



Municipal Enhancement & Landscaping Standards

An Enhancement and Restoration agreement is required as part of the environmental development permit. The landscape design and planting plan which is part of the agreement must also be prepared and implemented by a qualified landscape or environmental professional. A cost estimate for the planting, restoration, and maintenance period is also required by the professional.

The native vegetation species selected for this area must be conducive to the local environment, and will help maintain stability of the soil substrate and increase the diversity of the area. The re-vegetation compensation scheme will comply with the following requirements:

An Enhancement and Restoration Agreement will be required by the District which will be attached to a permit and registered on title. The plan must comply with the following standards:

- All plant materials, site treatments, soils, labour, and plant installation shall be conducted in accordance with current BC Landscape Nursery Association standards and reference resources outlined below.
- Enhancement and Restoration agreements shall include an eradication program for removal of invasive vegetative species and replacement with native vegetative species where applicable.
- The contractor shall provide no less than three to five years of plant maintenance with the replanting plan depending on municipal requirements. An estimate of capital costs and maintenance costs must be submitted to the District by the landscape consultant. A security deposit for 100% of the cost estimate must be submitted to the District.
- The security deposit will be released in stages based on the following:
 - submission of final letter of inspection and approval from the consultant of record upon completion of the planting, restoration, and maintenance periods.
 - Approximately 20% of the total capital costs will be retained till the end of the maintenance period to ensure finances are available for the replacement of dead or damaged stock, in addition to the costs associated with maintenance fees.
- A qualified environmental professional must inspect, approve, and submit a final letter of completion for each of these phases to the District before return of the security deposit.
- Tree survivorship shall equal 100% of the agreed upon maintenance agreement from planting while shrub survivorship shall equal at least 80%.
- All debris and / or excess materials from landscape operations shall be collected and disposed of in accordance with all regulatory requirements.

Reference Resources

- *BC Landscape Standards* 6th edition. BC Landscape Nursery Association
- Native Plant Society of British Columbia <http://www.npsbc.org/index.htm>
- *Land Development Guidelines for the Protection of Aquatic Habitat* jointly published by the provincial Ministry of Environment, Lands & Parks and the Federal Department of Fisheries & Oceans.

Soil and Surface Treatments

- Appropriate types and volumes of topsoil will be selected and implemented to suit the natural conditions, constraints, and topography of the site.
- All plants should be installed into the native topsoil of the area whenever possible. This requirement includes all shrubs and trees to be planted throughout riparian or natural feature setback areas.
- No soils, clay, sand, gravel, concrete or any non-native material deleterious to aquatic life should ever be dumped, placed or stored within the setback area or be allowed to enter the adjacent channel.
- All planting works are to be carried out by hand where possible. No track machinery or long term compaction is allowed in the riparian area or designated infiltration areas.
- Organic soils, mature healthy trees, and native vegetation currently located on-site will be retained and protected whenever possible.
- All exposed soils within a site or setback areas must include appropriate surface treatments and will need to be at a minimum seeded and planted with a diversity of seed mix, shrubs, and trees conducive to that environment. Appropriate erosion and sediment controls should be used to ensure compliance with District bylaws.
- All excavated good quality top soil material will be relocated to a safe location on the same property where it will not impact any watercourse, drainage facility, or sensitive area. Where possible these top soils should be used again to ensure a healthy soil base and proper soil surface treatment.

Surface Treatment Requirements

Steep slopes greater than 15% or floodplain areas will require professional consultation.

1. **Grading.** Water must flow away from existing or potential footings and foundations. The slopes on site and surrounding the structure should be designed and graded so drainage flows are away from the house structure and must respect neighboring properties as well as other applicable bylaws. Scarification of compact soils or hard clays is important before soil treatment takes place and should take drainage into consideration.
2. **Drainage and Soil Texture.** For drainage purposes, a minimum of four to six inches of sandy to sandy loam soils should be placed on exposed, disturbed, or compacted areas to allow for adequate drainage, especially where existing soils on site are compacted and consist mostly of clays. This soil layer should be graded at relatively even depths throughout. On clay or compacted soils, the surface should be dry and tilled or scarified before the sand or sandy loam layer is placed on top.

3. **Topsoil.** If the native topsoil is no longer on the site, a minimum six to ten inches of appropriate organic matter (topsoil) should be placed above the sandy or sandy loam layer to support re-planting and slope stabilization. This should be completed for both back yards as well as front yard areas. Topsoil should be rolled lightly then seeded. Water is critical after seeding. For disturbed areas that require re-planting of trees or riparian areas that are to be enhanced and replanted, additional top soil may be required as recommended by the Environmental Professional of record for the site.
4. **Site stability.** For sites that require geotechnical or hydrological consultants, the professional engineers of record must be consulted by the landscaper or environmental professional to ensure surface treatments will not compromise the integrity of the site.

