Lynx canadensis*), and Ruffed Grouse (*Bonasa umbellus*) also use this highly productive habitat. Coniferous sub-boreal forest provides habitat for Wolverine (*Gulo gulo*), American Marten (*Martes americana*), Red Squirrel (*Tamiasciurus hudsonicus*), Spruce Grouse (*Falcipennis canadensis*), and Great Horned Owl (*Bubo virginianus*; DeLong et al. 1993).

Based on the City of Prince George's mapping utility, PG Map, several waterbodies are located within the Project area (City of Prince George 2024) and are shown on Figure 1. Using the Province of British Columbia's mapping utility (iMapBC), additional information is available for one mapped stream (labelled WC1) and one mapped lake (labelled WB1) within the Project area (Province of BC 2024a). The mapped lake is located at the southeast corner of the Project area (Watershed Code [WSC]: 180-007200-65700-5520) and has no historical fish records. The unnamed lake was noted to have a high likelihood of supporting various amphibian species including, Long-toed Salamander (*Ambystoma macrodactylum*), Western Toad (*Anaxyrus boreas*), Columbia Spotted Frog (*Rana luteiventris*), and Wood Frog (*Lithobates sylvaticus*). The mapped stream (WC1) is an unnamed tributary (WSC: 180-007200-65700-5520) and is located at the outflow of the lake at the eastern edge of the Project area. The unnamed stream is a tributary to a second order stream (WSC: 180-007200-65700; labelled WC2) that flows into McMillan Creek (WSC: 180-007200) approximately 4 km downstream (Province of BC 2024a; Figure 1). No historical fish information is available for the unnamed streams; however, McMillan Creek is known to contain a variety of fish species (Province of BC 2024b).

PG Map designates a 30 m sensitive riparian area and wetland buffer surrounding portions of the mapped streams and unnamed lake (Figure 1; City of Prince George 2024). PG Map also identified four additional streams feeding into the north portion of unnamed lake and one stream south of Twinberry Drive at the southwest corner of the proposed development area all with a 30 m designated sensitive riparian area buffer surrounding them (City of Prince George 2024).

The proposed development is not within the Riparian Development Permit Area or the Groundwater Protection Development Area (City of Prince George 2024).

Field Assessment

The initial field assessment was completed on July 23, 2024 and a secondary visit was conducted on August 21, 2024. For the first field assessment, weather at the time of survey was warm (22°C by early afternoon) and ground conditions were wet from the previous days' rain shower. Conditions were much drier for the August 21 assessment. Both assessments included reviewing vegetation communities, aquatic resources, and wildlife habitats within the proposed development area with the details described in Table 1. below and illustrated in Figure 1.

Table 1.Twinberry Assessment Observations

Site	***Observation***
1	Man made drainage ditch that conveys accumulated water from the north perimeter of the proposed development and drains into the unnamed lake. The ditch is approximately 1 m wide with large defined banks. The ditch is overgrown with small trees, shrubs, and herbaceous plants and hard to see in some sections (Photo 1).
2	1000 mm corrugated metal pipe (CMP) located on the west shore of the unnamed lake (Photo 2).
3	ATV trail that accesses the unnamed lake.
4	Man made drainage ditch that conveys flow from the center of the Project area into the unnamed lake through the CMP. The ditch is approximately 1 m wide with large defined banks and is overgrown with shrubs and herbaceous plants.
5	Drainage ditch that conveys water into the northwest corner of the unnamed lake. This section of the drainage ditch is dry and is quite flat with a very dense understory which includes: black twinberry (*Lonicera involucrate* var. *involucrate*), cow-parsnip (*Heracieum maximum*), prickly rose (*Rosa acicularis* ssp. *sayi*), and ferns (*Gymnocarpium* sp.).
6 to 7	Main ATV trail and a secondary ATV trial that bypasses a large, ponded area, this ATV trail is also part of the drainage system in the center of the proposed development (Photo 3).
7	Confluence of the two drainage ditches into a single ditch that flows towards unnamed lake.
8	Man made drainage ditch that conveys water from the southwest portion of the proposed development into the unnamed Lake. The ditch is approximately 1 m wide with large defined banks, the ditch is overgrown with small trees, shrubs, and herbaceous plants.
9	Non-classified drainage (NCD) at this reach is a stream that flows into unnamed Lake. This section of stream is backed up with water from the lake. The stream is approximately 1.5 m wide and 0.40 m deep. The understory is very dense including twinberry, cow parsnip, prickly rose, and ferns.

