

A guide to trees
recommended for
planting and growing
near power lines

Planting Near Power Lines

June 2000

L i v i n g w i t h T r e e s



Living with trees

BC Hydro has one of the most efficient systems in the world to distribute electricity to the homes and work places of more than three million British Columbians. Still every year our customers are inconvenienced by power outages caused by trees. In fact, trees account for more than half of all power interruptions, and tree damage to power lines can create severe public safety hazards such as fires or electrocution. We spend more than 20 million dollars annually to deal with tree and power line problems.

Two solutions are removing weak or hazardous trees and encouraging the regular pruning of trees near power lines.

At the same time, Hydro recognizes the practical and aesthetic value of trees to our homes and our communities. We encourage the planting and maintaining of trees, even those close to power lines, provided that the tree is appropriate for that location.



The **right** tree in the **right** place

BC Hydro is pleased to have trees planted beside or even directly under power lines, provided that the tree is a species that will not reach to such height or width that it will grow into or fall on power lines. This guide is designed to assist you in selecting beautiful trees and shrubs for planting, without creating potential hazards for yourself or your neighbours.

There are three planting zones of concern:

Low zone

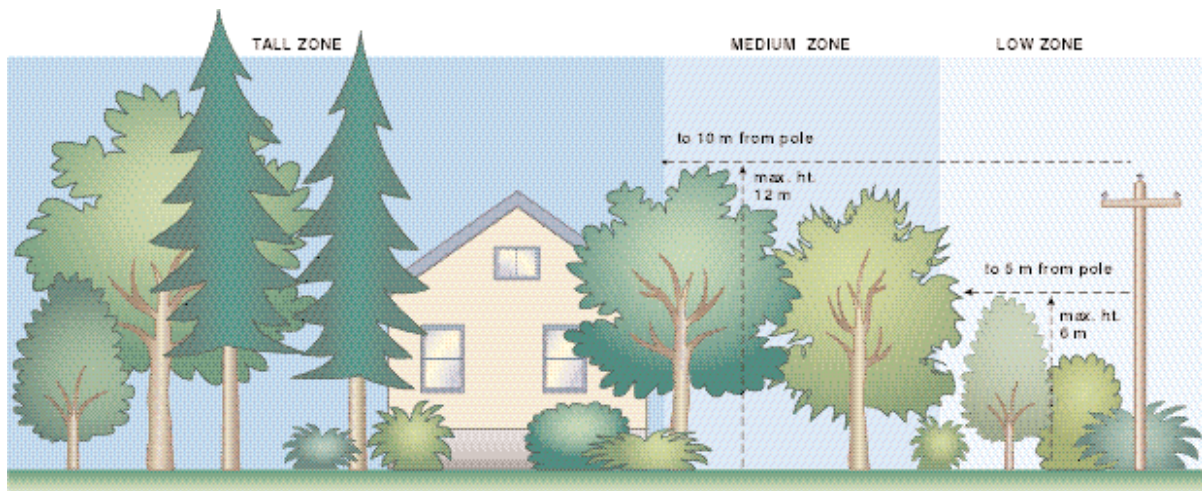
is the area directly under the power lines and extends five metres on either side of the hydro pole. Trees planted in this area should have a maximum mature height of six metres or less.

Medium zone

is the area that extends from the edge of the low zone to a distance of 20 metres from the hydro pole. Trees in this zone cause the majority of outages. Weak or damaged trees in particular create a potential for severe public safety hazards. The maximum height of trees growing in this zone should be 12 metres. This could provide a beautiful landscape without creating safety problems.

Tall zone

is the area more than 20 metres from the power lines. Virtually any strong healthy tree is acceptable in this zone.



