

TREE LIST

Recommended replacement trees

This document contains a list of recommended replacement trees assessed for their suitability to the current and projected future climate of West Vancouver. This list is intended to be used by both residents and the District when determining the most appropriate tree species for a property or public area. Consideration should be given to the size, habit leaf or fruit shedding, and ongoing water and maintenance requirements of each tree considered for replanting. There are a variety of micro-climates with elevation changes and influence from the ocean, across the District—while a species may thrive at one location, it may struggle at another location.

SMALL TREES mature height is under 10 metres (33 feet)

| TREE TYPE | canopy density | shade tolerance | drought tolerance | firewise rating <i>flammability</i> | high-wind tolerance | future climate suitability | size typically <7 m (23 ft) |
|---|----------------|-----------------|-------------------|--|---------------------|----------------------------|-----------------------------|
| Paperbark maple <i>Acer griseum</i> | M | M | M | M | M | H | Y |
| Japanese maple <i>Acer palmatum</i> | L | H | L | L | M | M | Y* |
| Amur maple <i>Acer tataricum</i> | M | M | M | L | M | H | Y* |
| Autumn Brilliance Serviceberry <i>Amelanchier x grandiflora</i> | M | M | M | L | H | H | Y |
| Eastern redbud <i>Cercis canadensis</i> | L | M | H | M | M | H+ | Y |
| Sawara false cypress <i>Chamaecyparis pisifera</i> | M | M | M | H | - | H | N |
| Chitalpa <i>Chitalpa x tashkentensis</i> | M | L | M | L | M | H | Y |
| Flowering dogwood <i>Cornus florida</i> | M | H | M | L | H | H | Y |
| Kousa dogwood <i>Cornus kousa</i> | M | M | L | L | H | M | Y |
| Cornelian cherry <i>Cornus mas</i> | M | M | M | L | H | H | Y |
| Black hawthorn <i>Crataegus douglasii</i> | M | M | M | L | H | H | N |
| Chinese juniper <i>Juniperus chinensis</i> | H | L | H | H | M | H+ | Y |
| Rocky Mountain Juniper <i>Juniperus scopulorum</i> | H | - | M | H | - | H | Y^ |
| Japanese privet <i>Ligustrum japonicum</i> | H | M | M | L | H | H (trial) | Y* |
| Common apple <i>Malus domestica</i> | M | L | M | L | M | H | N |

DEFINITIONS & RATINGS

Canopy density: describes shade density

L = low; M = moderate; H = high

Shade tolerance: Shade tolerance based on minimum light availability tolerated by the species and modified to include professional forester opinions on species biology

L = low: needs >25% full sunlight;
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Drought tolerance: The length of drought tolerance expected for the species based on annual precipitation, potential evapotranspiration, duration of dry periods and minimum soil water potential tolerated long term with <50% foliage damage or dieback

L = low: tolerant of no more than a few weeks of drought;
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H = high: tolerant of more than 2 months of drought

Typical mature size: The final column denotes if a tree will stay smaller than 7 m, or can easily be maintained to do so. These trees will help to minimize view impacts and could fit under utility lines.

Y = Yes; N = No; Y* = Yes, but capable of self-seeding so avoid planting in locations where seeds can disperse;
Y^ = Can grow taller than 7 m but typically managed as a hedge

Firewise rating (flammability): Expected flammability of the species based on reported Firewise ratings

L = low flammability, firewise;
M = moderate flammability, moderately firewise;
H = high flammability, at risk or not firewise

High-wind tolerance: Estimated likelihood of a tree species withstanding large diameter branches breaking or failing at the root plate under wind loading

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Future climate suitability: Future climate suitability based on USDA hardiness zone, AHS heat zone and drought tolerance

H+ = species anticipated to tolerate a broad range of sites;
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SMALL TREES continued... mature height is under 10 metres (33 feet)

