

# **M** Creek Hazard Report – Section 219 Covenant **aster Requirement SPE 107**



## **Purpose**

The *Creek Hazard Report* assesses the impact of creek hazards on a proposed development and outlines such conditions as may be required to ensure that the proposed development is safe for the use intended.

## **Background**

Development may be adversely affected by creek hazards by a number of mechanisms including flooding, debris floods, debris flows, erosion and accretion. Development and properties not directly adjacent to a creek may be at risk as flooding, debris floods and debris flows represent a hazard to a wide area.

In 1999 the District of North Vancouver published "*Overview Report on Debris Flow Hazards*". The report identified potential debris flow hazard ratings for creeks within the District. The report is a public document and is available for review at the Parks and Engineering Division and the Planning Building & Environment Division counters at the Municipal Hall. The report is also available through North Vancouver public libraries.

**In order to avoid unnecessary delays, complications or expense applicants are advised to ask a Plan Checker early in the design stages if a Creek Hazard Report will be necessary.** A *Pre-Application Request for Service* may be required to confirm the requirement for a *Creek Hazard Report*. A *Creek Hazard Report* will be required if:

- the development is located within a creek fan as designated in the "*Overview Report on Debris Flow Hazards*".
- the development is located below the top of bank of a creek designated in the "*Overview Report on Debris Flow Hazards*" as medium or higher risk.
- pursuant to s. 56 of the Community Charter the Building Inspector considers that construction would be on land that is subject to flooding, mud flows, debris flows, debris torrents, erosion, land or slip rock falls.

A building permit application will be accepted on the condition that:

- 1) the *Creek Hazard Report* has been submitted by a specialist professional engineer and such engineer certifies, subject to conditions contained within the report, that the land may be used safely for the use intended,

- 2) The *Creek Hazard Report* MUST provide a response to all headings identified in the *Creek Hazard Report - Terms of Reference* identified below. Incomplete reports will not be found acceptable and will result in delays,
- 3) the Building Inspector has reviewed and accepted the report,
- 4) the owner of the land covenants with the District to:
  - a) use the land only in the manner determined and certified by the engineer as enabling the safe use of the land for the use intended,
  - b) the covenant contains conditions respecting reimbursement by the covenantor for any expenses that may be incurred by the covenantee as a result of a breach of the covenant,
  - c) the covenant be registered under section 219 of the Land Title Act.

Prior to construction work within 30 metres of the top of bank an applicant will require District of North Vancouver Environmental approval with respect to the removal and importation of soil, tree cutting and proximity to sensitive aquatic areas.

## Requirements

### Content: Creek Hazard Report - Terms of Reference

- Credentials:** *Creek Hazard Reports* are to be performed by a specialist professional engineer or professional geoscientist with experience or training in river engineering, hydrology, and in some cases, debris flow processes
- Statutes:** Section 56 of the Community Charter is applicable where the study is undertaken for the purpose of addressing creek hazard issues for a Building Permit.
- Background Information:** Creek studies shall include a review of available background information. The District's *Overview Report on Debris Flow Hazards* (Kerr Wood Leidal Associates and EBA Engineering Consultants, April 1999) provides a preliminary assessment of debris flood and debris flow hazards on most creeks in the District and should be a starting point for background review. Hydrologic reports are also available for many of the creeks.
- Property Description:** Creek reports shall include both legal and street addresses of the subject property, and also a plan showing the location of the property relative to the pertinent creek system. Any existing restrictive covenants relative to land use or natural hazards shall be identified and attached to the report.

- ❑ **Creek Hazards:** Creek reports shall provide a clear assessment of hazards associated with floods, debris floods, debris flows, erosion, landslip, rockfalls and accretion. The design magnitude of each of these processes will be assessed to a level of accuracy appropriate for the project.
- ❑ **Design Criteria for Floods:** For floods, the design flow shall be the 200-year return period peak instantaneous flow. New culverts should be capable of passing this flow with no surcharging. New bridges should be capable of passing this flow with a minimum of 1 metre of freeboard.
- ❑ **Design Criteria for Debris Floods:** Debris flood magnitudes is to be estimated to at least the 200-year return period level.
- ❑ **Design Criteria for Debris Flows:** Debris flow magnitude is to be estimated to at least the 500-year return period level.
- ❑ **Safe Certification:** A clear certification, subject to conditions contained in the report, that the land may be used safely for the use intended. The conditions shall be with respect to the siting, structural design and maintenance of buildings, structures and works, the maintenance of planting or vegetation, the placement of landfill and other such conditions respecting the safe use of the land, buildings, structures or works.

Any assumptions regarding future watershed conditions as they relate to the hazard assessments are to be clearly stated.

- ❑ **Building Setbacks:** Proposed building setbacks shall be clearly defined. In most cases, it would be appropriate to consult with the Environmental Protection Department in determining setbacks.
- ❑ **Flood Construction Levels:** Proposed FCL's for proposed building sites shall be clearly defined, preferably in Geodetic Survey of Canada datum. In general, FCL's will be base don the 200-year return period flood criteria, plus a minimum of 0.6m freeboard allowance, plus a reasonable allowance for sedimentation (in view of the debris flood assessment). Behind dykes or other flood protection works, determination of appropriate FCL's will be site-specific.
- ❑ **Proposed Mitigative Works:** Proposed mitigative works are to be permanent, and shall be designed to a conceptual level for the purpose of report submission. If the proposed works will result in transfer of risk to a third party, this will be clearly noted. The location and land ownership for proposed works is also to be noted. Following acceptance of the report, the requirements for design and construction of the works will be defined.
- ❑ **Environmental Approvals:** Where environmental approvals are required for construction of mitigative works, it may be necessary to obtain such approvals prior to acceptance of the report.

- ❑ **Maintenance Requirements:** Creek reports shall fully outline short and long term maintenance requirements of the creek channel and any works construction. For creek channels, this shall address ongoing bedload and debris deposition. For creek works, this shall include both regular maintenance and any special maintenance requirements following an extreme event.
- ❑ **Report Submission:** *Creek Hazard Reports* shall be sealed by the engineer of record. Where required, engineering reports will be included within a restrictive covenant registered against the land title.
- ❑ **Peer Review:** The District regularly obtains a peer review of creek reports by independent engineering consultants. Any concerns resulting from a peer review will be directed to the engineer of record for consideration. Creek reports will not be accepted until concerns arising from a peer review are satisfactorily resolved.

### **Section 219 Covenant**

Per sample attached

**Timing:** The *Creek Hazard Report* must be found acceptable by the Building Inspector prior to a permit application being accepted. The *Section 219 Covenant* must be registered on title prior to permit issuance.

**Owner:** Retain appropriate professional(s) to prepare *Creek Hazard Report*. Registered Section 219 Covenant on land title.

### **Related Requirements/Documents/Forms**

*MASTER Requirement 2000-18: Flood Hazard Report*

### **Contacts**

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