Diversity and Quality of Planting Plans

All materials, site treatments, labour and plant installation shall be conducted in accordance with the current BC Landscape Nursery Standards jointly produced by the BC Society of Landscape Architects and the BC Nursery Trades Association. A diversity of species, horizontal and vertical structure, sizes, and age is encouraged where possible.

The District of Maple Ridge has a guide to native and non-native species that are well suited for our biogeoclimatic zones, hydrology, and soil types that is available upon request. Professionals of record will be required to provide the District with the appropriate recommendations and prescriptions based on specific characteristics of the site and soil conditions. It is recommended that the environmental professionals utilize Naturescaping principles wherever possible and appropriate.

Riparian Areas: The appropriate mix of trees and shrubs that are recommended for riparian areas are found below in the Naturescape Guidelines as well as on the Department of Fisheries and Oceans website for riparian re-vegetation:

http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/pdfs/riparian_vegetation_e.pdf

Hillsides and Backyard Areas: Re-planting sites or residences outside riparian areas can refer to the Naturescape British Columbia site for the south coast area located at <http://www.hctf.ca/naturescape/principles.htm>

Naturescape guidelines applicable to District of Maple Ridge riparian areas:

- Riparian plantings should be based on 1 tree or shrub per 2 square metre density. Coniferous trees should comprise not less than 20% or more than 45% of the tree stock planted and all species must be of guaranteed nursery stock.
- The botanical name should be used when ordering stock to ensure the desired native species is being purchased. Each specimen should be tagged with the botanical name and the tag should be removed after planting and maintenance periods expire.
- Tree stock should be a minimum of 1.2 m in height when purchased and planted 1.5 to 2 m apart.
- Stock planted during the fall (September – October) and spring (March – April) has the greatest chance for survival. Watering may be required until the plants are established.
- A minimum of 25% trees and shrubs planted should be fruit-bearing species.

- Cultivate native plants from nursery propagated stock or wild native flora salvaged from an area slated for redevelopment.
- Choose plants whose needs are met closely by the conditions of the site (if possible, use original plants on the site as indicator species).
- Preserve existing native trees and plants, especially dominant plants. Plan for replacement of large, healthy specimen trees.
- Use natural means of fertilizing, weed and predator control instead of synthetic chemicals.

Tree Condition

- Trees shall be of balled and burlapped or container grown stock.
- The root system of new trees shall be strong, fibrous, free of disease, insects, defects, girdling, or injuries and shall be sufficiently developed to guarantee successful transplanting.
- For the replacement of individual trees, such as a danger or hazard tree, please refer to the British Columbia [Provincial Tree Replacement Criteria](#). For individual shrub or tree replacement, replacement ratios will depend on site characteristics and original stand density. Each site will require its own unique assessment of appropriate replanting ratios.
- Stock should be planted in the fall (September to October) or spring (March to April) depending on local conditions.
- All plant material shall be of good health and vigor with no visible signs of disease, insect pests, damage or other objectionable disfigurements. All trees are to be inspected by the Landscape/Planning Technician before planting.

Installation

- All installation shall comply with BCNTA/BCSLA landscape standards, latest edition.
- The planting works should be carried out and completed during the fall and/or the spring periods or whenever timing is most appropriate to guarantee long term survivability.
- Planting work is to be completed during normal planting seasons as dictated by weather conditions. Planting in frozen ground or with a frozen root ball is not acceptable.
- Planting will not be permitted during extremely hot, dry weather, or when rain has accumulated in the tree pit
- All necessary precautions shall be taken to protect the plant material from severe weather conditions during transportation and planting.
- Purchased plant stock should be a minimum of 2 years old, and if transplanting an entire area, planted no greater than 2.0 meters apart for all stock.
- Prior removal, cover, or replacement of invasive plant species (e.g. Himalayan blackberry, Japanese knotweed, Scotch broom, etc.) will be required where applicable to enhance the survival of transplants.
- Additional application of appropriate organic matter, dedicated watering and/or replanting may be required to establish vigorous vegetative cover throughout the first year of growth.

Plant Maintenance

The Developer is responsible for costs associated with hiring a qualified professional consultant to maintain all trees and shrubs in a healthy condition for a minimum three year period as possibly a five year period as determined by the District of Maple Ridge. The maintenance period shall begin upon final completion of all proposed planting works to be carried out by a professional.

Maintenance work shall include but not be limited to:

- Watering
- Weeding of invasive vegetative species
- Pruning where necessary
- Repair or replacement of vandalized trees or hazard trees within striking distance of structures
- Treatment to control stress or pests
- Removal of tree staking materials at the end of the warranty period

Replacements and Warranty

1. During the warranty period, the Developer/Land Owner shall replace all trees that die, are damaged or have failed to grow satisfactorily as determined by the Landscape Technician.
2. All replacements shall be with trees of the same species, variety, and size as the original planting plan.
3. The warranty on replacement trees shall extend for a period equal to the maintenance period approved by the District.