



## Watercourse Protection Development Permit Checklist Low Impact Development Guidelines

This is an expanded document based on Schedule F of the Procedural Bylaw No. 5879-1999 with additional information added for clarity on the required low impact development guidelines.

A Watercourse Protection Development Permit (WPDP) is required for all development activity and building permits within 50 metres of the top of bank from watercourses and wetlands.

A WPDP application will require applicants to submit the information listed below before any final permits or approvals are provided by the District. Some of these information requirements may already have been prepared and submitted to the District as part of the development application:

### Mandatory Information

- A completed application form with the prescribed fee;
  - A Certificate of Title and a Consent Form (if the applicant is different from the owner shown on the certificate of title) plus copies of any restrictive covenant documents registered against title;
  - A Site Profile;
1. **Site Survey.** A survey that has been prepared by a BC Land Surveyor using DFO Stream Protection Regulation Guidelines and illustrating the location of the following:
    - i) Top of bank or top of ravine bank delineation for all watercourses and the setback lines based on the District’s Streamside Setback Map and site specific findings;
    - ii) The boundary of the Watercourse Development Permit Area (50 metres from top of bank);
    - iii) All slopes > 25% within 50 metres of the top of bank;
    - iv) Existing topographic contours with 1 metre intervals and existing drainage patterns;
    - v) Any hydrological features including watercourses, drainage channels, wetlands, ponds, wells, and the boundaries of active floodplain areas found on the site.
  2. Plan showing existing and proposed building structures, roads, storm water detention facilities, septic facilities, infiltration areas, drainage flows, and discharge points located within the watercourse protection development permit area.
  3. Written input from the environmental consultant as to whether Approvals or Notifications are required from MOE or Authorizations or referrals are required from DFO. The District will need a copy of the submissions to the appropriate federal or provincial agencies. Applicants are encouraged to contact the senior agencies early on in the process if they have any concerns or questions for the agencies.
  4. An Environmental Assessment of existing site conditions is required up front to help determine developable area along with the condition of the area, potential constraints, and opportunities. The detail required will depend on the site history and size of development proposed. It must be prepared by a qualified environmental professional.

## Environmental Assessment

An Environmental Assessment will most often include a report with a bio-physical inventory and plan(s) showing the location of the following:

- a. Clearly identify top of bank or ravine, high water marks, hydrological features, SPR setbacks and any proposed encroachment into setback areas with dimensions, the justification for the encroachment, and proposed compensation with a clear Net Environmental Benefit;
  - b. A description of the type, size, and condition of vegetation on site. Healthy trees and shrubs are considered to be a significant resource by the District to be retained where possible and incorporated into the site design. The vegetation survey must include a Vegetation Retention Plan prepared by a qualified professional that addresses the following:
    - For sites that are larger than one (1) hectare, a Plan showing the location of significant tree stands and shrubs on site that are being proposed for retention or removal outside the setback areas and within the WPDP area. Significant tree stands include unique mature tree stands (Sitka Spruce, Big Leaf Maple, Cedar, Old Growth) or stands where the average tree diameters are greater than 25cm (dbh).
    - For sites less than one (1) hectare in size, a Plan that identifies significant individual trees over 25cm (dbh) to be retained or removed that are located outside of the setback area but within the WPDP 50 metre zone, is required.
    - For all sites, a plan that illustrates where significant trees, tree stands, or shrubs to be retained or removed are located relative to proposed building lots, structures, infrastructure, or roads.
  - c. Enhancement or restoration recommendations and plans within watercourses and setback areas including sparsely vegetated or disturbed areas, or areas with abundance of invasive vegetative species is required. A cost estimate for the works must be included;
  - d. Protection or mitigation measures for conserving significant wildlife features found on the site such as raptor nests, wildlife trees, heron rookeries, flora or fauna at risk, high probability SARA habitat, potential wildlife corridors that provide important links to neighbouring habitat reservoir areas, is required where applicable;
  - e. Phasing and timing recommendations for development works to minimize potential negative impacts is required. This includes recommendations for retention of vegetation and trees where possible, protection mitigation for sensitive features during construction, working outside peak rainy periods, and mitigation of impacts during critical bird nesting periods.
  - f. Fencing is required for protected or non -disturbance areas and features with a continuous temporary barrier not less than 1.5 metres in height to be replaced by permanent fencing that has been approved by the District.
  - g. Evaluate potential hazards identified on site such as floodplains, erosion, or wildfire interface area concerns that might require further study
5. An Arborist report and plan must be carried out and submitted to the District for approval once the developable portions of the site have been established to ensure adequate protection and management of significant trees or stands on site where possible. The arborist report and environmental consultant must prepare mitigation recommendations that include:
- (i) short term and long term measures for the protection of significant tree stands and individual trees identified in protected areas or within the WPDP 50 metre zone including protection of root zones/drip lines and mitigation for blow down or windfall concerns.
  - (ii) mitigation or removal of potential hazard trees located within adjacent or proposed park lands that are within striking distance of the proposed building envelopes; and

