

**Plants That Tolerate Shade\*****Trees**

*Amelanchier* - Serviceberry  
*Cercis Canadensis* – Eastern Redbud  
*Cornus mas* – Cornelian Cherry Dogwood  
*Hamamelis* - Witchhazel  
*Magnolia*  
*Acer palmatum* – Japanese Maple  
*Alnus glutinosa* – Black Alder  
*Carpinus caroliniana* – American Hornbeam  
*Carpinus betulus* – European Hornbeam  
*Chionanthus virginicus* – White Fringe Tree  
*Cornus alternifolia* – Pagoda Dogwood  
*Cornus florida* – Flowering Dogwood  
*Cornus kousa* – Kousa Dogwood  
*Crataegus crus-galli 'Inermis'* – Thornless Hawthorn  
*Crataegus viridis* – Green Hawthorn  
*Fagus sylvatica* – European Beech

**Shrubs**

*Aronia* - Chokeberry  
*Buxus* - Boxwood  
*Clethra* - Summersweet  
*Cornus racemosa* – Grey Dogwood  
*Cornus sericea* – Redosier Dogwood  
*Hydrangea quercifolia* – Oakleaf Hydrangea  
*Viburnum*  
*Corylus* - Hazelnut  
*Cotinus* - Smokebush  
*Cotoneaster*  
*Euonymus*  
*Fothergilla*  
*Hibiscus syriacus* – Rose of Sharon  
*Hypericum* – St. Johnswort  
*Itea* - Sweetspire  
*Kerria* – Japanese Kerria  
*Myrica* - Bayberry  
*Philadelphus* - Mockorange  
*Physocarpus* - Ninebark  
*Rhododendron* (deciduous azaleas)  
*Rhus* - Sumac  
*Ribes* – Alpine Currant

**Evergreens**

*Taxus* - Yew  
*Thuja* - Arborvitae  
*Tsuga canadensis* – Canadian Hemlock  
*Chamaecyparis* – False Cypress  
*Microbiota* – Carpet Cypress  
*Picea abies* – Norway Spruce  
*Pinus mugo* – Mugo Pine  
*Pinus strobus* – White Pine  
*Buxus* - Boxwood  
*Euonymus fortunei* - Euonymus  
*Ilex* - Holly  
*Mahonia* – Oregon Grape Holly  
*Rhododendron*

\*Not all plants listed will achieve maximum or ideal growth and vigor depending on the density of the shade conditions.

**Plants that Tolerate Wet Conditions****Trees**

*Alnus* - Alder  
*Amelanchier* - Serviceberry  
*Betula nigra* – River Birch  
*Fraxinus pennsylvanica* – Green Ash  
*Gleditsia* - Honeylocust  
*Gymnocladus* – Kentucky Coffee Tree  
*Hamamelis* - Witchhazel  
*Larix* - Larch  
*Platanus acerifolia* - Planetree  
*Populus* - Poplar  
*Quercus bicolor* – Swamp White Oak  
*Quercus palustris* – Pin Oak  
*Salix* - Willow  
*Taxodium* – Bald Cypress

**Shrubs**

*Aronia* - Chokeberry  
*Clethra* - Summersweet  
*Cornus racemosa* – Grey Dogwood  
*Cornus sericea* - Redosier Dogwood  
*Hypericum* – St. Johnswort  
*Myrica pennsylvanica* – Northern Bayberry  
*Viburnum dentatum* – Arrowwood Viburnum  
*Viburnum opulus* – European Viburnum  
*Viburnum trilobum* – Dwarf American Cranberry

**Evergreens**

*Thuja* - Arborvitae

**Plants that are Salt Tolerant\*****Trees**

*Acer platanoides* – Norway Maple  
*Amelanchier* - Serviceberry  
*Celtis* - Hackberry  
*Cercidiphyllum japonicum* - Katsura  
*Fraxinus* - Ash  
*Ginkgo*  
*Gleditsia* - Honeylocust  
*Gymnocladus* – Kentucky Coffee Tree  
*Hamamelis* - Witchhazel  
*Hypericum* – St. Johnswort  
*Larix* - Larch  
*Populus* - Poplar  
*Syringa reticulata* – Japanese Tree Lilac  
*Quercus* - Oak  
*Taxodium distichum* – Bald Cypress