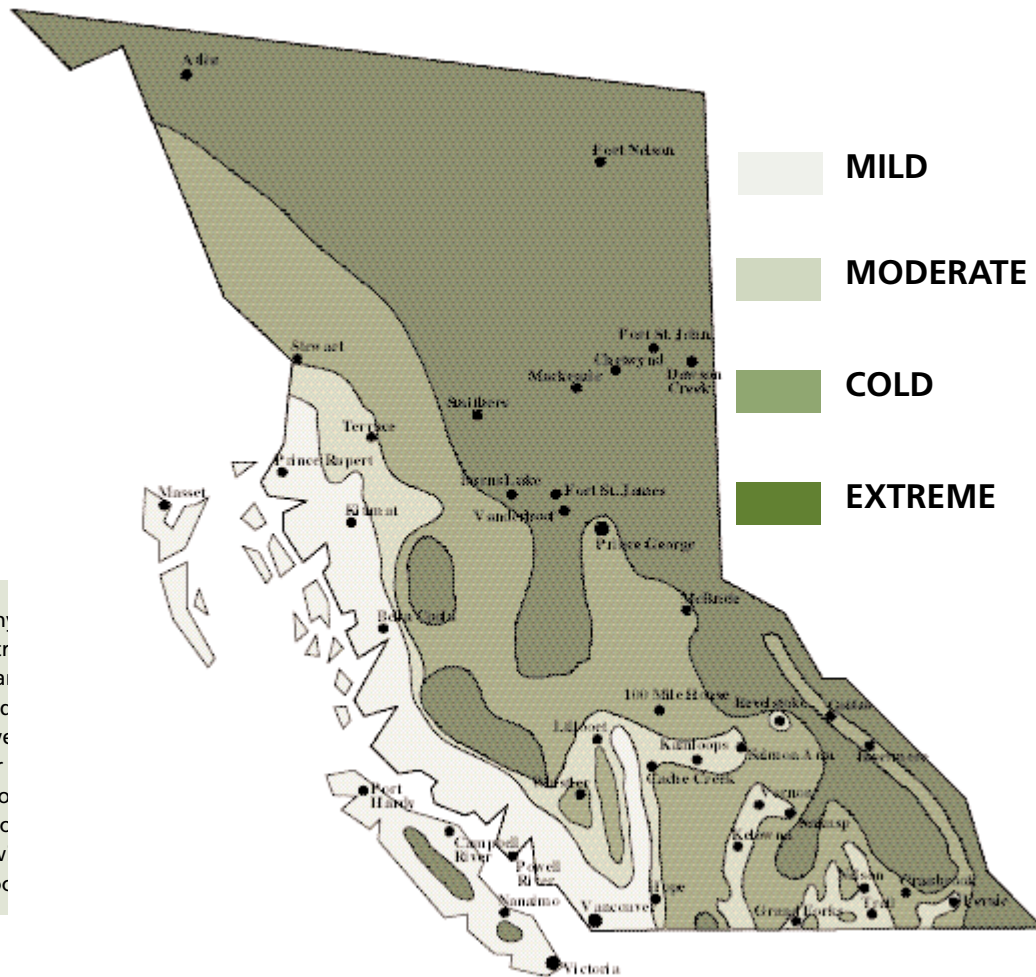
How to use this guide

Locate your geographic region in the extreme, cold, moderate or mild winter areas. Determine if your planting site is in the low, medium or tall zone. If you are planting in the low or medium tree zones, consult the lists under your geographic region for

recommended species appropriate for planting in these locations. Your local garden centre can provide further information and assist you in selecting the right tree for the right location.

Note:

Theoretically, any tree that can survive in an extreme winter region can survive in a moderate or mild winter region. Some trees however, do not tolerate cooler and/or drier conditions. Before selecting a tree, check with a local nursery specialist at your local garden centre.



Cities and Towns of British Columbia located in:

Extreme winter areas

Atlin, Burns Lake, Chetwynd, Dawson Creek, Fort St. John, Fort St. James, Fort Nelson, MacKenzie, Smithers, Vanderhoof.

Cold winter areas

Cranbrook, Golden, Invermere, Kimberley, McBride, Merritt, 100 Mile House, Prince George, Quesnel, Tulameen, Whistler, Williams Lake.

Moderate winter areas

Cache Creek, Fernie, Grand Forks, Hope, Lillooet, Lytton, Kamloops, Kelowna, Nakusp, Nelson, New Hazelton, Revelstoke, Salmon Arm, Terrace, Trail, Vernon.

Mild winter areas

Bella Coola, Fraser Valley, Kitimat, Lower Mainland, Powell River, Prince Rupert, Sandspit, Sechart, Squamish, Vancouver Island.