10	Unnamed stream (WC1) that has an average width of 15 m and a bank gradient of 40%. Multiple beaver dams are present along the section survey which has resulted in ponded habitat (Photo 4).
11	Non-visible Channel (NVC), also a well-used game trail (Photo 5).
12	NCD, scouring observed along the drainage channel but not continuous (Photo 6).
13	Old beaver dam with Western Toad observed in pooled water above and below the beaver dam.
14	NVC: also a game trail (Photo 7).
15	NCD, portions of the drainage indicate scouring but its' not continuous (Photo 8).
16	NVC (Photo 9)
17	NVC
18	Quad Trail (Photo 10)

Aquatic Resources

As indicated on PG Map, there is a 30 m sensitive riparian area and wetland buffer surrounding the unnamed stream (WC1), and unnamed lake. The four mapped streams north of the lake, as shown on PG Map (City of Prince George 2024), have been assessed to be drainage ditches; therefore, the 30 m buffer has been removed (Figure 1). The banks of the unnamed stream (WC1) near Site 10 had an average slope of 40%, the channel was approximately 15 m wide, and an unknown depth. Recent beaver activity (dams) was observed in the unnamed stream and is also documented on PG Map (City of Prince George 2024).

The unnamed lake is approximately 1.6 hectares in size and the banks have an approximate slope of 25% near Site 2. Riparian vegetation around unnamed lake consisted mainly of cattails, mixed trees, and shrubs.

No other streams were noted within the Project area during the site assessment. The majority of the Project area located north of the unnamed lake was saturated with standing water and thickly vegetated on July 23, but ground conditions were significantly drier on August 21.

Summary

Both the unnamed stream and unnamed lake are considered streams under the provincial *Water Sustainability Act* (WSA), and any development will need to take that into consideration. A **minimum leave strip of 15 m** is recommended for both the watercourses within the Project area (Chilibeck 1993). Any works "in and about a stream" will require approval from the BC Ministry of Water, Land, and Resource Stewardship (MWLRS) under Section 11 of the WSA.

Western Toad is listed in Schedule 1 of the *Species at Risk Act* (SARA) as a species of Special Concern. It is known to utilize riparian and wetland/ponded habitats adjacent to forest habitats, Overall, the Project provides habitat for the Western Toad as they may

occur in the riparian areas immediately adjacent to the unnamed stream, unnamed lake, drainage ditches, and adjacent upland areas. High-value breeding habitat for this species was identified at the unnamed lake and drainage ditches during both field visits, Western Toads were observed on August 21 near Sites 9 and 13. A General Wildlife permit is required for the collection, transfer/salvage, and release of amphibian species. Approval and a permit from the BC MWLRS may be required depending on the proposed construction activities.

Beaver activity was observed throughout the Project area including at Sites 10 and 16; therefore, any proposed design should take that into consideration. The removal of beaver dams or harvesting of individuals would require approval from the MWLRS under the BC *Wildlife Act* and WSA.

Closure

This report was prepared by Mark Asquith and was reviewed internally and found to be consistent with Triton's internal quality assurance standards. If you have any questions or would like additional information, please do not hesitate to contact Mark Asquith (masquith@triton-env.com) or Jen Bond (jbond@triton-env.com) by email or by phone at 250-562-9155.

Sincerely,

Triton Environmental Consultants Ltd.

Mark Asquith, CPESC, RBTech.
Qualified Environmental Professional

REFERENCES

[BC CDC 2024] British Columbia Conservation Data Centre. 2024. BC Species and Ecosystems Explorer [web utility]. BC Ministry of Environment, Victoria, BC. [Accessed July 2024]. Available from: http://a100.gov.bc.ca/pub/eswp/

[Province of BC 2024a] Province of British Columbia. 2024a. iMapBC Web Application. [Accessed July 2024]. Available from: http://maps.gov.bc.ca/ess/sv/imapbc/

[Province of BC] Prince of British Columbia. 2024b. Fisheries Inventory Data Queries. [Accessed July 2024]. Available from: https://a100.gov.bc.ca/pub/fidq/viewWatershedDictionary.do

[Delong 1993] DeLong, C., D. Tanner, and M.J. Jull. 1993. A Field Guide for Site Identification and Interpretation for the Southwest Portion of the Prince George Forest Region – Land Management Handbook 24. Research Branch, Ministry of Forests, Victoria, BC.

[DFO 1993] DFO Habitat Management Division of the Department of Fisheries and Oceans and the Integrated Management Branch of the Ministry of Environment, Lands and Parks.1993. Land Development Guidelines for the Protection of Aquatic Life.

[MOF 1998] Forest Practices Code of British Columbia. Authority Forest Practices Code of British Columbia Act Operational Planning Regulation. Fish-stream Identification Guidebook. – 2nd edition version 2.1. [Accessed July 2024]. Available from: https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/fish-data-information/fishstream.pdf

[PG Map] City of Prince George Mapping Application. [Accessed July 2024]. Available from: https://pgmap.princegeorge.ca/Html5Viewer/index.html?viewer=PGMap

Site Photographs

Photo 1. Site 1, view of dry drainage ditch and existing vegetation

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Photo 2. Site 2, view east of existing CMP and unnamed lake

Photo 3. View of main ATV trail located within the Project area

Photo 4. Site 10, view upstream of unnamed stream (WC1); note ponded habitat due to beaver activity

Photo 5. Site 11, assessed as an NVC and a well-used game trail.

Photo 6. Site 12, this reach is assessed as an NCD; due to the presence of scouring but it is not continuous.