(iii) on-site replanting measures for sparsely vegetated areas or where trees or native vegetation is to be removed or potentially impacted by the potential development. Trees shall be replanted at a ratio of 2 new trees for every tree > 25cm (DBH) removed within the WPDP zone and minimum tree size shall be 5 gallon. Larger sizes may be required when site conditions warrant.

6. An Environmental Impact Assessment (EIA) may be required for the Development Permit Area prepared by Qualified Environmental Professional(s). This requirement will depend on the complexity of the site, the size of the proposed development, and/or the proximity of the site to protected or environmental sensitivity areas.

An EIA will automatically require information outlined previously in Section Four of the “Environmental Assessment”. An EIA is intended to address potential impacts and mitigation once the developable area has been established. An EIA will require that the following information is prepared and submitted to the District as outlined below:

#### **Environmental Impact Assessment**

An environmental impact assessment for the proposed development will include an evaluation  of the following items that are to be prepared by a qualified environmental professional:

- a. The District may require a peer review of studies carried out on site where there are significant concerns related to health and safety of persons, property, or potential significant impacts to sensitive environmental areas including potential wind fall impacts, potential wildfire interface areas, geotechnical concerns or hydrological/hydraulic issues.
- b. Additional detailed studies and qualified professionals may be required to work together to determine how and where appropriate site design, mitigation, landscaping, or restoration is required to enhance and protect significant landscapes;

7. A co-ordinated approach amongst the qualified professional is required by the District on developments with specific issues concerning geotechnical hazards, hydro geological issues, stormwater / rainwater management plans, landscaping, or trail connectivity at all times.

#### **8. Conceptual Stormwater Management Plans.**

A conceptual stormwater management plan must be submitted with the proposed site plans  which fulfills the requirements of the current Watercourse Protection Bylaw which should include the following information:

- a. Identify potential stormwater related issues such as:
  - significant natural resources to be protected such as watercourses, ponds, aquifers, or wetlands;
  - any new development plans in the neighbourhood that require integration of resources for dealing with water volumes, velocities, and quality; and
  - potential drainage problems on site and off site including groundwater management concerns.
- b. Evaluate the opportunities for implementing stormwater source controls to achieve the following:
  - Incorporate current federal, provincial, and regional stormwater / rainwater site source control regulations and standards using site source controls where possible as required in the Watercourse Protection Bylaw 6410-2006.
  - Ensure appropriate design of stormwater management detention facilities to mimic natural features, using safe and aesthetically pleasing designs with appropriate landscaping.
  - Ensure that stormwater management facilities do not encroach into park or conservation areas.
  - Within the WPDP zone, hard surfacing such as driveways and parking areas must be limited in order to meet the District’s objectives with respect to meeting DFO standards for water

quality and pre-development hydrological regimes. Limit the total impervious area for the site where possible meeting the 10% runoff volume target.

9. For large scale or multi phase developments, Pre and Post Development Monitoring of water volumes and water quality may have to be prepared by the engineer of record to help determine the adequacy of the existing and/or proposed stormwater facilities.
10. A **Restoration and Maintenance Agreement** along with a security deposit for estimated works where restoration or enhancement is required including maintenance periods for consultants. Replanting plans shall be carried out in accordance with current District of Maple Ridge Landscape Management and Maintenance standards.
11. A copy of the attached WPDP Schedule "A" (Attached) from the WPDP must be signed by the developer/landowner and the environmental consultant and submitted to the District's Planning Department.
12. A copy of the Watercourse Protection Bylaw erosion and sediment control plan along with the appropriate schedules must be submitted and signed by the Engineer of record along with the qualified environmental professional that will be monitoring the site.