Selecting the right tree

When selecting a tree there are special considerations to take into account.

- Location**
- The distance the tree will be from houses, structures, sidewalks and power lines.
 - The location of underground utilities or drains that might interfere with the tree's roots.
- Species**
- The direction of growth and aesthetic look of the tree when it matures.
 - Maintenance requirements, e.g. pruning, disease and insect problems associated with the tree species.
- Survival**
- The hardiness of the tree species related to the climate.
 - The adaptability of the tree species to different climate conditions.
 - Wind-chill and other factors that could affect the survival of the tree species.

If you have questions about the suitability of any tree species you wish to plant, consult the staff at your local garden centre before making final selections.

Scientific names

Common names &

All of the trees detailed in this brochure are listed in their respective categories by scientific name in alphabetic order. Many trees have different or many common names. Some of the common names are listed below. Beside each is the scientific name (genus). Information about the tree or shrub is detailed on the following pages under the scientific name.

Common	Scientific (genus)	Common	Scientific (genus)
arborvitae	<i>Thuja</i> ▲	magnolia	<i>Magnolia</i>
beauty bush	<i>Kolkwitzia</i>	maple	<i>Acer</i> ▲
bladdernut	<i>Staphylea</i>	mock orange	<i>Philadelphus</i> ▲
bridal wreath	<i>Spiraea</i> ▲	mountain ash	<i>Sorbus</i> ▲
butterfly bush	<i>Buddleia</i>	oak	<i>Quercus</i> ▲
cedar	<i>Thuja</i> ▲	Persian ironwood	<i>Parrotia</i>
cherry	<i>Prunus</i> ▲	plum	<i>Prunus</i> ▲
chokecherry	<i>Prunus</i> ▲	pyramidalis	<i>Thuja</i> ▲
cornelian cherry	<i>Cornus</i> ▲	quince	<i>Chaenomeles</i>
crabapple	<i>Malus</i> ▲	redbud	<i>Cercis</i>
cranberry bush	<i>Viburnum</i>	Russian olive	<i>Elaeagnus</i>
dogwood	<i>Cornus</i> ▲	Saskatoon berry	<i>Amelanchier</i> ▲
elder/elderberry	<i>Sambucus</i> ▲	serviceberry	<i>Amelanchier</i> ▲
emerald cedar	<i>Thuja</i> ▲	Siberian peashrub	<i>Caragana</i>
false holly	<i>Osmanthus</i>	Smaragd	<i>Thuja</i> ▲
golden chain	<i>Laburnum</i>	smoke tree	<i>Cotinus</i>
goldenrain tree	<i>Koelreuteria</i>	snowball tree	<i>Viburnum</i>
hawthorn	<i>Crataegus</i> ▲	snowbell tree	<i>Styrax</i>
holly	<i>Ilex</i>	sorrel tree	<i>Oxydendrum</i>
hornbeam	<i>Carpinus</i>	spindle tree	<i>Euonymus</i>
Japanese plum yew	<i>Cephalotaxus</i>	staghorn	<i>Rhus</i>
katsura	<i>Cercidiphyllum</i>	sumac	<i>Rhus</i> ▲
laurel	<i>Prunus</i> ▲	witchhazel	<i>Hamamelis</i>
lilac	<i>Syringa</i>	yew	<i>Taxus</i> ▲

The attached lists are of trees which are available in B.C. nurseries. As new stock is constantly being added, there may be other choices available to you. Consider planting low growing native species when selecting trees. Native trees and shrubs offer a number of advantages over imported exotics. Genera with a triangle (▲) next to their name have at least some native species.

Trees recommended for planting in extreme winter areas

Low zone

Acer ginnala (Amur maple)

Growth up to six metres. Small tree, one of the few maples with fragrant blossoms. Excellent fall colour (yellow to brilliant red). Good spread, very hardy.

Amelanchier alnifolia (serviceberry, Saskatoon)

Small tree or shrub, often multi-stemmed. White flowers and purplish edible fruit. Makes great pies and jellies.

