



TREE MANAGEMENT BYLAW NO. 4091, 2010

# City of Coquitlam Standards for Tree Cutting Permit Applicants

## Preface

This resource guide book is meant to supplement the Tree Management Bylaw No. 4091, 2010. The guide will assist residents and developers through the required steps to properly manage their trees in accordance with City of Coquitlam standards.

*For additional information, please contact the City Arborist at 604-927-3482 or by email at [urbanforestry@coquitlam.ca](mailto:urbanforestry@coquitlam.ca)*

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# I.S.A Tree Pruning

## Basic Pruning Guidelines

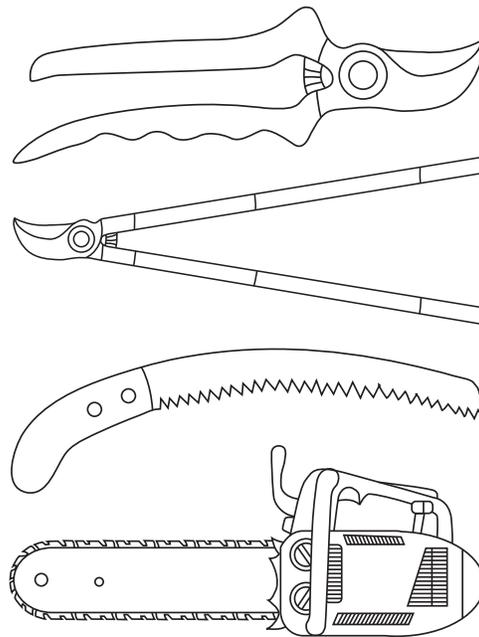
### Use the Correct Tools

Hand pruners are useful for small branches, up to about 1/2-inch diameter. Use loppers or a saw for larger branches or for species with hardwood.

Long-handled loppers may be used to remove larger-diameter branches, but precise cuts are more difficult to make.

Curved-blade pruning saws cut on the pull stroke. Newer blade designs are able to cut large and small diameter branches quickly and cleanly. Pruning saws are available with fixed or folding blades, or mounted on a pole. Larger pruning saws are sometimes used by professionals

Chainsaws are not recommended for general pruning except by professionals. (Consider hiring an arborist for large or potentially dangerous work.)



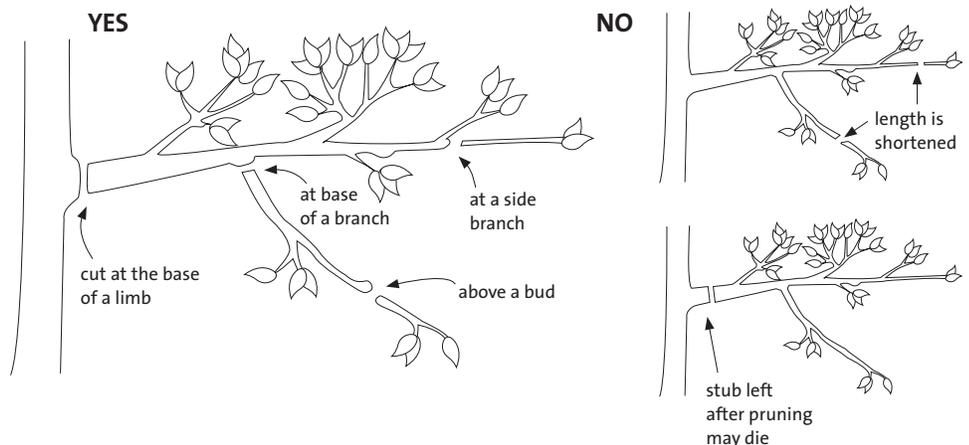
### Timing is Important

	J	F	M	A	M	J	J	A	S	O	N	D
Best Time	●	●										●
Worst Time				●	●							
Light Pruning	●	●	●			●	●	●	●	●	●	●

To minimize damage and synchronize with the natural growth cycle, prune in winter (January, February). Avoid heavy pruning as leaves are expanding in early spring (April, May), when tree energy reserves are low. Timing for light pruning is less critical. For maximum display of spring flowering species, prune after bloom (June or later). Prune dead limbs and branches at any time.

### Remove Whole Limbs or Branches

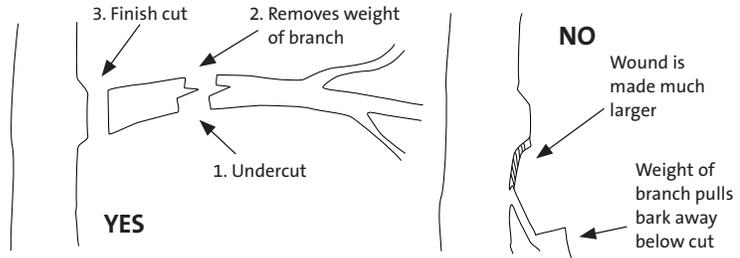
It is preferable to remove an entire limb or branch rather than shortening its length. Branches may be cut back to a twig, or twigs to a bud, where new growth will resume. This technique respects natural growth patterns.



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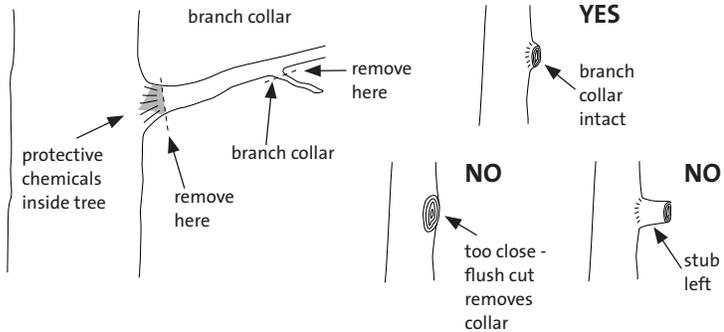
## Use the Three-Cut Method

Branches 1 inch in diameter or larger generally should be removed in a series of three cuts. This will prevent bark attached to the base of the cut branch from stripping away bark on the trunk as it falls.