**A pre-application meeting with Environment and Planning staff prior to submission of an application is strongly recommended. Please see attached Low Impact Development Guidelines.**



Deep Roots  
Greater Heights

### SCHEDULE "A" ENVIRONMENTAL RESPONSIBILITIES

TO: District of Maple Ridge

DATE: \_\_\_\_\_

ATTENTION: Development Permit Application No. \_\_\_\_\_

We/I \_\_\_\_\_ confirm that we/I have been retained  
(Environmental Monitor's name)  
by \_\_\_\_\_ for the District Project No. \_\_\_\_\_  
(Developer's name printed)

to provide inspection, assessment, and reporting services in accordance with the requirements of the Watercourse Protection Development Permit. This includes the requirement to ensure compliance with the following:

- 1) Prior to any clearing and/or disturbance of the site, it must be inspected by the environmental monitor to ensure all necessary protective controls and mitigation measures are installed/constructed properly and in accordance with municipal requirements and the approved environmental Development Permit.
- 2) Regular inspections are required to ensure compliance with the approved WPDP. A final inspection and written letter of confirmation by the environmental monitor is required that provides assurance all environmental requirements and cleanup of the site and conservation areas have been adequately addressed and completed.
- 2) Development and monitoring must incorporate the WPDP low impact development guidelines found in the attached form which are an attachment of Schedule A. The environmental professionals of record for the site are responsible for overseeing the implementation of these practices, reporting on a regular basis to the District, and for sharing the responsibilities with the supervisor or foreman of the construction works.
- 3) To prevent damage or destruction to protected areas and natural features, it is the responsibility of the developer and the qualified environmental professional (QEP) to ensure protective temporary fencing and markers have been placed around protected areas, natural features, or infiltration areas to ensure these areas are protected and are not damaged during the development process. The developer is responsible for restoring or compensating for any damages or disturbance occurring within District of Maple Ridge lands or to their property.
- 4) The qualified environmental professional/monitor must have unconditional authority from Developer to modify and/or halt any construction activity necessary to ensure compliance with municipal environmental regulations.

**Environmental Monitor:**

Signature: \_\_\_\_\_ Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Emergency Contact Phone Number \_\_\_\_\_

**Owner/Developer:** In executing this Letter of Appointment I covenant that I have authority to and do hereby unconditionally authorize the named qualified environmental professional to modify or halt any construction activity as necessary to ensure compliance with Watercourse Protection Development Permit and the Maple Ridge Watercourse Protection Bylaw 6410-2006.

Signature: \_\_\_\_\_ Print Name: \_\_\_\_\_

## **Low Impact Development Requirements**

The District of Maple Ridge Watercourse Protection Bylaw requires the use of the following best management practices:

**A qualified environmental monitor** should be available to approve mitigation, prepare the site, and oversee development activity before any clearing begins.

The QEP is required to contact municipal environmental staff directly within 24 hours of any incident that constitutes an infraction and that has not been remedied. They are responsible for overseeing and reporting to staff during:

- Clearing and grubbing;
- Servicing works;
- Construction of buildings.

**Timing of development activity and inventories during suitable periods.**

Encourage land disturbance activity between July and September. Bio-physical inventories or assessments need to be carried out at an appropriate time of year.

**Leave existing vegetation in place during the planning and approvals**

**stages.** Pre-clearing vegetation results in increased costs for temporary re-vegetation and erosion control, at the same time it increases runoff and sedimentation unnecessarily.

**Clear the site in stages as development proceeds.** For instance, for larger developments, clear only road and utility corridors during initial phases of development, leaving the building envelopes vegetated for as long as possible.

**Protect areas and vegetation that can permanently remain in the development or building area.** These vegetated areas may be steep slopes, riparian or wetland areas, wildlife trees, significant greenway corridors, groves of mature trees, or individual significant trees that require protective fencing.

**Protect tree root zones and infiltration areas during construction.** It is critical to the performance of stormwater management that designated areas of infiltration not be disturbed or tree root zones are not compacted by equipment or storage during construction. Temporary protective fencing should be used to protect these areas and areas where vegetation is to be retained.

**Slopes and soils must be stabilized and re-planting is required for all bare or sparsely vegetated areas within a watercourse protection setback area or exposed slopes within a natural features development permit area.** The slope stabilization and re-vegetation plan must be prepared by a qualified environmental consultant. Soil stabilization and re-planting is also immediately required for the following:

- Interim periods where development is not active for longer than 30 days;
- Where construction activity has destroyed vegetation on slopes > 15%;
- Encroachment into conservation areas or watercourse setback areas.

**Coordination of professional consultants and their recommendations.** This includes coordination of assessments and recommendations from the following:

- Environmental consultants and professional engineers;
- Developers, architects, and landscape architects;
- Specialized professionals that are required i.e. geotechnical professionals, hydrologists, arborists, etc.