Caragana arborescens (Siberian peashrub)

A fine small tree or shrub with bright yellow flowers grown on previous years wood. Very hardy and versatile, many cultivars available.

Cornus alba (Tartarian Siberian dogwood)

Growth up to four metres. A fine hardy shrub that is attractive in winter and summer. Deep red stems give winter show. Many cultivars.

Cornus baileyi (red stem dogwood)

Growth up to three metres. Attractive shrub during summer and winter, when red stems make a showy winter scene.

Juniperus communis (dwarf juniper)

Average growth 4.5 metres. Excellent evergreen small tree or shrub. Tremendously hardy particularly in cold. Many cultivars.

Pinus mugo (Mugo pine)

Growth between 5 - 6 metres. Excellent cold weather pine. Pyramidal cultivars available, may also be a broad shrub or small tree.

Prunus virginiana (Western chokecherry)

Growth up to six metres. Small tree or multi-stemmed shrub. Attractive foliage and white flowers with showy red fruit turning to dark purple. Excellent for jellies and wines.

Salix discolor (pussy willow)

Growth up to five metres. Willow shrub, early catkins in spring, full thick foliage through summer.

Salix pyrifolia (balsam willow)

Growth up to six metres. Grows best in boggy areas, has a balsam fragrance.

Sambucus racemosa (elder)

Growth up to four metres. Attractive elderberry shrub with flowers and berries. Choose cultivars adapted to planting area.

Acer ginnala



Sorbus americana (American mountain ash)

Growth up to 4 - 6.5 metres. Northern species of mountain ash. Well adapted to cold weather areas, handles wet or dry soil. Flowers white, fruit bright red.

Syringa vulgaris (lilac)

Beautiful and aromatic lilac is a favorite the world over. Choose a variety adapted to your planting area. Your garden centre will have them.

Tamarix ramosissima (tamarix)

Growth up to five metres. Summer flowering shrub is very adaptable and also salt tolerant. Beside a roadway, this attractive shrub is a good choice.

Taxus canadensis (Canadian yew)

Excellent species, hardy and attractive yew. Difficult to locate, but your garden centre may be able to locate these fine evergreens for you.

Viburnum trilobum (cranberry bush)

Growth up to four metres. Attractive summer flowers and winter berries make this hardy shrub a sound power line companion.

Amelanchier



Medium zone

Acer glabrum 'Var.Douglasii' (Douglas maple)

Average growth up to eight metres at maturity. An attractive and hardy maple, available in many varieties.

Elaeagnus angustifolia (Russian olive)

Grey and green foliage makes this hardy tree an outstanding feature for front yards and a good medium zone power line companion.

Prunus spp. (Flowering cherries, plums)

Equally popular flowering cherries and plums give wonderful spring blossoms. Many have excellent leaf colour. Always check with your local nursery professional for disease free varieties developed for your area.

Salix spp. (willows)

Another prolific species from which many attractive cultivars have been developed.

Trees recommended for planting in cold winter areas

(in addition to trees listed in Extreme Winter areas for low and medium zones)

Low zone

Acer griseum (Paperbark maple)

Maximum growth six metres. Slow growing tree. Winter bark peeling creates dormant interest. Excellent power line companion.

Chamaecyparis pisifera 'Filifera' (thread leaf cypress)

Growth to five metres. Evergreen cultivar is columnar in shape and very hardy. Available in light, dark green and gold tips. Used throughout the world as a feature plant, makes an attractive power line tree.

Cornus sericea (golden twig dogwood)

Growth up to three metres. Similar to baileyi with brilliant yellow stem varieties.

Corylus americana (filbert)

Growth up to six metres. Attractive multi-stemmed tree. Good shape when it matures and the nuts are edible.

Crataegus spp. (hawthorn)

Growth up to six metres. Beautiful flowers and berries on a thorny tree. Consult with a nursery professional regarding an area adapted variety.

Euonymus alatus (Burning bush)

Great shrub for fall colours. Bright orange-red berries.

Ilex x meserveae (Northern holly)

Growth up to six metres. Hardy holly shrubs available in varieties adapted to local weather conditions.

Philadelphus x virginialis (mock orange)

Growth between 3 - 4 metres. A profusion of creamy white flowers covers this hardy shrub which is a great species for planting in limited space.