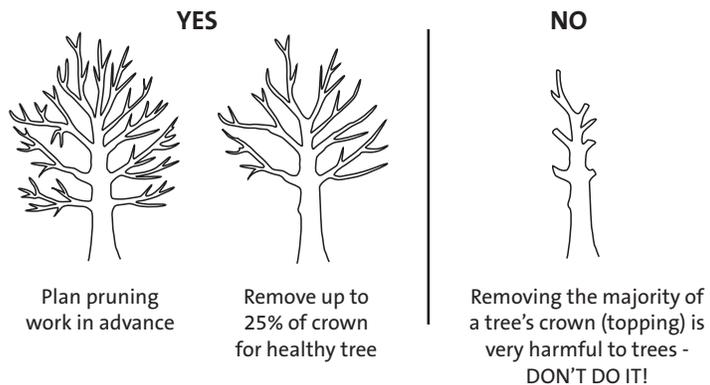
## Save Branch Collars

Trees produce natural chemicals to prevent decay from entering the tree at the base of each branch or limb. To preserve this chemical zone, leave the slight swelling, or branch collar, at the branch base. The resulting wound will be smaller than if the branch were cut flush. This rule applies to large limbs and small branches.



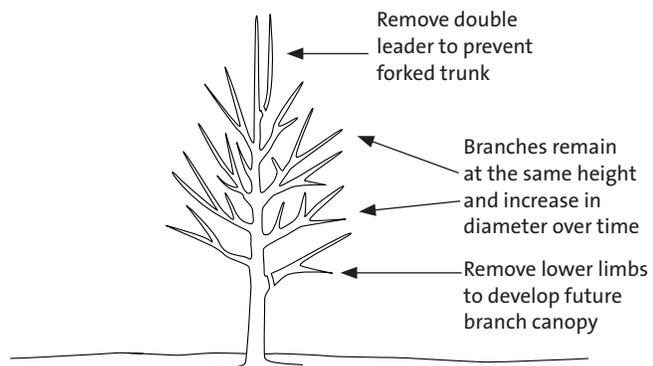
## Don't Overprune

It is best to remove only a small percentage of the live part of a tree at one time - a maximum of 25 percent in one year for healthy, vigorous trees. This will help maintain a balance between leaf area and other tree functions. Prune weak or declining trees less. Severe pruning may stimulate undesirable sprouting from the stem or roots. Avoid pruning more than 25 percent of the live crown annually of any tree two years in succession.



## Prune Now: Avoid Future Problems

Use simple hand-pruning tools when a tree is young to prevent future structural problems and the need to remove large limbs later in its life. It is especially important to remove forked tops (double leaders), and to gradually remove lower branches for shade-tree development. Prune out acute angle (tight V) crotches to prevent future structural problems. Contrary to what some people believe, a tree's branches always remain at the height at which they began. So prune problem branches when small, because they will not "grow up and out of your way."



# Replacement of Trees

Our community benefits when damaged or removed trees are replaced with new ones. Trees provide canopy cover, natural functions and other values to the community. Choosing the right tree to plant is important, and this guide will help you choose the one that will work best for the location and environment.

## Tree Replacement Requirements

Under Coquitlam's Tree Management Bylaw, in many instances trees being removed under a tree cutting permit must be replaced. Replacement trees may be selected from the plant lists provided in this guide. Large-growing species from the Class A list are preferred because they will provide a greater amount of value to the community than smaller trees. Class B and C feature smaller-growing species.

**The number of replacement trees required on your lot depends on your lot size and how many protected trees remain on the lot after your proposed tree removal. Use the table and examples on the facing page to determine your replacement tree requirements. The City Arborist can be contacted at 604-927-3482 to help you determine your lot size and replacement tree requirements.**

Residents who propose to replace trees with species that are not listed in this guide book, should provide a clear rationale for selecting the alternative species.

## Tree Species Selection for Natural Areas

In areas where there are many trees and natural area restoration is identified as a priority, the City Arborist may work with the owners or their consultant to develop an appropriate selection of native trees and shrubs to be planted, instead of the replacement tree standards described above.

## Planting and Maintenance Guidelines

- To ensure the survival of replanted trees, all replacement trees should be planted and maintained according to the illustration in Figure 1 (Page 6).
- Prospective planting sites should be protected from soil compaction, prior to and after planting.
- Where practical, replacement trees should be located at least 2.5 metres from any property line, tree, building, fence, roadway or other built element.
- All replacement trees planted on building sites undergoing construction or landscaping should be protected by well-constructed temporary fencing. Fencing should be off-set 1.5 metres from the stem of the tree or 0.5 metres from the edge of the canopy, whichever is greater. Fencing should be 1.2 metres in height (2 metres in areas where deer are often seen) and be constructed from two-by-four posts and rails (top and bottom) with plastic snow fencing panels.

## Securities for Replacement Tree Planting

As per Bylaw No. 4091, 2010, Part 4, section 11, a security deposit will be required for permits where replacement trees are required. Currently, the security is \$300 per replacement tree, based on the number of Class A trees.