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|---|----------------|-----------------|-------------------|--|---------------------|----------------------------|-----------------------------|
| Sweet mountain pine <i>Pinus mugo</i> | H | L | H | H | H | H+ | Y |
| Japanese black pine <i>Pinus thunbergii</i> | H | L | H | H | M | H+ | N |
| Oriental arborvitae <i>Platycladus orientalis</i> | H | L | M | H | M | H (trial) | Y |
| Higan cherry <i>Prunus subhirtella</i> | L | L | M | H | M | H | N |
| Japanese Emperor oak <i>Quercus dentata</i> | M | L | M | L | H | H | N |
| Orange-bark stewartia <i>Stewartia monadelphica</i> | M | M | M | L | M | H | Y |
| Japanese stewartia <i>Stewartia pseudocamellia</i> | M | M | M | M | - | H | Y |
| Japanese snowbell <i>Styrax japonicus</i> | M | M | M | L | M | H | Y |
| Fragrant snowbell <i>Styrax obassia</i> | M | M | L | L | M | M | Y |

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MEDIUM TREES mature height is 10-15 metres (33-49 feet)

| TREE TYPE | canopy density | shade tolerance | drought tolerance | firewise rating <i>flammability</i> | high-wind tolerance | future climate suitability |
|--|----------------|-----------------|-------------------|--|---------------------|----------------------------|
| Field Maple <i>Acer campestre</i> | H | M | M | M | M | H |
| Caucasian maple <i>Acer cappadocicum</i> | H | M | M | L | M | H |
| Miyabe's maple <i>Acer miyabei</i> | - | M | M | L | - | H |
| Italian alder <i>Alnus cordata</i> | H | L | M | L | M | H |
| Pacific madrone/arbutus <i>Arbutus menziesii</i> | M | M | H | L | L | H+ |
| California incense cedar <i>Calocedrus decurrens</i> | H | M | H | H | M | H+ |
| European hornbeam <i>Carpinus betulus</i> | H | H | M | L | H | H |
| Japanese hornbeam <i>Carpinus japonica</i> | H | M | M | L | - | H |
| Chinese chestnut <i>Castanea mollissima</i> | H | L | M | M | M | H |
| Common catalpa <i>Catalpa bignonioides</i> | M | M | M | L | M | H |
| Western catalpa <i>Catalpa speciosa</i> | M | L | H | L | M | H+ |
| Hinoki false cypress <i>Chamaecyparis obtusa</i> | M | H | M | H | H | H |
| Yellowwood <i>Cladrastis kentukea</i> | H | M | M | M | L | H |
| Handkerchief tree <i>Davidia involucrata</i> | M | M | M | L | M | H |
| Honey locust <i>Gleditsia triacanthos</i> | L | L | H | M | M | H+ |
| Eastern red cedar <i>Juniperus virginiana</i> | M | L | H | H | H | H+ |
| Golden rain tree <i>Koelreuteria paniculata</i> | L | L | H | L | M | H+ |
| Southern magnolia <i>Magnolia grandiflora</i> | H | H | M | H | M | H |
| White mulberry <i>Morus alba</i> | H | L | M | L | L | H |
| American hop hornbeam <i>Ostrya virginiana</i> | M | H | M | M | M | H |
| Persian ironwood <i>Parrotia persica</i> | H | L | M | M | - | H |

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| TREE TYPE | canopy density | shade tolerance | drought tolerance | firewise rating <i>flammability</i> | high-wind tolerance | future climate suitability |
|--|----------------|-----------------|-------------------|--|---------------------|----------------------------|
| Serbian spruce <i>Picea omorika</i> | H | H | M | H | M | H |
| Colorado blue spruce <i>Picea pungens</i> | H | H | M | H | M | H |
| Shore pine <i>Pinus contorta</i> | H | L | H | H | H | H+ |
| Japanese red pine <i>Pinus densiflora</i> | H | L | M | H | H | H |
| Japanese white pine <i>Pinus parviflora</i> | M | L | M | H | M | H |
| Chinese pistacio <i>Pistacia chinensis</i> | H | L | H | L | H | H+ |
| Sargents cherry <i>Prunus sargentii</i> | M | L | M | L | M | H |
| Japanese cherry <i>Prunus serrulata</i> | L | L | M | L | M | H |
| Yoshino cherry <i>Prunus x yedoensis</i> | M | L | M | L | M | H |
| Sawtooth oak <i>Quercus acutissima</i> | H | L | H | L | M | H+ |
| Holly oak <i>Quercus ilex</i> | H | M | H | M | H | H+ |
| Pacific willow <i>Salix lucida</i> | H | L | M | L | L | H |
| Umbrella pine <i>Sciadopitys verticillata</i> | H | M | M | H | H | H |
| Oakleaf mountain ash <i>Sorbus x thuringiaca</i> | - | L | M | L | - | H |
| Bald cypress <i>Taxodium distichum</i> | M | L | M | H | M | H |
| English yew <i>Taxus baccata</i> | H | H | M | H | H | H |
| American arborvitae <i>Thuja occidentalis</i> | H | M | M | H | H | H |