**Shrubs**

*Aronia* - Chokeberry  
*Clethra* - Summersweet  
*Cotoneaster acutifolia* – Peking Cotoneaster  
*Hydrangea*  
*Philadelphus virginialis* - Mockorange  
*Potentilla*  
*Prunus x cistena* – Purpleleaf Plum  
*Rhus aromatica* – Gro-low Sumac  
*Ribes alpinum* – Alpine Currant  
*Rosa* (shrub types) - Rose  
*Viburnum dentatum* – Arrowwood Viburnum  
*Viburnum prunifolium* – Blackhaw Viburnum



## Evergreens

*Pinus mugo* – Mugo Pine  
*Pinus nigra* – Austrian Pine  
*Picea pungens* – Colorado Spruce

\*All de-icing products, when applied excessively, will damage or kill trees and shrubs.

## Plants That Tolerate Poor, Dry Soils

### Trees

*Acer ginnala* – Amur Maple  
*Betula* - Birch  
*Carpinus* - Hornbeam  
*Celtis* - Hackberry  
*Crataegus* - Hawthorn  
*Fraxinus* - Ash  
*Gleditsia* - Honeylocust  
*Gymnocladus* – Kentucky Coffee Tree  
*Syringa reticulata* – Japanese Tree Lilac  
*Viburnum prunifolium* – Blackhaw Viburnum

### Shrubs

*Aronia* - Chokeberry  
*Berberis* - Barberry  
*Cornus racemosa* – Grey Dogwood  
*Cotoneaster*  
*Juniperus* - Juniper  
*Myrica pennsylvanica* – Northern Bayberry  
*Philadelphus virginialis* - Mockorange  
*Physocarpus* - Ninebark  
*Potentilla*  
*Rhus* - Sumac  
*Ribes alpinum* – Alpine Currant  
*Rosa rugosa* – Rugosa Rose  
*Spiraea japonica* – Japanese Spirea  
*Syringa meyeri* – Dwarf Korean Lilac  
*Viburnum dentatum* – Arrowwood Viburnum

### Evergreens

*Pinus* - Pine

## Plants That Tolerate Urban Conditions\*

### Trees

*Acer ginnala* – Amur Maple\*\*  
*Celtis* - Hackberry\*\*  
*Chionanthus virginicus* – White Fringe Tree  
*Crataegus* - Hawthorn  
*Fraxinus* - Ash  
*Ginkgo*  
*Gleditsia* - Honeylocust  
*Gymnocladus* – Kentucky Coffee Tree  
*Hamamelis* - Witchhazel  
*Magnolia x soulangiana* – Saucer Magnolia  
*Magnolia stellata* – Star Magnolia  
*Malus* - Crabapple\*\*  
*Platanus* - Planetree  
*Pyrus calleryana* – Ornamental Pear  
*Taxodium distichum* – Bald Cypress  
*Tilia* - Linden

## Shrubs

*Aronia* - Chokeberry\*\*  
*Berberis* - Barberry  
*Clethra* - Summersweet  
*Cornus mas* – Cornelian Cherry Dogwood\*\*  
*Cornus racemosa* – Grey Dogwood  
*Cornus sericea* - Redosier Dogwood  
*Cotoneaster*  
*Euonymus*  
*Forsythia*\*\*  
*Myrica pennsylvanica* – Northern Bayberry  
*Ribes alpinum* – Alpine Currant  
*Spiraea x vanhouttei* – Vanhoutte Spirea  
*Viburnum dentatum* – Arrowwood Viburnum\*\*  
*Viburnum*  
*Weigela*  
*Yucca filamentosa* - Yucca

## Evergreens

*Pinus Nigra* – Austrian Pine  
*Taxus* - Yew  
*Juniperus* - Juniper

\* "Urban conditions" refers to the presence of higher levels of pollution due to soot, dust and carbon monoxide, and salt or de-icing products.

\*\* These plants are identified as being more tolerant of drying winds and rapid temperature changes created by building and street micro-climates.