## Inspections and Release of Security Deposit

On sites where replacement trees are to be planted, two inspections will be required by the City Arborist. Deposits will be released as follows:

Inspection 1: After planting (90% of security released if no deficiencies)

Inspection 2: One year after planting (residual 10% of original security released)

# Tree Replacement Requirements based on lot size and existing trees

Lot Size (m <sup>2</sup> )	Number of trees greater than 20cm stem diameter remaining on the lot after tree removal	Maximum number of required replacement trees
Less than 250m <sup>2</sup>	0	1 Class A or 1 Class B or 1 Class C
	1 or more	None
250m <sup>2</sup> - 500m <sup>2</sup>	0	2 Class A or 3 Class B or 4 Class C
	1 or more	None
501m <sup>2</sup> - 750m <sup>2</sup>	0	4 Class A or 6 Class B or 8 Class C
	1	2 Class A or 3 Class B or 4 Class C
	2 or more	None
751m <sup>2</sup> - 1000m <sup>2</sup>	0	6 Class A or 9 Class B or 12 Class C
	1	4 Class A or 6 Class B or 8 Class C
	2	2 Class A or 3 Class B or 4 Class C
	3 or more	None
1001m <sup>2</sup> - 1250m <sup>2</sup>	0	8 Class A or 12 Class B or 16 Class C
	1	6 Class A or 9 Class B or 12 Class C
	2	4 Class A or 6 Class B or 8 Class C
	3	2 Class A or 3 Class B or 4 Class C
	4 or more	None
Over 1250m <sup>2</sup>	1 tree every 250m <sup>2</sup>	None
	Less than 1 tree every 250m <sup>2</sup>	1 Class A every 125m <sup>2</sup> or 1 Class B every 85m <sup>2</sup> or 1 Class C every 65m <sup>2</sup>

Please contact the City Arborist at 604-927-3482 if you do not know your lot size.

**Example 1:** A single-family 700m<sup>2</sup> lot has twelve protected trees that are growing in a hedge formation along the property lines. The trees are in poor condition and the property owner wishes to remove all but one tree. Since each property owner is granted two exempted trees per year, the owner will require a permit to remove the remaining nine trees and will replant with either 2 Class A trees or 3 Class B trees or 4 Class C trees. A \$600 tree replacement security deposit is required, most of which (90%) is returned when the trees are planted.

**Example 2:** A 500m<sup>2</sup> lot has three protected trees on it and the property owner wishes to remove two of them. Since each property owner is granted two exempted trees per year, the owner will not require a permit to remove the trees and are not required to replant any trees.

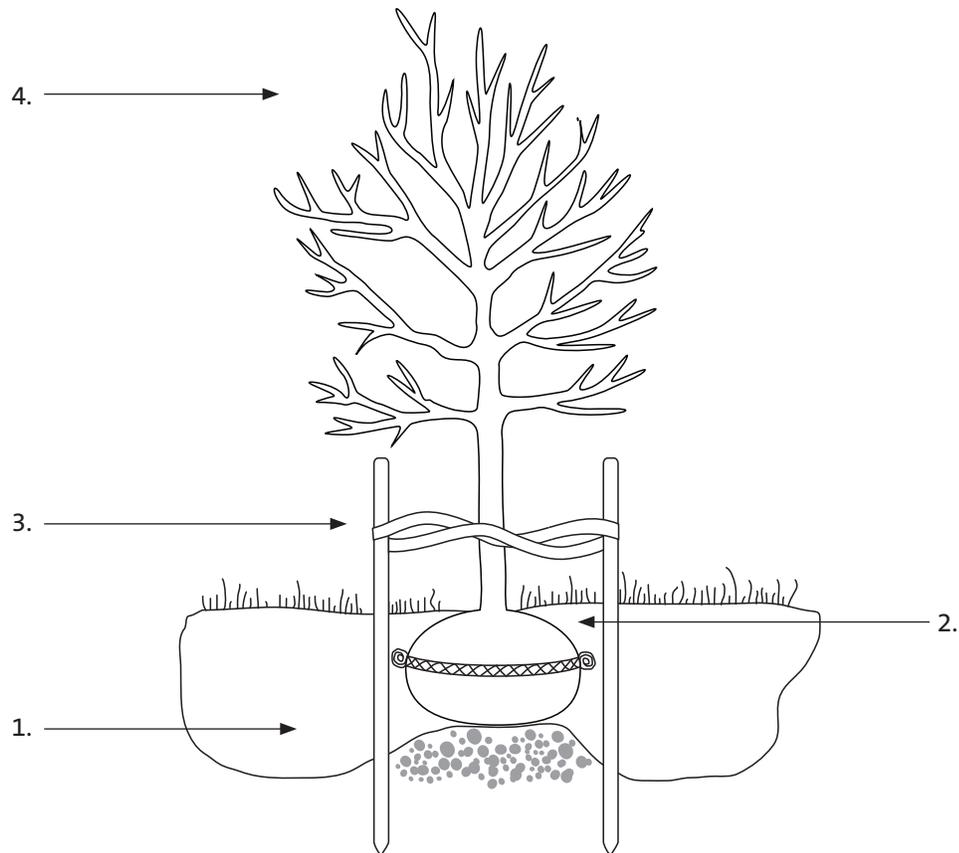
**Example 3:** A 500m<sup>2</sup> lot has four protected trees on it and the property owner wishes to remove three of them. Since each property owner is granted two exempted trees per year, the owner will require a permit to remove the one remaining tree, but is not required to replant any trees.

### Under the Bylaw “Protected Tree” means:

a living, erect, woody plant that is 20cm or more in diameter measured 1.4m from the base of the tree stem, or a tree planted as a replacement tree as a requirement of a Tree Cutting Permit or other development permit. There are also some other trees that are always protected, such as trees of any size growing on a slope and those growing in streamside protection and enhancement areas.”

# Tree Planting Guideline

Figure 1.



1. Make your planting site 3 – 5 times the size of the root ball. Place the rootball on firm ground. Peel back burlap half way down ball.
2. Set top of root ball at ground level.
  - Mound slightly around the outside of the filled site to contain water.
  - Top dress exposed soil with a few inches of chip mulch.
  - Water deeply twice a week during first two summers.
3. Bicycle inner tubes make great straps to hold the tree firm. Stake the tree one-third of the way up the stem.
4. Prune off dead, damaged, introverted or duplicating branches. Do not head back or remove the terminal leader from the tree.