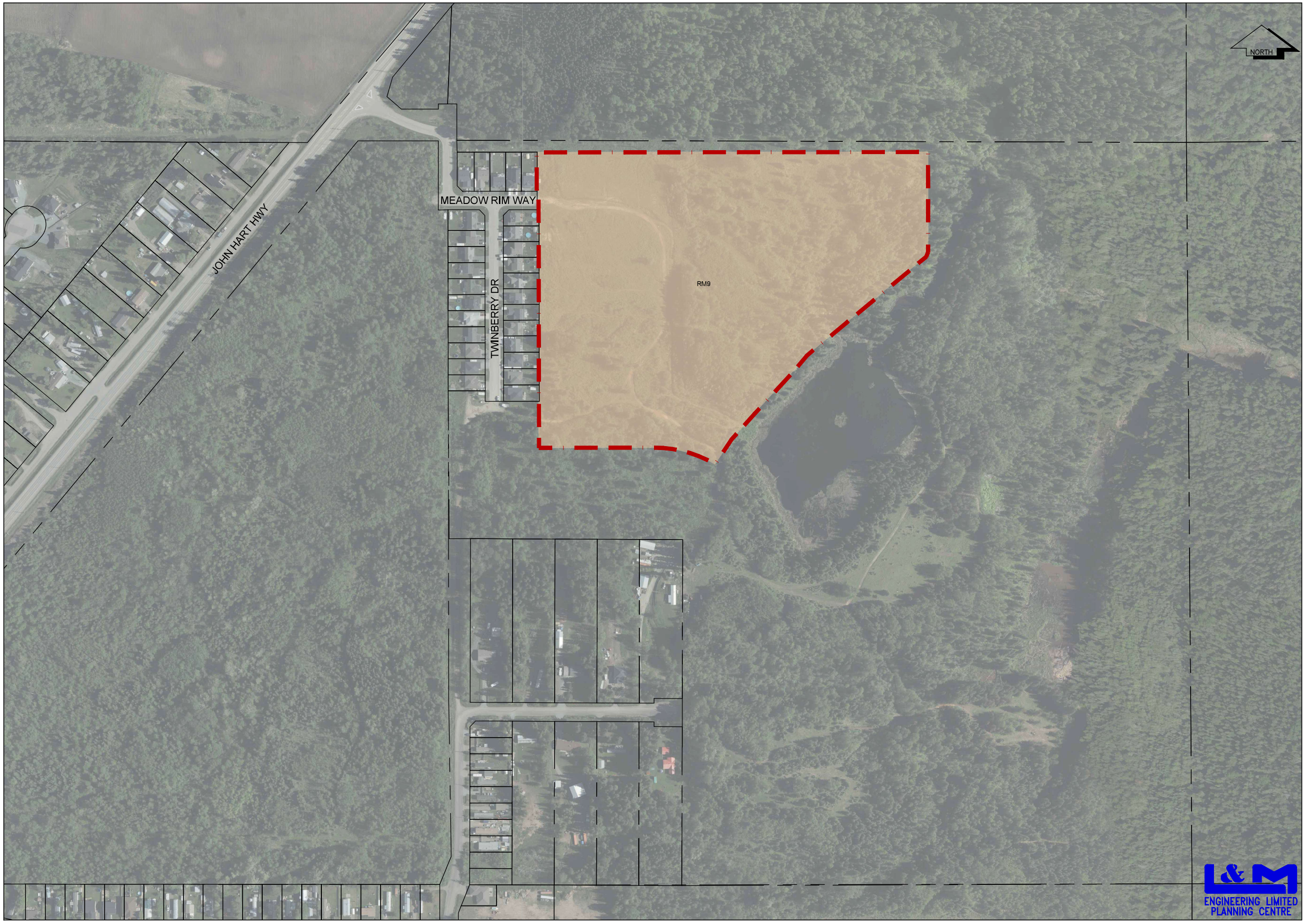
Photo 7. Site 14, assessed as a NVC, observed to be a game trail.

Photo 8. Site 15, NVC

Photo 9. Site 16 NCD, portions of the drainage shows scouring but not continuous

Photo 10. Site 18, view of a quad trail at the southwest corner of the proposed development that is identified as a stream on PG Map.

ATTACHMENT 1



LEGEND

SUBJECT AREA BOUNDARY

CoPG ZONING

RM9 — MANUFACTURED HOME PARK

NO.	DATE	REVISION	DR.
2	FEB 10	BASED OFF CITY COMMENTS	MS
1	DEC 14	ZONING BOUNDARIES	MS

CITY OF
PRINCE GEORGE
Planning & Development

DRAWN:	MS
CHECKED:	AT
ENGINEER:	JRB
PLANNER:	AT
DRAWING FILE:	C3D18 1546-05 RZ BASE.dwg
DATE:	14/12/22
SCALES:	1:4000

WESTCAN PROPERTY LTD.
MEADOW PARK

EXISTING & PROPOSED
ZONING

L&M PROJECT No.
1546-05

DRAWING No.
RZ:03

SHEET No.	REV. No.
3 OF 4	2

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