



Watercourse Protection Development Permit Checklist Low Impact Development Guidelines

This is an expanded document based on Schedule F of the Development Procedures Bylaw 5879-1999

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.

A Watercourse Protection Development Permit (WPDP) is required for all development 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

Applicants must complete their WPDP application and provide the file manager along with the environmental section with the following for the application to be complete:

- A WPDP checklist signed by the environmental consultant with the list of information provided to the District as required by the Environmental Section;
- A preliminary letter of inspection/assurance from the designated environmental monitor **before any clearing, grading, or construction activity begins on site** as per requirements of the Watercourse Protection Bylaw. See attached Preliminary Letter of Inspection.
- A final letter of inspection and approval from the environmental consultant to the District is required in order to get the security deposit back. See attached Final Inspection Letter.

1. Site Survey.

A survey that has been prepared by a BC Land Surveyor using DFO Stream Protection Regulation Guidelines, illustrating the location of the following:

- i) Top of bank or top of ravine bank delineation for all watercourses and the setback lines approved by District and DFO using SPR guidelines (to be flagged on the ground);
 - ii) The boundary of the Watercourse Development Permit Area (50 metres from top of bank);
 - iii) All slopes greater than 15% on site, especially rock bluffs or slopes greater than 25% on site; Slopes are defined by the District as **any** reach on site where there is a rise of 25-feet or 8 metres, and the average slope is 15% or greater using 1 metre contour intervals
 - iv) Existing topographic contours with 1 metre intervals and existing drainage patterns;
 - v) Any hydrological features including watercourses, ditches, wetlands, ponds, wells, springs, and the boundaries of active floodplain areas found on the site. (flagged on ground)
2. Plan showing existing and proposed building structures, roads, storm water detention facilities, septic facilities, infiltration areas, drainage channels and flows, outfalls and discharge points located on site.

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 such as streams, ditches, wetlands, or ponds; SPR setbacks; and for any proposed encroachment into setback areas with dimensions, the justification for the encroachment, mitigation 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 and 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 is required.
 - For all sites, a plan that illustrates where significant trees, tree stands, or trees > 25cm dbh are to be retained or removed, are located relative to proposed building lots, structures, infrastructure, or roads. Hazard trees within striking distance of proposed structures, public spaces, or trail corridors will also need to be identified and appropriate mitigation proposed.
- 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 along with a bond for the estimated works and for the maintenance period;
- 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. Identify and provide mitigation for potential hazards identified on site such as floodplains, erosion, windfall, or wildfire interface area concerns that might impact proposed structures.

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 > 10cm (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 before final re-zoning or subdivision 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 all issues concerning hazards including hydro geological issues, stormwater / rainwater management plans, enhancement & restoration, 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 issues on site and off site including groundwater management concerns that may be impacted by the proposed works.

 - 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 A, B, D, and E must be submitted and signed by the Engineer of record along with the qualified environmental professional that will be monitoring the site.

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 WPDP protective controls and mitigation measures are installed/constructed properly along with ESC requirements and approved environmental Development Permit. A preliminary letter of inspection and approval is required from the qualified environmental professional (QEP) to be submitted to the District that provides their assurances the site is prepared accordingly.
- 2) Regular inspections by the QEP of record are required to ensure compliance with the approved WPDP conditions. A preliminary and final inspection and written letters of approval by the environmental monitor is also required that provides assurance all environmental requirements including stabilization and cleanup of the site including adjacent conservation areas have been adequately addressed and completed. See attached letters of inspection and assurance
- 3) The WPDP low impact development guidelines are part of the Procedural Bylaw and OCP WPDP guidelines. The environmental professionals of record for the site are responsible for coordinating with other professionals of record in the site design along with supervising construction activities to ensure compliance with WPDP objectives. They are also responsible for reporting any ongoing infractions to the District, and for sharing the requirements of the WPDP with the supervisor / foreman of the construction related works.
- 4) 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 operators are aware of issues and 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.
- 5) 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: _____

Preliminary Letter of Inspection and Approval For WPDP Works

Submit this Letter To: The District of Maple Ridge

Environmental Monitor of Record: _____
(insert name and company of QEP monitor)

RE: **Inspection For Development or Building Premises located at**

address)

In accordance with Section 7 of the Watercourse Protection Bylaw and Schedule "A" of the WPDP, a letter of assurance from the Qualified Environmental Professional is required to be submitted to the District's file manager and to the District's Environmental Section before any clearing or disturbance takes place as part of the WPDP or NFDP application and in accordance with the Watercourse Protection Bylaw.

This letter of assurance will provide confirmation that the following protection and mitigation measures are in place and operational:

- Temporary protective fencing around trees and setback boundaries on site including root protective zones, covenant or park boundaries, infiltration areas, and geotechnical setback lines is required by the qualified professional of record;
- Accurate and clearly marked boundaries identifying municipal approved watercourse setback areas back from BCLS identified top of bank / ravine bank, conservation covenant boundaries, geotechnical covenant boundaries or setback lines must also be accurately marked off on the ground and securely set in place on site before clearing or construction activity begins.
- Erosion and Sediment controls are in place in accordance with ESC plans approved by the District and they must be operational;
- Phasing of clearing and construction practices that takes into consideration erosion and sediment control issues, peak rain fall periods, bird nesting season, geotechnical vulnerable areas, recreational users, and fisheries windows.

Environmental Consultant of Record

The undersigned professional may be contacted at: _____
(insert business telephone number or best contact number).

CERTIFIED AS OF _____(date)

(Print name of environmental monitor and company)

Authorized Environmental Monitor Signature

Low Impact Development Standards

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

- **A qualified environmental monitor QEP** 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. Studies, assessments, or construction should be carried out at an appropriate time of year taking into consideration bird nesting periods, fisheries windows, etc.
- **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 protected areas include steep slopes, riparian or wetland areas, park areas, trails, root zones, groves of mature trees, or protected covenant areas that require protective fencing.
- **Identify and protect infiltration and enhancement areas.** Designated rainwater management areas that require infiltration or designated enhancement areas must not be compacted by equipment, construction activity, or storage of materials 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 in accordance with municipal landscaping and re-planting standards. Soil stabilization and re-planting is 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 parks, conservation or protected areas, or around greenway corridors.

- **Coordination of professional consultants and their recommendations.** This includes coordination of assessments and recommendations from the following:
 - Developers, environmental consultants and professionals of record
 - Specialized professionals or sub-contractors that are required