

# PLANT CANOPY CALCULATIONS

## LARGE DECIDUOUS TREES (50'-70') (Shade and/or Street)

Botanical Name	Common Name	Minimum Caliper or Height (Min. Cal./Ht.)	Height at Planting (x)	Growth over 10 Years (Y)	Total Height In 10 Years X + Y = T	Ratio of Width to Height (R)	Total Width In 10 Years (R) T = D	Area of Canopy (D) <sup>2</sup> * 3.14/4 =
Acer nigrum & cvs.	Black Maple	(1½" - 1¾" Cal.)	10	12	22	0.66	14.52	166
Acer rubrum & cvs.	Red (Swamp) Maple (Oct. Glory, Red Sunset)	(1½" - 1¾" Cal.)	10	20	30	0.75	22.5	397
Acer rubrum "Armstrong"	"Armstrong" Red Maple	(1½" - 1¾" Cal.)	10	20	30	0.25	7.5	44
Acer saccharum & cvs.	Sugar Maple (Bonfire, Commemoration, Green Mountain, Legacy)	(1½" - 1¾" Cal.)	11	10	21	0.75	15.75	195
Acer x freemanii "Jeffersred"	Autumn Blaze Maple	(1½" - 1¾" Cal.)	10	20	30	0.75	22.5	397
Aesculus hippocastanum	Common Horsechestnut	(1½" - 1¾" Cal.)	12	16	28	0.90	25.2	499
Betula nigra "Heritage"	"Heritage" River Birch	(10'-12' ht.)	10	15	25	0.90	22.5	397
Carya glabra	Pignut Hickory	(1½" - 1¾" Cal.)	11	5	16	0.55	8.8	61
Carya ovata	Shagbark Hickory	(1½" - 1¾" Cal.)	11	5	16	0.60	9.6	72
Celtis x occidentalis & cvs.	Hackberry (Magnifica, Prairie Pride)	(1½" - 1¾" Cal.)	10	20	30	0.90	27	572
Diospyros virginiana	Persimmon	(1½" - 1¾" Cal.)	11	8	18.5	0.75	13.875	151
Fagus grandifolia	American Beech	(1½" - 1¾" Cal.)	10	10	20	0.85	17	227
Fagus sylvatica & cvs.	European Beech	(1½" - 1¾" Cal.)	10	10	20	0.75	15	177
Fraxinus americana & cvs.	White Ash (Autumn Purple)	(1½" - 1¾" Cal.)	12	15	27	0.75	20.25	322
Fraxinus americana "Rosehill"	"Rosehill" White Ash	(1½" - 1¾" Cal.)	12	15	27	0.50	13.5	143
Fraxinus americana "Greenspire"	"Greenspire" White Ash	(1½" - 1¾" Cal.)	12	15	27	0.25	6.75	36
Fraxinus pennsylvanica & cvs.	Green Ash (Newport, Patmore, Summit, Urbanite)	(1½" - 1¾" Cal.)	12	25	37	0.75	27.75	604
Ginkgo biloba "Magyar"	"Magyar" Ginkgo	(1½" - 1¾" Cal.)	11	10	21	0.50	10.5	87
Ginkgo biloba "Princeton Sentry"	"Princeton Sentry" Ginkgo	(1½" - 1¾" Cal.)	11	10	21	0.20	4.2	14
Gleditsia triacanthos inermis & cvs.	Thornless Honeylocust	(1½" - 1¾" Cal.)	11	20	31	0.75	23.25	424
Gymnocladus dioicus & cvs.	Kentucky Coffeetree (Crosswicks Male)	(1½" - 1¾" Cal.)	10	25	35	0.77	26.95	570
Halesia monticola	Mountain Silverbell	(1½" - 1¾" Cal.)	10	15	25	0.66	16.5	214
Liquidambar styraciflua	Sweetgum	(1½" - 1¾" Cal.)	12	15	27	0.66	17.82	249
Liquidambar styraciflua "Rotundiloba"	"Rotundiloba" Sweetgum	(1½" - 1¾" Cal.)	12	15	27	0.60	16.2	206
Liriodendron tulipifera	Tuliptree or Tulip Poplar	(1½" - 1¾" Cal.)	12	25	37	0.60	22.2	387
Magnolia acuminata	Cucumbertree Magnolia	(1½" - 1¾" Cal.)	10	20	30	0.60	18	254
Metasequoia glyptostroboides	Dawn Redwood	(10' - 12' ht.)	10	25	35	0.25	8.75	60
Nyssa sylvatica	Blackgum Tree	(1½" - 1¾" Cal.)	11	8	19	0.66	12.54	123
Platanus x acerifolia & cvs.	London Planetree (Bloodgood)	(1½" - 1¾" Cal.)	11	18	28.5	0.76	21.66	368
Platanus occidentalis	American Planetree (Sycamore)	(1½" - 1¾" Cal.)	12	35	47	0.85	39.95	1253
Quercus alba	White Oak	(1½" - 1¾" Cal.)	10	12	22	0.80	17.6	243
Quercus bicolor	Swamp White Oak	(1½" - 1¾" Cal.)	11	20	31	0.63	19.53	299
Quercus coccinea	Scarlet Oak	(1½" - 1¾" Cal.)	11	20	31	0.70	21.7	370
Quercus falcata	Southern Red Oak	(1½" - 1¾" Cal.)	11	20	31	0.75	23.25	424
Quercus imbricaria	Shingle Oak	(1½" - 1¾" Cal.)	10	10	20	0.66	13.2	137
Quercus palustris	Pin Oak	(1½" - 1¾" Cal.)	11	20	31	0.70	21.7	370
Quercus palustris "Green Pillar"	Pin Oak (Green Pillar)	(1½" - 1¾" Cal.)	11	20	31	0.20	6.2	30
Quercus phellos	Willow Oak	(1½" - 1¾" Cal.)	11	20	31	0.70	21.7	370
Quercus prinus	Chesnut Oak	(1½" - 1¾" Cal.)	10	10	20	0.70	14	154
Quercus robur	English Oak	(1½" - 1¾" Cal.)	11	20	31	0.66	20.46	329
Quercus robur & cvs.	English Oak (Fastigate, Attention!, Skyrocket)	(1½" - 1¾" Cal.)	11	10	21	0.20	4.2	14
Quercus rubra	Northern Red Oak	(1½" - 1¾" Cal.)	11	20	31	0.75	23.25	424
Quercus shumardii	Shumard Oak	(1½" - 1¾" Cal.)	11	20	31	0.66	20.46	329
Salix alba & cvs.	Golden Weeping Willow	(1½" - 1¾" Cal.)	10	30	40	0.85	34	907
Taxodium distichum & cvs.	Bald Cypress (Shawnee Brave)	(10' - 12' ht.)	10	15	25	0.40	10	79
Tilia americana "Redmond"	"Redmond" Linden	(1½" - 1¾" Cal.)	11	15	26	0.60	15.6	191
Tilia cordata "Greenspire"	"Greenspire" Littleleaf Linden	(1½" - 1¾" Cal.)	12	15	27	0.66	17.82	249
Tilia tomentosa "Green Mountain"	"Green Mountain" Silver Linden	(1½" - 1¾" Cal.)	10	15	25	0.75	18.75	276
Ulmus americana & cvs.	American Elm (Princeton, Washington)	(1½" - 1¾" Cal.)	10	15	25	0.90	22.5	397
Ulmus parvifolia "Allee"	"Allee" Elm	(1½" - 1¾" Cal.)	12	15	27	0.80	21.6	366
Zelkova serrata "Green Vase"	"Green Vase" Zelkova	(1½" - 1¾" Cal.)	12	20	32	0.66	21.12	350
Zelkova serrata "Village Green"	"Village Green" Zelkova	(1½" - 1¾" Cal.)	12	20	32	0.75	24	452