Rhus typhina (staghorn sumac)

Sumacs are hardy, prolific and small enough to be under power lines. An attractive tree with bright fall colours.

Staphylea trifolia (bladdernut)

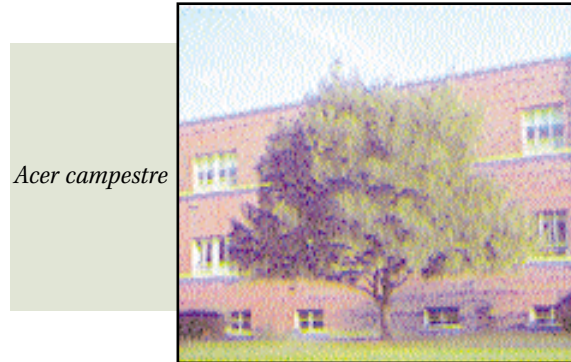
Sometimes hard to find in a nursery, this attractive tree and shrub is a year round delight with foliage, flowers, fruits and nuts.

Syringa reticulata (Japanese tree lilac)

Growth up to six metres. Small tree, exfoliating bark on short stem. Oval crown with highly scented yellowish white flowers.

Thuja occidentalis (Arborvitae, White cedar)

Growth up to 4.5 metres. Choose one of the low growing varieties of this popular plant for hedging or feature trees.



Acer campestre

Medium zone

Acer campestre (Hedge maple)

Growth up to 12 - 16 metres. Attractive round-headed tree.

Acer tataricum (Tatarian maple)

Growth up to 10 metres. Small attractive tree, with red fruit in late summer and bright green leaves that turn yellow in fall.

Amelanchier spp. (serviceberry)

A number of hardy varieties of the attractive white-flowered serviceberry are available in each hardiness zone.

Cercis canadensis (redbud - judas tree)

Growth up to 10 metres. Showy choice in a wonderful flowering tree. Available in purple and white ('Alba') flowers.

Cornus mas (Cornelian cherry - dogwood)

This hearty dogwood has clusters of yellow flowers in early spring before leaves are on the tree. Adaptable, hardy and showy.

Euonymus europaeus (spindle tree)

This tree changes colour throughout the year and always creates interest.

Malus spp. (Flowering crabapple)

Everyone loves the beautiful flowering crabapples when they bloom in spring and often their small fruits provide winter attraction. Crabapple varieties have been developed for all conditions. Your local nursery professional will show you trees suitable for your planting site.

CAUTION: Malus spp. (flowering crabapple) is host to the

Apple codling moth and should not be planted in the Okanagan or other apple growing regions. Always consult with your local nursery when planting trees in areas where commercial fruit crops are grown.

Malus



Trees recommended for planting in moderate winter areas

(in addition to trees listed in Cold Winter areas for low and medium zones)

Low zone

Acer palmatum (Japanese maple)

Few trees offer the attractiveness of this fine species. Ideal in either moderate or mild winter areas and available with red or green foliage. A great choice for a power line companion.

Acer circinatum (vine maple)

B.C. native vine maple usually grows in clumps and offers an attractive green foliage only outdone by its brilliant fall colour.

Chaenomeles japonica (Japanese quince)

Large red, pink or white blossoms announce the spring with this fine shrub. Easily trainable, it makes a thick and attractive shrub.

Cotinus coggygria (smoke tree)

The silk-like thread flowers of this handsome tree appear like smoke hovering over its attractive foliage. Available in green or purple, this will be a conversation piece in your front garden.

Forsythia x intermedia (border forsythia)

A hardy plant with reams of bright yellow early-spring blossoms.

Hamamelis x intermedia (witchhazel)

Hardy shrub with winter bloom, x intermedia has several varieties and several colours available.

Hamamelis mollis (Chinese witchhazel)

Brilliant yellow blooms are featured on this "best of breed".

Juniperus spp. (dwarf junipers)

Many suitable and attractive varieties to choose in this ever-green family.

Kolkwitzia amabilis (beauty bush)

Growth up to four metres. The common name is right on for this handsome shrub with pink and white bell-like flowers.

