

**Management Plan for  
Steven Vestergaard's**

Licence of Occupation Application #100137156



Prepared by  
JCH Forestry Ltd.  
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## Management Plan for Steven Vestergaard

### Section B

#### I. Background

##### Project Purpose/Objectives/Proposed Use

The purpose of this application is to obtain authorization to occupy **2.636 ha** of Crown land, including approximately **0.692 km** of existing roadways, to allow long term vehicle access from public roads to various parts of the applicant's private properties and his drinking water diversion structure. This authorization will also enable the applicant to proceed with work to mitigate existing geotechnical hazards associated with certain sections of these roadways and related land alterations, including the water diversion structure (reservoir). Once approval to proceed has been received the remediation and slope stabilization work detailed in the reports included with this application, will be carried out under the supervision of qualified professionals working in accordance with engineered designs and professionally prepared plans. This work will reduce and or mitigate these hazards and restore, to the extent feasible, naturally occurring vegetation and hill slope drainage while maintaining access to and functionality of the applicant's water diversion structure.

The proposed management plan for achieving this objective will be carried out in two phases. The first phase involves exploratory test pitting and topographic surveys at several locations to allow completion of the detailed engineering and design work needed to mitigate the geotechnical hazards. The final phase will be completion of all works needed to provide stable roadways, mitigate rock fall hazard and ensure the water diversion structure presents no risk to down slope resources. Stream restoration of the affected water courses and reservoir area involving planting tree and shrub species will be completed when the required seasonal conditions occur, likely this fall.

For a more detailed explanation of this phased plan and the work required refer to the Westrek Geotechnical Services Ltd. (Westrek) report dated July 24, 2015, Cordilleran Geoscience (Cordilleran) reports dated September 29, 2014 and updated on February 7, the Cordilleran hillslope drainage plan dated November 9, 2015 and Cascade Environmental Resource Group LTD (Cascade) report dated July 27, 2015. These reports which are an integral part of this application are provided as attachments to the digital application. Subject to appropriate fire weather conditions and contractor availability, the earthwork will begin by the middle of August 2015.

A report prepared by Shelley Higman, Ministry of Forest, Lands and Natural Resource Operations (MFLNRO), Senior Geological Engineer, dated June 12, 2015 (Higman Report) outlines a deactivation plan for the roads included in this application as well as other sections of roads located within existing easements and on adjacent private land.

The areas covered in this application have been reviewed in the field and reported on by a number of professionals including staff from the MFLNRO and independent consultants hired by the applicant. Although there is generally no disagreement among these professionals on the identified geotechnical risks there is considerable differences of opinions on the mitigation strategies.

The area under application is currently subject to various trespass notices under section 59 of the Land Act. These notices and the associated Orders call for, among other requirements, the deactivation of these roadways, restoration of the altered lands outside of the roadways (including the riparian areas), slope stabilization of several locations within the application area and the removal of the water diversion structure associated with the Conditional Water Licence 64497 (C64497). Compliance with these Orders by way of implementation of the Higman Report would effectively eliminate vehicle access to the applicant's properties and his water diversion structure. The applicant completed some remedial work associated with these orders in the fall of 2014 but several areas require additional attention.

The applicant will, by way of this application process, supply the Crown with assessments and plans prepared by qualified professionals that will provide for the rehabilitation of certain stream impacts, re-vegetation of specific denuded lands, the long term stability of all of the roadways, maintenance of the natural hill slope surface and subsurface water flow and to reduce the associated rock fall hazards while still maintaining all of the existing access road infrastructure. Maintaining permanent vehicle access to the water diversion structure as well as long term use of this water source is imperative to the applicant's long term plan for his properties.

The existing roadways accessing the properties cross through a variety of land tenure designations including easements, local government jurisdictional boundaries, land parcels held by the Crown, designated public road rights of way, transmission line rights of way as well as unencumbered Crown land. The application area includes previously altered lands, natural areas and areas that require additional alteration so the applicant can complete reclamation/rehabilitation, slope stabilization, the installation of rock fall protection works and conduct hill slope drainage control.



This application does not include Crown land within three existing easements in DL 1815 that are currently held by the applicant nor does it include Crown land associated with the applicants waterline authorized under C64497 except where it overlaps the application area covered by the access roadway right of way. Construction, use and maintenance of the roadways in these areas are authorized through existing Easements, Licences and Permits.

Authorization to install a waterline and diversion structure was granted to the previous owner of block 3 DL 2935 under C64497 by the Ministry of Environment on February 16<sup>th</sup> 1987. Authorization to occupy Crown land for this purpose was granted under Permit No. 15946. It is understood that the water line was installed shortly after the 1987 approval date and has not been relocated since. The location of this line has not been mapped as part of this application but is assumed to be directly below the intake structure access road. Rights under C64497 and 15946 were transferred to the applicant when he purchased block 3 DL 2935.