# Replacement Tree Recommendations

## Class A tree list

Botanical Name	Common Name	Minimum caliper size
Large Deciduous species		
<i>Acer macrophyllum</i>	Bigleaf Maple	6 cm
<i>Acer platanoides</i>	Norway Maple	6 cm
<i>Acer pseudoplatanus</i>	Sycamore Maple	6 cm
<i>Acer saccharinum</i>	Silver Maple	6 cm
<i>Acer saccharum</i>	Sugar Maple	6 cm
<i>Aesculus hippocastanum</i>	Common Horsechestnut	6 cm
<i>Carya cordiformis</i>	Bitternut Hickory	6 cm
<i>Carya ovalis</i>	Red Hickory	6 cm
<i>Carya ovata</i>	Shagbark Hickory	6 cm
<i>Carpinus betulus</i>	European Hornbeam	6 cm
<i>Catalpa bignonioides</i>	Common Catalpa	6 cm
<i>Catalpa speciosa</i>	Northern Catalpa	6 cm
<i>Fagus crenata</i>	Japanese Beech	6 cm
<i>Fagus grandifolia</i>	American Beech	6 cm
<i>Fagus sylvatica</i>	European Beech	6 cm
<i>Fraxinus americana</i>	White Ash	6 cm
<i>Fraxinus excelsior</i>	European Ash	6 cm
<i>Fraxinus nigra</i>	Black Ash	6 cm
<i>Fraxinus ornus</i>	Flowering Ash	6 cm
<i>Fraxinus oxycarpa</i>	Claret Ash	6 cm
<i>Ginkgo biloba</i>	Ginkgo	6 cm
<i>Liquidambar styraciflua</i>	American Sweetgum	6 cm
<i>Liriodendron tulipifera</i>	Tulip Tree	6 cm
<i>Notofagus antartica</i>	Antartic Beech	6 cm
<i>Paulownia tomentosa</i>	Empress Tree	6 cm
<i>Platanus occidentalis</i>	American Sycamore	6 cm
<i>Platanus orientalis</i>	Oriental Plane Tree	6 cm
<i>Platanus x acerfolia</i>	London Plane Tree	6 cm
<i>Quercus coccinea</i>	Scarlet Oak	6 cm
<i>Quercus ellipsoidalis</i>	Northern Pin Oak	6 cm
<i>Quercus garryana</i>	Garry Oak	6 cm
<i>Quercus macrocarpa</i>	Bur Oak	6 cm
<i>Quercus palustris</i>	Pin Oak	6 cm
<i>Quercus rubra</i>	Red Oak	6 cm
<i>Quercus shumardii</i>	Shumard Oak	6 cm
<i>Robinia ambigua</i>	Pink Locust	6 cm
<i>Robinia pseudoacacia 'frisia'</i>	Golden Locust	6 cm
<i>Tilia euchlora</i>	Crimean Linden	6 cm
<i>Tilia cordata</i>	Little Leaf Linden	6 cm
<i>Tilia tomentosa</i>	Silver Linden	6 cm
<i>Ulmus americana 'Brandon'</i>	Brandon Elm	6 cm
<i>Ulmus 'Morton Glossy'</i>	Triumph Elm	6 cm
<i>Zelkova serrata</i>	Japanese Zelkova	6 cm

For the minimum size column, reference to a figure in centimetres (cm) is a measurement of trunk diameter 15 cm above the ground. Reference to a figure in metres (m) is a measurement of height above the ground.

Continued on Page 8

# Replacement Tree Recommendations

Large Conifer Species		
<i>Abies amabilis</i>	Pacific Silver Fir	3 metres
<i>Abies balsamea</i>	Balsam Fir	3 metres
<i>Abies concolor</i>	White Fir	3 metres
<i>Abies fraseri</i>	Fraser's Fir	3 metres
<i>Abies grandis</i>	Grand Fir	3 metres
<i>Abies lasiocarpa</i>	Alpine Fir	3 metres
<i>Abies magnifica</i>	Red Fir	3 metres
<i>Abies nordmanniana</i>	Nordmann Fir	3 metres
<i>Abies pinsapo</i>	Spanish Fir	3 metres
<i>Abies procera</i>	Noble Fir	3 metres
<i>Araucaria araucana</i>	Monkey Puzzle Tree	3 metres
<i>Calocedrus decurrens</i>	Incense Cedar	3 metres
<i>Cedrus atlantica</i>	Atlas Cedar	3 metres
<i>Cedrus deodara</i>	Deodar Cedar	3 metres
<i>Cedrus libani</i>	Cedar of Lebanon	3 metres
<i>Chamaecyparis lawsoniana</i>	Lawson Cypress	3 metres
<i>Chamaecyparis nootkatensis</i>	Nootka Cypress	3 metres
<i>Cryptomeria japonica</i>	Japanese Cedar	3 metres
<i>Larix decidua</i>	European Larch	3 metres
<i>Larix occidentalis</i>	Western Larch	3 metres
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	3 metres
<i>Picea abies</i>	Norway Spruce	3 metres
<i>Picea glauca</i>	White Spruce	3 metres
<i>Picea sitchensis</i>	Sitka Spruce	3 metres
<i>Pinus monticola</i>	Western White Pine	3 metres
<i>Pinus ponderosa</i>	Ponderosa Pine	3 metres
<i>Pinus radiata</i>	Monterey Pine	3 metres
<i>Pinus resinosa</i>	Red Pine	3 metres
<i>Pinus strobus</i>	Eastern White Pine	3 metres
<i>Pinus wallichiana</i>	Himalayan White Pine	3 metres
<i>Pseudotsuga menziesii</i>	Douglas Fir	3 metres
<i>Sequoia sempervirens</i>	Redwood	3 metres
<i>Sequoiadendron giganteum</i>	Giant Sequoia	3 metres
<i>Thuja plicata</i>	Western Red Cedar	3 metres
<i>Tsuga heterophylla</i>	Western Hemlock	3 metres