Magnolia stellata (star magnolia)

Growth up to 3.5 metres. The small star-like flowers cover this magnolia in early spring. An excellent choice.

Rhododendron spp. (rhododendron)

Growth of some varieties up to four metres. Hundreds of varieties to choose from in this popular attractive shrub, large blossoms and a wide variety of colours.

Spiraea prunifolia 'Arguta' (bridal wreath)

A wonderful spring flowering plant with masses of white flowers.

Thuja orientalis (oriental arborvitae)

Not recommended for coastal areas. Choose one of the low growing varieties of this fine evergreen for under power line planting, or maintain as a hedge. Lots of variety to choose from.

MEDIUM ZONE

Cercidiphyllum japonicum (katsura tree)

The shape and colour of the foliage and the interesting bark effects make the Katsura a beautiful feature tree.

Cornus "Eddie's White Wonder" (Eddie's dogwood)

Eddie's dogwood is covered in blooms in the spring and is very resistant to the dogwood leaf-blotch blight which effects the native "nuttallii". The choice for coastal planting of dogwood.

Cornus florida (Flowering dogwood)

Cultivars give you some flower colour choices in this attractive tree.

Cornus kousa 'chinensis' (Chinese dogwood)

Large creamy white bracts light up this tree which prefers light shade.

Ilex crenata (Japanese holly)

More shrub-like holly variety with simple leaves. Fruits black and less obvious than with aquifolium or opaca.

Koelreutaria paniculata (goldenrain tree)

Very attractive summer flowering tree with bright yellow flowers. An excellent choice for a feature tree.

Laburnum watereri 'vossii' (golden chain)

Wonderful flowering chains of yellow flowers on this fine tree. Very attractive. CAUTION: Flowers, fruits and seeds are extremely poisonous.

Magnolia x soulangiana (saucer magnolia - tulip tree)

Growth up to 10 - 15 metres. Fragrant brilliant flowers fill this tree in May. White tips with pink or purple bottoms.

Oxydendrum arboreum (sorrel tree)

Lustrous leaves turn brilliant red in fall. Occasionally hard to find, but an interesting addition to any garden.

Parrotia persica (Persian ironwood)

One of the best small specimen trees. Interesting foliage and bark make it a conversation piece. Very problem resistant.

Prunus x blireana (Blireana plum)

If you want a fine showy tree, you should consider Prunus. Blireana is just one of the stars in an extremely showy family.

Sorbus aucuparia (European mountain ash)

White flowers in spring, red berries in the fall and is a bird feeder in colder winters. Excellent single tree feature.

Stewartia sinensis (Chinese stewartia)

Very handsome large shrub with white flowers and yellow stamens.

Styrax japonica (Japanese snowball)

A great June flowering small tree or shrub. Prefers light shade.

Taxus spp. (yew)

In evergreen shrubs and small trees, the yews have a lot to offer. CAUTION: Very toxic leaves and berries.

Note:

Flowering Cherries are prohibited from being planted in the "Little cherry" control area of the Central Interior. This includes the entire Okanagan Valley, north to Kamloops and Salmon Arm and south to Princeton and Osoyoos. There is also a "Little cherry control area" in the Creston area. Check with your local nursery.

Trees recommended for planting in mild winter areas

(in addition to trees listed in Moderate Winter areas for low and medium zones)

Low zone

Acer griseum (paperbark maple) - refer to previous list.

Acer palmatum (Japanese maple) - refer to previous list.

Buddleia spp. (butterfly bush)

Growth up to five metres. A good variety of very attractive shrubs with blossoms galore.

Camellia japonica (camellia)

An absolute delight every spring as the bright pure flowers show off against a glossy green foliage. Must be planted in sheltered areas.

Cephalotaxus harringtonia (Japanese plum yew)

Harder to find than other yews but a good choice if you want the yew look in the milder winter settings.

Chaenomeles japonica (Japanese quince)

- refer to previous list.

Cotinus coggygria (smoke tree) - refer to previous list.

Holodiscus discolor (ocean spray)

An impressive shrub with creamy white flowers in feathery plumes. Many excellent landscape applications.

Ilex crenata (Japanese holly) - refer to previous list.