## Trees Under 15' in Height

*Acer ginnala* – Amur Maple  
*Acer palmatum* – Japanese Maple  
*Amelanchier canadensis* – Shadblow Serviceberry  
*Betula nigra 'Little King'* – Fox Valley River Birch  
*Chionanthus virginicus* – White Fringe Tree  
*Cornus alternifolia* – Pagoda Dogwood  
*Hamamelis vernalis* – Vernal Witchhazel  
*Magnolia 'Ann'*  
*Magnolia 'Betty'*  
*Magnolia 'Jane'*  
*Magnolia 'Susan'*  
*Magnolia x soulangiana 'Alexandrina'* – Saucer Magnolia  
*Magnolia stellata 'Royal Star'* – Royal Star Magnolia  
*Malus floribunda* – Japanese Flowering Crabapple  
*Malus 'Ivazam'* – Ivanhoe Crabapple  
*Malus 'Lanzam'* – Lancelot Crabapple  
*Malus 'Louisa'* – Louisa Crabapple  
*Malus 'Pink Princess'* – Pink Princess Crabapple  
*Malus 'Prairifire'* – Prairifire Crabapple  
*Malus 'Red Jewel'* – Red Jewel Crab  
*Malus sargentii* – Sargent Crabapple  
*Malus sargentii 'Tina'* – Tina Crabapple  
*Malus 'Sutzam'* – Sugar Tyme Crabapple  
*Prunus subhirtella 'Snofozam'* – Snow Fountain Weeping Cherry  
*Syringa reticulata 'Ivory Silk'* – Ivory Silk Japanese Lilac  
*Viburnum prunifolium* – Blackhaw Viburnum

## Evergreens

*Picea abies 'Nidiformis'* – Birds Nest Spruce  
*Picea glauca 'Conica'* – Dwarf Alberta Spruce  
*Picea omorika 'Nana'* – Dwarf Serbian Spruce  
*Pinus strobus 'Nana'* – Dwarf White Pine  
*Pinus aristata* – Bristlecone Pine



## Calculations

	Mulch/Stone	Compacted Topsoil	Depth		
One Cubic Yard will cover	324 sq. ft.	240 sq. ft.	1" Deep	18 (40#) Bags of Mushroom Compost - 1 cu. yd.	
	162 sq. ft.	120 sq. ft.	2" Deep		
	108 sq. ft.	80 sq. ft.	3" Deep		
	81 sq. ft.	60 sq. ft.	4" Deep		
	69 sq. ft.	51 sq. ft.	5" Deep		
	62 sq. ft.	46 sq. ft.	6" Deep		
1.5 cubic foot bag will cover	18 sq. ft.		1" Deep	39 (40#) Bags of Topsoil = 1 cu. yd.	
	9 sq. ft.		2" Deep		
	4.5 sq. ft.		4" Deep		
2.0 cubic foot bag will cover	24 sq. ft.		1" Deep	9 (3 cu. ft.) Bags of Mulch = 1 cu. yd.	
	12 sq. ft.		2" Deep		
	6 sq. ft.		4" Deep		
3 cubic foot bag will cover	36 sq. ft.		1" Deep	Sod Measurements (24" X 60")	
	18 sq. ft.		2" Deep		Length x Width = sq. ft. Divide sq. ft. by 10 = Rolls of Sod
	9 sq. ft.		4" Deep		
50lb bag/stone will cover	5 sq. ft.		1" Deep	Area of Circle	
1 Bale of Straw	1000 sq. ft.	1/2" Deep		Radius x Radius x 3.14	
40# bag topsoil	8 sq. ft.		1" Deep	Circumference of Circle	
				2 x Radius x 3.14	
				Area	
				Length x Width = Area	
				1 cu. yard	
				27 cu. feet	

## Ball Weight Guide

Weight lbs.	Ball Diameter	Caliper	Plant Height	Plant Width	Intermediates & Heavy Clumps	Column Clumps & Evergreens	Heavy Evergreens
37	10"		18"	12"			
50	12"		24"	15"			
88	13"		30"	18"			
94	14"		3'	24"			
100	15"		4'				
135	16"		5'	30"		3'	
195	18"				4'	4'	
260	20"			3'		5'	
325	22"				5'	6'	
390	24"	2.0"				7'	5'
500	26"				6'		
580	28"	2.5"				8'	6'
725	30"					9'	7'
850	32"	3.0"			7'	10'	
1010	34"					12'	8'
1160	36"						
1380	38"	3.5"			8'	14'	10'
1600	40"				9'		
1815	42"	4.0"			10'	16'	12'
2030	44"						
2570	48"	4.5"			12'	18'	
2790	50"						
3920	54"	5.0"			14'	20'	
4750	57"	5.5"					
5600	60"	6.0"					
7800	70"	7.0"					
11000	80"	8.0"					