## Class B tree list

Botanical Name	Common Name	Minimum caliper size
Medium Deciduous Species		
<i>Acer cappadocicum</i>	Coliseum Maple	5 cm
<i>Acer davidii</i>	Snakebark Maple	5 cm
<i>Acer glabrum</i>	Douglas Maple	5 cm
<i>Acer miyabei</i>	Miyabei Maple	5 cm
<i>Acer negundo</i>	Manitoba Maple	5 cm
<i>Acer rubrum 'Armstrong'</i>	Armstrong Maple	5 cm
<i>Acer rubrum 'Autumn Flame'</i>	Autumn Flame Maple	5 cm
<i>Acer rubrum 'Bowhall'</i>	Bowhall Maple	5 cm
<i>Acer rubrum 'Morgan'</i>	Morgan Maple	5 cm
<i>Acer rubrum 'October Glory'</i>	October Glory Maple	5 cm

For the minimum size column, reference to a figure in centimetres (cm) is a measurement of trunk diameter 15 cm above the ground. Reference to a figure in metres (m) is a measurement of height above the ground.

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# Replacement Tree Recommendations

## Class B tree list continued

<i>Acer rubrum</i> 'Red Sunset'	Red Sunset Maple	5 cm
<i>Acer rubrum</i> 'Scanlon'	Scanlon Maple	5 cm
<i>Acer rubrum</i> 'Scarlet Sentinel'	Scarlet Sentinel Maple	5 cm
<i>Acer truncatum</i>	Shantung Maple	5 cm
<i>Aesculus x carnea</i>	Red Horsechestnut	5 cm
<i>Albizia julibrissin</i>	Silk Tree	5 cm
<i>Betula albo-sinensis septentrionalis</i>	Chinese White Birch	6 cm
<i>Betula jacquemontii</i>	Himalayan Birch	6 cm
<i>Betula nigra</i>	River Birch	6 cm
<i>Carpinus betulus</i> 'Fastigiata'	Pyramidal European Hornbeam	5 cm
<i>Celtis occidentalis</i>	Hackberry	5 cm
<i>Cercidiphyllum japonicum</i>	Katsura Tree	5 cm
<i>Cercis canadensis</i>	Eastern Redbud	5 cm
<i>Cornus chinensis</i>	Chinese Dogwood	5 cm
<i>Cornus controversa</i>	Giant Dogwood	5 cm
<i>Cornus mas</i>	Cornelian Cherry	3 metres
<i>Cornus nuttallii</i>	Pacific Dogwood	6 cm
<i>Crataegus lavalleyi</i>	Lavalle Hawthorne	5 cm
<i>Davidia involucreta</i>	Dove Tree	6 cm
<i>Fagus sylvatica</i> 'Dawyck'	Dawyck Beech	5 cm
<i>Fagus sylvatica</i> 'Purple Fountain'	Purple Fountain Beech	5 cm
<i>Gleditsia triacanthos</i>	Honey Locust	6 cm
<i>Gleditsia triacanthos inermis</i>	Thornless Honey Locust	6 cm
<i>Gymnocladus dioica</i>	Kentucky Coffeebean	5 cm
<i>Halesia monticola</i>	Mountain Silverbell	5 cm
<i>Juglans cinerea</i>	White Walnut	5 cm
<i>Juglans regia</i>	English Walnut	5 cm
<i>Koelreuteria paniculata</i>	Golden Rain Tree	5 cm
<i>Laburnum watereri</i>	Golden Chain Tree	5 cm
<i>Liriodendron chinense</i>	Chinese Tuliptree	5 cm
<i>Magnolia acuminata</i>	Cucumber Tree	5 cm
<i>Magnolia cordata</i>	Yellow Cucumber Tree	5 cm
<i>Magnolia grandiflora</i>	Southern Magnolia	5 cm
<i>Magnolia kobus stellata</i>	Star Magnolia	3 metres
<i>Quercus muehlenbergii</i>	Chinquapin Oak	5 cm
<i>Prunus sargentii</i>	Sargent Flowering Cherry	5 cm
<i>Prunus serotina</i>	Black Cherry	5 cm
<i>Prunus serrulata</i>	Japanese Flowering Cherry	5 cm
<i>Prunus subhirtella</i>	Higan Cherry	5 cm
<i>Prunus yedoensis</i>	Yoshino Cherry	5 cm
<i>Pyrus calleryana</i>	Callery Pear	5 cm
<i>Quercus acutissima</i>	Sawtooth Oak	5 cm
<i>Salix alba</i>	White Willow	5 cm
<i>Salix babylonica</i>	Weeping Willow	5 cm
<i>Sophora japonica</i>	Japanese Pagoda Tree	5 cm

For the minimum size column, reference to a figure in centimetres (cm) is a measurement of trunk diameter 15 cm above the ground. Reference to a figure in metres (m) is a measurement of height above the ground.

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# Replacement Tree Recommendations

Medium Conifer Species		
<i>Chamaecyparis obtusa</i>	Hinoki False Cypress	2 metres
<i>Chamaecyparis pisifera</i>	Sawara False Cypress	2 metres
<i>Picea omorika</i>	Serbian Spruce	2 metres
<i>Picea pungens</i>	Colorado Spruce	2 metres
<i>Pinus contorta</i>	Shore Pine	2 metres
<i>Pinus densiflora pendula</i>	Weeping Red Pine	2 metres
<i>Pinus nigra</i>	Austrian Pine	2 metres
<i>Pinus sylvestris</i>	Scotch Pine	2 metres
<i>Pinus thunbergii</i>	Japanese Black Pine	2 metres
<i>Sciadopitys verticillata</i>	Umbrella Pine	2 metres