Magnolia stellata (star magnolia) - refer to previous list.

Malus spp. (flowering crabapple) - refer to previous list.

Osmanthus heterophyllus (false holly)

Very hardy shrub. Excellent screen or border plant.

Philadelphus x virginialis (mock orange)

- refer to previous list.

Photinia fraseri (photinia)

Famous red tip shrub is an eye catcher as a hedge or a feature bush.

Prunus spp. (flowering plums, cherries, peaches)

Star studded line-up of single and double flowering trees.

Many varieties to choose from.

Rhododendron spp. (rhododendron) - refer to previous list.

Staphylea trifolia (bladdernut) - refer to previous list.

Thuja occidentalis 'Smaragd' (emerald cedar)

Maybe a bit over used only because it is an attractive pyramidal bright green tree. Used as a boundary, hedge or feature tree.

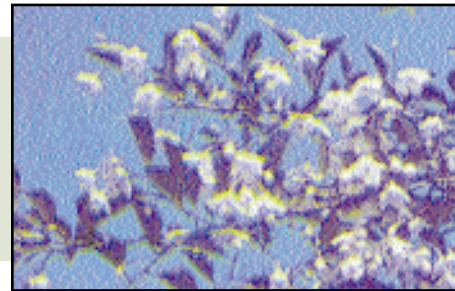
Viburnum opulus (snowball tree)

An attractive white cluster of flowers is a feature of this fine small tree. Several varieties to choose from.

Acer palmatum



Styrax japonica



Medium zone

Carpinus betulus 'Columnaris' (european hornbeam)

An attractive roadside tree. Develops an egg shape profile.

Cercis canadensis (red bud) - refer to previous list.

Cercidiphyllum japonicum (katsura tree)

- refer to previous list.

Cornus 'Eddie's White Wonder' (dogwood)

- refer to previous list.

Ilex aquifolium (english holly)

Glossy leaves, bright red berries. An attractive feature tree.

Koelreutaria paniculata (goldenrain tree)

- refer to previous list.

Magnolia soulangiana (saucer magnolia)

- refer to previous list.

Malus spp. (flowering crabapple) - refer to previous list.

Caution:

Malus spp. (flowering crabapple) is host to the Apple codling moth and should not be planted in the Okanagan or other apple growing regions. Always consult with your local nursery when planting trees in areas where commercial fruit crops are grown.

Oxydendrum arboreum (sorrel tree) - refer to previous list.

Parrotia persica (Persian ironwood) - refer to previous list.

Prunus spp. (flowering cherries, plums, peaches)

- refer to previous list.

Quercus palustris (pin oak)

Growth 10 - 12 metres. Excellent upright feature tree requires adequate space. Will be an attractive feature for years.

Stewartia sinensis (chinese stewartia) - refer to previous list.

Styrax japonica (Japanese snowbell) - refer to previous list.

Thuja plicata 'Aurea' (goldtip cedar)

A beautiful cedar cultivar with gold tips. Your nursery professional can offer several *Thuja* varieties that will suit the adjacent to power lines criteria.

Thuja plicata 'Excelsa' (cedar)

Growth up to 15 metres. Excellent hedging cedar. If planting as a feature give the power lines a full 12 metres offset.

Thuja occidentalis 'Fastigiata' (pyramidalis)

The pyramidalis variety of *Thuja plicata* (red cedar).

Excellent tree, but does need annual trimming and tying.

Landscape **planning** and **design**

Just as you would not build a house without a design, you should not landscape without a plan. Planning is the key to good landscape design. The size, proportions, form and lines of the house should be considered in determining the location, size and type of plants to be used. The main purpose of a planting plan is to provide an attractive setting which compliments the home. If possible employ a professionally trained landscape architect to plan and develop your home grounds. Or you may prefer to have the planning done by an experienced designer, but do the work yourself. Or you may wish to do the whole job yourself.

After you have drawn up a plan of your property, pay particular attention to areas around power lines. Refer to the recommended species list and choose plants that are easily maintained under or near power lines and that will survive in your region. The right plant in the right place is important in any landscape; this can be used to draw the

eye away from an unattractive feature. A flowering cherry tree can certainly draw one's attention away from a utility pole. Trees and shrubs can lessen the visual impact of power lines if lines of sight are considered in the planting design. For example, a tree placed at the appropriate distance between the living room window and a power pole can screen the structure without having to plant it next to the pole.