Given the topography encountered along the roadways under application and the limited options for relocation it is very unlikely that all of the roads could be upgraded to Ministry of Transportation standards for public secondary or tertiary roads. Certain sections have road grades in excess of 25%, with an average road width of 4-5 meters and switch back radii as little as 4-5 meters. Local topography, the presence of rock and the limited alternatives for relocation and grade adjustments relegate these roadways to private “driveway” status.

The current zoning of applicant’s properties is understood to be A1.

There is no commercial activity planned for the area included in this application.

## II. Location

### General Description/Access Plans/Traffic/Land Use

Refer to the overview and detailed mapping for the location of the existing roadways, connectivity to the public roads and other crown land covered under this application. The roadways depicted represent the actual compacted road surfaces, pull outs and curve widening. Unless noted, clearing limits are not indicated.

The applicant’s two rectangular shaped properties (block 2 and 3 of DL 2935) are located on steep rocky slopes directly above Highway 99 approximately 3 kilometers north of Lions Bay. The properties extend up slope above the highway to the east to potential building sites locate on a gently sloping bench with panoramic views of Howe Sound. The topography along the highway to the north of the properties precludes any reasonable chance of the development of a suitable highway connection and road access. The only feasible access to the applicant’s property is from the Highway 99 interchange at Brunswick Beach Road.

From here access to the application area is by way of Crystal Falls Road, Glendale Avenue and Magnesia Springs Road (MSR).

Although MSR is a public roadway, it appears to most visitors to be a private driveway and has signage to that effect beyond Brunswick Beach Road. As such the roads connecting to the application area experience low volumes of vehicle traffic associated mainly with the 20 people who reside in the homes located in the general area. Very little variation in traffic volumes takes place throughout the year.

The planned use of the applicant's properties is to construct private residences and services that would eventually include above ground electric transmission lines connecting to the existing electrical infrastructure servicing the homes along Magnesia Springs Road.

This application does not include lands occupied by the roads within Block 4 of DL 2935, located immediately north of the applicants property. This property is held by BC Transportation Financing Authority, a separate legal entity from the Government of BC.

Access for emergency vehicles (Fire trucks and Ambulances) beyond the lower parts of MSR will be limited due to road grades in excess of 25% and small radius switchback curvatures. The roadways under application have similar grades and curve radius as those beyond MSR. Conventional fire trucks would not likely get beyond the lower parts of MSR.

### III. Infrastructure

The only new infrastructure planned as part of this application will be associated with engineered works required to mitigate identified geotechnical concerns including associated rock fall potential. Refer to the Westrek report for further details on these planned structures.

This application is to seek authorization of the entire existing infrastructure within the application area. Modifications to the existing roads will be carried out in accordance with the plans and designs provided by Cordilleran and Westrek. Ongoing road inspections, routine maintenance and other upgrades will be carried out periodically and following major rain events. Any maintenance work or modifications will be conducted within the area defined in this application.

A lockable gate for security purposes is situated within the applicant's easement Plan BCP 5892A. The location of this gate is indicated on the application maps.

The connection to the public road network is identified on the application maps. There is no connectivity to a Forest Service Road.

Conditional Water Licence 64497 (C64497) allows diversion of water from Battani Creek. The holder is currently entitled to divert 2273 litres (500 imp gallons) per day for domestic water use servicing two dwellings located in block 3 of DL 2935. The permit allows for construction of a diversion structure and installation of a pipe. The applicant intends to eventually seek an amendment to this licence to allow diversion of additional quantities of water for other uses and to allow servicing of other dwellings on block 2. The application to amend will be made under a separate cover directly to the MOFLNRO.

There is no connectivity to a municipal sewer system and, given the location of the potential building sites, none is anticipated. There are no septic fields on the property at this time however, eventually they will be required to service the planned dwellings.

Currently there is no community based garbage pick-up service for these properties. Refuse removal will be either by private contractors or by the occupants.

#### IV. First Nations

No consultation or referral to First Nations has been completed with respect to this application.

### Section C

#### V. Environmental

##### a. Land Impacts

A detailed report prepared by Cascade describes previous environmental impacts to various water courses resulting from the roadways under application and provides mitigation/rehabilitation measures to be implemented as part of this management plan.

No new tree cutting is anticipated within the application area with the exception of those areas where a select number of trees may need to be removed for safe passage of the machinery needed to stabilize identified geotechnical hazards. It is acknowledged that an Occupant Licence to Cut will be required before this takes place. Minor roadside vegetation within the road rights of way in the application area will be cleared periodically to maintain safe passage and sight lines for vehicles.



The only new soil disturbance anticipated within the application area will be associated with planned slope stabilization and other planned remedial work. These planned activities are detailed in the Westrek and Cordilleran reports.