## Class C tree list

Botanical Name	Common Name	Minimum caliper size
<b>Small Deciduous Species</b>		
<i>Aralia elata</i>	Japanese Angelica Tree	5 cm
<i>Acer campestre</i>	Hedge Maple	5 cm
<i>Acer capilipes</i>	Stripebark Maple	5 cm
<i>Acer circinatum</i>	Vine Maple	2 metres
<i>Acer ginnala</i>	Amur Maple	5 cm
<i>Acer griseum</i>	Paperbark Maple	5 cm
<i>Acer palmatum</i>	Japanese Maple	5 cm
<i>Amelanchier grandiflora</i>	Serviceberry	2 metres
<i>Betula pendula</i>	Weeping Birch	5 cm
<i>Cornus alternifolia</i>	Alternate Leaf Dogwood	5 cm
<i>Carpinus japonica</i>	Japanese Hornbeam	5 cm
<i>Cladastrud lutea</i>	American Yellowwood	5 cm
<i>Cornus 'Eddie's White Wonder'</i>	Eddie's White Wonder	5 cm
<i>Cornus florida</i>	Flowering Dogwood	5 cm
<i>Cornus kousa</i>	Kousa Dogwood	5 cm
<i>Corylus maxima</i>	Giant Filbert	2 metres
<i>Halesia carolina</i>	Carolina Silverbell	5 cm
<i>Maackia amurensis</i>	Amur Maackia	5 cm
<i>Magnolia 'Caerhay's Belle'</i>	Caerhay's Belle Magnolia	5 cm
<i>Magnolia denudata</i>	Yulan Magnolia	5 cm
<i>Magnolia 'Elizabeth'</i>	Elizabeth Magnolia	5 cm
<i>Magnolia 'Forest Pink'</i>	Forest Pink Magnolia	5 cm
<i>Magnolia 'Galaxy'</i>	Galaxy Magnolia	5 cm
<i>Malus species</i>	Crabapple	5 cm
<i>Morus alba</i>	White Mulberry	5 cm
<i>Nyssa sylvatica</i>	Sour Gum Tree	5 cm
<i>Oxydendron arboreum</i>	Sorrel Tree	5 cm
<i>Parrotia persica</i>	Persian Parrotia	5 cm
<i>Phellodendron amurense</i>	Amur Corktree	5 cm
<i>Ptelea trifoliata</i>	Common Hoptree	5 cm
<i>Salix babylonica 'tortuosa'</i>	Corkscrew Willow	5 cm
<i>Stewartia monadelph</i>	Tall Stewartia	5 cm
<i>Stewartia pseudocamillia</i>	Japanese Stewartia	5 cm
<i>Styrax japonica</i>	Japanese Snowbell	5 cm
<i>Styrax obassia</i>	Fragrant Snowbell	5 cm
<i>Syringa pekinensis</i>	Pekin Lilac	5 cm
<i>Syringa reticulate 'Ivory Silk'</i>	Ivory Silk Lilac	5 cm

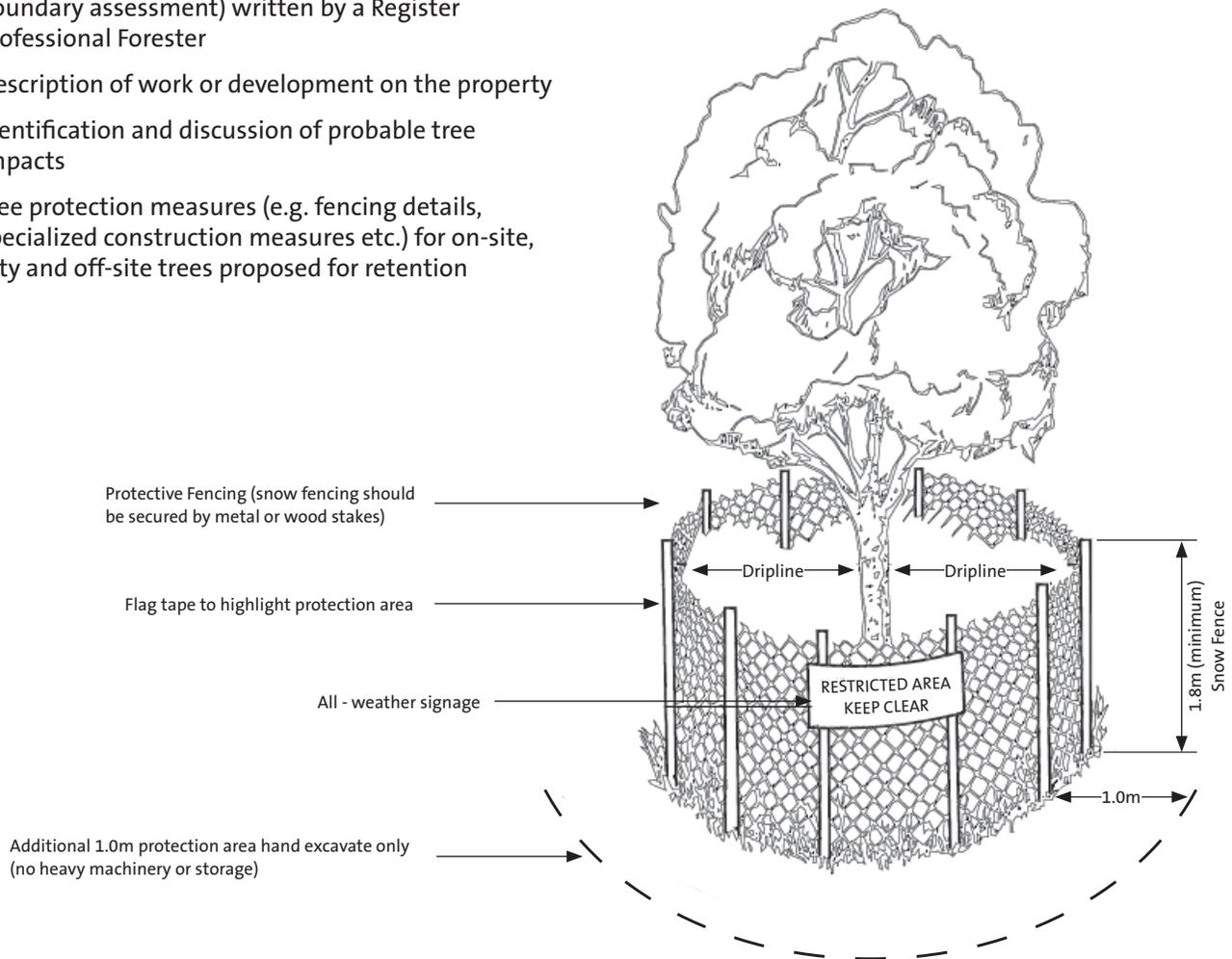
For the minimum size column, reference to a figure in centimetres (cm) is a measurement of trunk diameter 15 cm above the ground. Reference to a figure in metres (m) is a measurement of height above the ground.