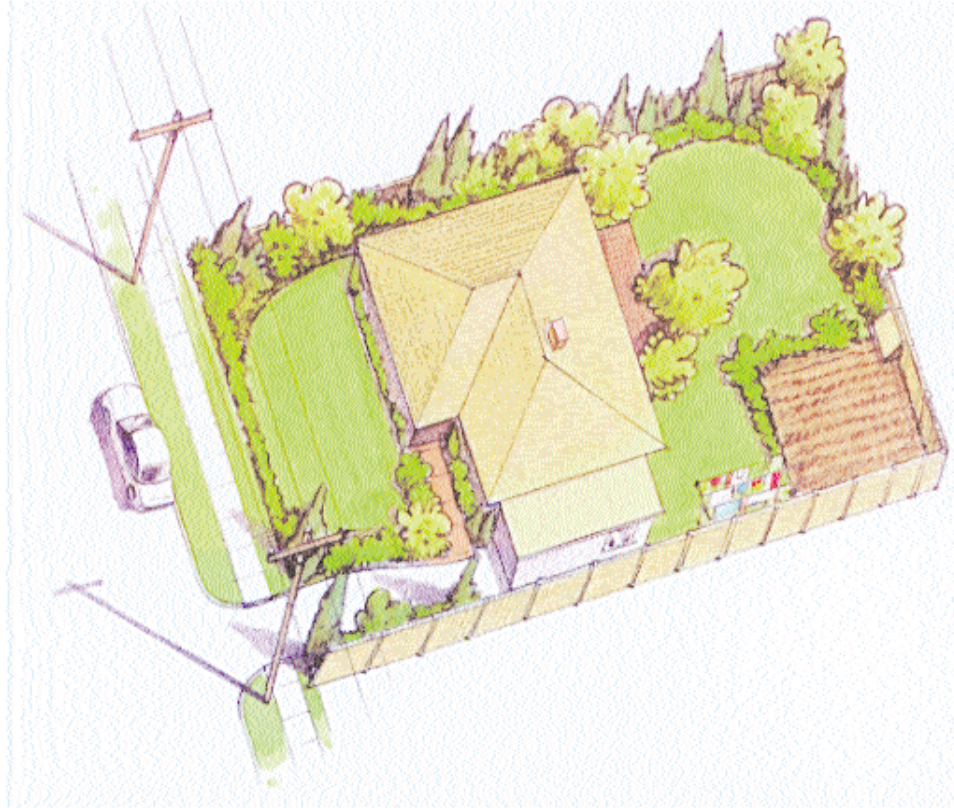
A scaled plan should be drawn showing the following:

- 1) the location of the house on the property
- 2) the location of the power lines and poles
- 3) existing trees, structures and utilities
- 4) good and bad views on and off the property
- 5) division of the lot into activity areas, e.g. private outdoor living area (P), front yard (F), service and gardening areas (S)

Next:

- 6) create the necessary division between areas with planting
- 7) select the best plants to carry out the plan
- 8) stick to the plan





A note about **hedging**

Formal or maintained hedges are excellent next to or even immediately under power lines. We encourage you to plant and maintain such hedges as they will eliminate public safety hazards and reduce the incidence of power outages.

Hedges must be maintained by the home owner, as annual pruning is required in order to keep hedges healthy and vibrant. A maximum height of four metres should be maintained.

Plants Recommended for Hedges

Acer campestre (hedge maple)
Berberis (evergreen varieties) barberry
Buxus (boxwood)
Caragana (Siberian peashrub)
Chaenomeles (quince)
Cotoneaster lucidis (cotoneaster)
Elaeagnus angustifolia (russian olive)
Ilex (holly)

Juniperus (juniper)
Ligustrum (privet)
Photinia (photinia)
Prunus laurocerasus (English laurel)
Taxus (yew)
Thuja (arborvitae, cedar)
Tsuga (hemlock)
Viburnum (viburnum)



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