No new riparian encroachment will take place within the application area. The existing fill slope above the gate in close proximity to Battani Creek will be disturbed while stabilization of the roadway fill slopes is completed. This work will be carried out under the guidance and supervision of a qualified environmental monitor and the project engineer.

Any use of pesticides or herbicides within the application area will be carried out in accordance with applicable Provincial and Federal regulations. No use is anticipated.

No new significant visual impacts are anticipated based on the negligible amount of additional clearing required under this plan. Given the local topography and the average tree height, the existing alterations on the application area are well screened and barely evident from any view point along highway 99 or from Howe Sound.

No archeological assessments have been completed as part of this application.

Any earthworks required under this plan will be conducted with tracked excavators, wheeled rock trucks and track mounted drilling equipment. Spoil sites needed for any excess excavations will be located on the applicant's private land.

No geometric road design information is provided in this application for the existing roadways under application as no new roads are planned. Design criteria for any planned modifications will be provided by Westrek when they have prepared detailed designs.

**b. Atmospheric Impacts**

Any atmospheric impacts will be related to the planned construction activities and the associated use of heavy equipment. These impacts will include short term increases in machine noise, traffic volumes and normal vehicle emissions from the equipment used.

Any slash burning will be carried out in accordance with applicable regulations and under suitable atmospheric venting conditions.

c. Water or Land Impacts

Natural drainage patterns within the application area have been assessed and addressed in the Cordilleran and Cascade reports. The Cascade report also describes the changes in and about these streams that have occurred within the application area.

Concerns have been raised by the Crown regarding the long term stability of the water diversion structure associated with C094497. An assessment will be carried out by a qualified professional with appropriate experience to determine how this structure can be safely maintained over the long term. Any modifications needed to ensure the long term stability will be implemented with the objective of permanent use of this facility by the applicant.

Any alteration to the water intake structure will likely have a short term effect on water quality so coordination of all downstream water users with this work is imperative. Notification of these water users will be carried out well in advance of any work at this location. Provision of a short term supplemental water supply to the downstream users will be considered.

d. Fish and Wildlife

The Cascade report provides a detailed assessment of the current fish status of the four water courses affected by the area under application. None of them are identified as fish streams. As part of the recommendations identified in both the Cordilleran and Cascade reports additional disturbance to stream 1 will be required to ensure water flow is re-established in a defined channel and contained within the Battani Creek watershed. No other disturbance of these water courses is planned.

There will be no disturbance to any marine environments.

The application area does not fall within any designated Wildlife or Old Growth Management Area or Wildlife Habitat Areas. Cascade assessed for but did not find any threatened or endangered species, including Pacific tailed frogs, associated with the water courses they assessed.

VI. Socio-Community

a. Land Use

There are no known public recreation areas/destinations within the application area but the area is used by a limited number of hikers who transit through to access unknown destinations beyond.



The application area falls within the jurisdiction of the Greater Vancouver Regional District and certain parts of it fall within the Village of Lions Bay. The lead agency in the jurisdiction of this land is the MFLNRO Sea to Sky Natural Resource District. It is covered by the MFLNRO Sea to Sky Land and Resource Management Plan however; there are no specific designations in this plan applicable to the application area.

b. Socio-Community Conditions

The roadways under application will provide access to Crown land beyond the applicant's private holdings for firefighting crews and BC Hydro workers accessing the various transmission lines.

The following reports are included as background/supporting information pertinent to this application and are submitted as attached:

1. Cordilleran Geoscience (Cordilleran)/Pierre A. Frielle, MSc, PGeo - dated September 29, 2015 and updated February 7, 2015. A report providing an assessment of the geotechnical hazards associated with the existing roads and water diversion structure.
2. Cordilleran Geoscience (Cordilleran)/Pierre A. Frielle, MSc, PGeo - dated September 9, 2015. A report providing an opinion on the stability of a slope associated with the applicant's water intake diversion structure.
3. Cordilleran Geoscience (Cordilleran)/Pierre A. Frielle, MSc, PGeo – November 9, 2014 hill slope drainage plan map.
4. Cascade Environmental Resource Group Ltd. (CERG)/Mike Nelson, RPBio dated July 27, 2015 "Restoration Plan for DL 2935 Battani Creek Lions Bay, BC". A report on the impacts to various water courses from works in and about streams related to road construction, associated vegetation and tree clearing and the installation of the water diversion structure. This report also provides mitigation/compensation measures for these impacts.
5. Westrek Geotechnical Technical Services/Tim Smith, P. Geo, Eng. L. – dated July 24, 2015 "Geotechnical Field Review of Four Sites Along the Access Road to Water License Intake on Battani Creek Lions Bay British Columbia"
6. Land Title Certificates (blocks 2 and 3 - DL 2935)

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7. Two Land Title Documents (road easements covering three separate areas)
  - BV234567
  - BV234576
8. Conditional Water Licence 64497/ Occupation Permit No. 1596.