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LARGE TREES mature height is greater than 20 metres (65 feet)

| TREE TYPE | canopy density | shade tolerance | drought tolerance | firewise rating <i>flammability</i> | high-wind tolerance | future climate suitability |
|--|----------------|-----------------|-------------------|--|---------------------|----------------------------|
| Noble fir <i>Abies procera</i> | H | L | M | H | H | H |
| Red maple <i>Acer rubrum</i> | M | M | M | M | L | H |
| Silver maple <i>Acer saccharinum</i> | M | H | M | L | L | H |
| Sugar maple <i>Acer saccharum</i> | H | H | M | M | H | H |
| Common horsechestnut <i>Aesculus hippocastanum</i> | H | M | M | M | M | H |
| Red horse chestnut <i>Aesculusx carnea</i> | H | - | H | M | L | H |
| Red alder <i>Alnus rubra</i> | M | L | M | L | L | H |
| Atlas cedar <i>Cedrus atlantica</i> | M | L | M | H | M | H |
| Deodar cedar <i>Cedrus deodara</i> | M | M | H | H | M | H+ |
| Cedar of Lebanon <i>Cedrus libani</i> | M | - | H | H | M | H |
| Common hackberry <i>Celtis occidentalis</i> | H | M | H | L | M | H+ |
| Giant dogwood <i>Cornus controversa</i> | M | L | M | L | H | H |
| Japanese red cedar <i>Cryptomeria japonica</i> | H | M | M | H | M | H |
| Ginkgo <i>Ginkgo biloba</i> | M | L | H | L | H | H+ |
| Kentucky coffeetree <i>Gymnocladus dioicus</i> | M | M | H | L | H | H+ |
| English walnut <i>Juglans regia</i> | M | L | M | L | H | H |
| Sweet gum <i>Liquidambar styraciflua</i> | M | L | M | L | M | H |
| Tulip tree <i>Liriodendron tulipifera</i> | L | L | M | L | L | H |
| Sourwood <i>Oxydendrum arboreum</i> | M | M | M | L | M | H |
| Austrian pine <i>Pinus nigra</i> | H | L | H | H | M | H+ |
| London planetree <i>Platanus x hispanica</i> | H | M | M | M | H | H |

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|---|----------------|-----------------|-------------------|--|---------------------|----------------------------|
| Douglas fir <i>Pseudotsuga menziesii</i> | M | M | M | H | H | H |
| Scarlet oak <i>Quercus coccinea</i> | M | L | H | L | H | H+ |
| Hungarian oak <i>Quercus frainetto</i> | H | L | M | L | M | H |
| Garry oak <i>Quercus garryana</i> | M | L | H | M | H | H+ |
| Burr oak <i>Quercus macrocarpa</i> | H | M | H | L | H | H+ |
| Red oak <i>Quercus rubra</i> | H | M | M | L | H | H |
| Giant redwood <i>Sequoiadendron giganteum</i> | H | M | M | H | H | H |
| Japanese pagoda tree <i>Sophora japonica</i> | H | M | M | L | M | H |
| American basswood <i>Tilia americana</i> | H | H | M | L | M | H |
| Little-leaf linden <i>Tilia cordata</i> | H | H | M | L | M | H |
| Silver linden <i>Tilia tomentosa</i> | H | M | M | L | M | H |
| Caucasian lime <i>Tilia x euchlora</i> | H | M | M | L | M | H |
| Japanese zelkova <i>Zelkova serrata</i> | H | L | M | L | M | H |

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