# Arborist Report Guidelines for Development Applications

The City of Coquitlam requires an Arborist Report prepared by an ISA Certified Arborist for all development applications (subdivisions, development permits, rezoning). This checklist is a requirement for the Arborist Report and reports may be denied unless all of the following items are included in the report.

**Please include this page with your report and do not submit until all bullets / requirements have been met and marked.**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Civic Address, date of site visit and date it was submitted</li> <li><input type="checkbox"/> Name of arborist, company, address, phone number and email address</li> <li><input type="checkbox"/> Arborist's ISA certification number and Tree Risk Assessor number (for hazard tree evaluations)</li> <li><input type="checkbox"/> City of Coquitlam Business License number</li> <li><input type="checkbox"/> Name, phone number and email for property owner</li> <li><input type="checkbox"/> Site Conditions &amp; site description</li> <li><input type="checkbox"/> If there is an adjacent forested property, include a clearing and risk management plan (i.e windfirm boundary assessment) written by a Register Professional Forester</li> <li><input type="checkbox"/> Description of work or development on the property</li> <li><input type="checkbox"/> Identification and discussion of probable tree impacts</li> <li><input type="checkbox"/> Tree protection measures (e.g. fencing details, specialized construction measures etc.) for on-site, City and off-site trees proposed for retention</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Tree inventory and assessment table to include the following for every tree over 10cm diameter           <ul style="list-style-type: none"> <li>• Species (scientific and common names)</li> <li>• Tag number listed in numerical order</li> <li>• Diameter at breast height (DBH) to the nearest 1 cm</li> <li>• Live crown ratio</li> <li>• Height</li> <li>• Critical Root Zone</li> <li>• Risk rating or rationale if not included</li> <li>• Treatment or recommendation for each tree</li> </ul> </li> </ul> |
|--|--|



- Tree Management Plan showing the location of the trees including those within the building envelope
  - Tree locations derived from a survey drawing
  - Graphically identify trees to be retained or removed
  - Identify tree protection areas
  - Diameter of trees and critical root zones
  - Legible – large enough to read
  - Tag numbers of trees on survey
  - Existing buildings, driveways and sidewalks derived from a survey drawing
  - Proposed buildings, driveways, parking pads, patios and sidewalks
  - Easements and/or Rights of Way
  - Water courses
  - Restrictive covenant areas
  - Neighbouring and City trees within 4 metres of the property line
- Summary table of quantity of trees to be retained, removed and quantity of replacement trees required
- Tree protection fencing dimensions must be listed for onsite and offsite trees including construction details of fencing (must meet City of Coquitlam standards)
- Requirement of Arborist to be on site during any excavation in the Critical Root Zone (CRZ) of trees proposed for retention (including on-site, off-site and City trees)
- Any photographs must be labeled and have tree numbers
- Replanting requirements
  - Include Tree Replacement Requirements based on lot size and existing trees as per City Standards
  - Include species recommendations taken from City of Coquitlam's Replacement Tree Recommendations table
  - Include planting instructions

# Clearing and Risk Management Guidelines

Trees that develop within dense woodlands or forest stands have predictable characteristics. Competition for light gives them a tall, drawn-up form with the living canopy concentrated in the upper 40% of the tree (where there is most light). Trees within the interior of a stand are protected from wind; as a consequence, they do not develop a mechanically-strong root framework and even their stem-wood lacks the strength of an open grown tree.

When these stands are partially cleared to make way for new development, those that are left standing and exposed (i.e. near the edge of the clearing) are susceptible to failure. Often these trees are extremely tall, capable of reaching a great distance should they fail. Mature forest-grown trees, once exposed, do not have the capability to adapt to their new conditions and can remain at risk of failing for many years.

If this situation applies to your development, the City of Coquitlam requires that you hire a qualified professional to carry out an assessment of these potential impacts and to work with you in planning your site layout and developing a plan for managing the risk posed by building homes adjacent to a newly cleared forest edge. A Certified Arborist or Registered Professional Forester will help you to determine how much can be done to mitigate the potential hazard of a new forest-edge condition by tree pruning or modification and how much must be managed by a more prudent site layout.

**Tree management options for new forest edges include the following:**

1. Leave an adequate buffer of modified trees to take the brunt of winds.
2. Trees within the modified buffer should be reduced in height, trimming them enough to reduce the bending forces from strong winds. Take care not to cut too much so that a large topping wound is created or that the residual canopy's capacity to photosynthesize adequate levels of sugar is compromised. Once this modification takes place, these trees will need to be inspected and maintained on a regular basis going forward. The normal life span of the trees will be shortened.
3. For the reasons noted above, new forest edges and the managed buffer zone should be immediately repopulated with an abundance of young conifers appropriate to the site conditions.

It cannot be stressed enough, however, that the key to effective risk management of new forest-edges is early intervention in the developing forest and prudent site planning at the time of development.

If the new forest edge abuts a protected stream or watercourse, the owner/developer is responsible for ensuring that the edge "effect" created in clearing lots does not place the protected trees adjacent to the stream at risk. In these cases, the arborist or forester managing the tree protection and retention for the project is required to work closely with the Qualified Environmental Professional responsible for any Riparian Areas Regulation (RAR) compliance. Any trees that occupy the interface area between the development and the Streamside Protection and Enhancement Area must be assessed by each professional e.g., Arborist, Forester, QEP, for the specific considerations they are responsible for. The professionals must provide a management plan that reflects the proper management of the trees in question.

# Site Assessment Guide for Steep Slopes

Modification of areas with steep slopes may have biophysical and/or geotechnical impacts. A qualified professional may be required to properly evaluate the impacts of proposed tree cutting and to prescribe appropriate mitigation measures.

Upon receipt of the Tree Cutting Permit Application (including any supporting documentation requested) and a review of the site, the City Arborist will determine whether a qualified professional is required using the following guidelines:

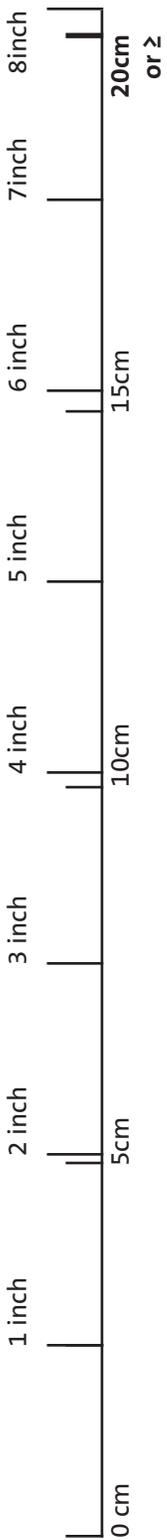
- If the slope is less than 36%, the application may be assessed by the City Arborist.
- If the slope is greater than 36%, but less than 60% and there are no signs of instability, the application should be assessed by a Registered Professional Forester (RPF). For slopes in this range that show signs of instability or are geotechnically critical (see below), the permit must be assessed by a Geotechnical Engineer (P.Geo) .
- If the slope is greater than 60%, the permit must be assessed by a P.Geo.

In certain cases that are considered geotechnically critical, the involvement of a qualified professional is mandatory. The City Arborist will determine whether the site meets the criteria of a geotechnically critical slope. Some examples of a geotechnically critical site include:

- All slopes with a gradient equal to or greater than 60% and an estimated slope length of 3 m or more;
- Any obvious soil erosion or slope instability sites; and
- Any setting in which a critical site is poised directly above a house or a major creek and where any house is sited 15 m or less away from the crest or base of any slope or critical site.

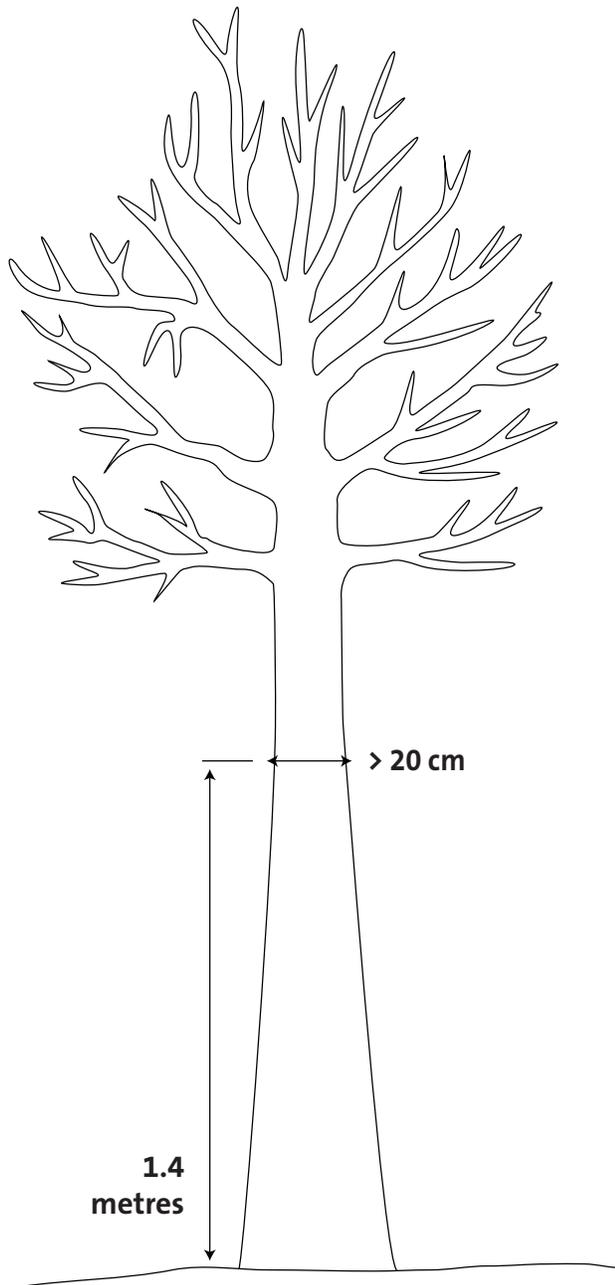
If the City Arborist has determined that your application requires assessment by an RPF or P.Geo, Environmental Services will provide guidance on the technical aspects that should be considered by each qualified professional.

A map of steep slope areas in the City can be viewed at the Planning and Development Counter at City Hall, or you may call the City Arborist who will locate your property on a City mapping program.



Determine whether your property trees are protected by Tree Bylaw No. 4091, 2010. A tree is protected under the Bylaw when it is:

- 20cm or more in stem diameter, measured 1.4m from the ground,
- planted as a replacement tree as a requirement of a Tree Cutting Permit or other development permit, or
- growing on a slope or in streamside protection and enhancement areas







# Coquitlam

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