<b>MEDIUM DECIDUOUS TREES (40'-50')</b>								
<i>Botanical Name</i>	<i>Common Name</i>	<i>Minimum Caliper or Height</i>	<i>Height at Planting</i>	<i>Growth over 10 Years</i>	<i>Total Height In 10 Years</i>	<i>Ratio of Width to Height</i>	<i>Total Width In 10 Years</i>	<i>Area of Canopy</i>
		<i>(Min. Cal./Ht.)</i>	<i>(x)</i>	<i>(Y)</i>	<i>X + Y = T</i>	<i>(R)</i>	<i>(R) T = D</i>	<i>(D)^2 * 3.14/4 =</i>
Acer rubrum & cvs.	Red Maple (Autumn Flame, Bowhall)	(1½" – 1¾" Cal.)	10	10	20	0.75	15	177
Acer saccharum "Goldspire"	"Goldspire" Sugar Maple	(1½" – 1¾" Cal.)	10	20	30	0.50	15	177
Acer truncatum x platanoides "Keithsform"	Norwegian Sunset Maple	(1" – 1¼" Cal.)	8	10	18	0.66	11.88	111
Aesculus carnea	Red Horsechestnut	(1" – 1¼" Cal.)	8	13	21	0.66	13.86	151
Carpinus betulus	European Hornbeam	(1½" – 1¾" Cal.)	10	10	20	0.75	15	177
Celtis laevigata "All Seasons"	"All Seasons" Sugar Hackberry	(1½" – 1¾" Cal.)	10	20	30	0.75	22.5	397
Cercidiphyllum japonicum	Katsuratree	(1" – 1¼" Cal.)	8	20	28	0.60	16.8	222
Corylus columna	Turkish Filbert	(1" – 1¼" Cal.)	9	18	26.5	0.50	13.25	138
Salix nigra	Black Willow		10	30	40	0.75	30	707
Sassafras albidum	Common Sassafras	(1" – 1¼" Cal.)	9	15	24	0.66	15.84	197
Sophora japonica "Princeton Upright"	"Princeton Upright" Scholartree	(1" – 1¼" Cal.)	8	20	28	0.70	19.6	302
Sophora japonica "Regent"	"Regent" Scholartree	(1" – 1¼" Cal.)	8	20	28	0.80	22.4	394
<b>SMALL DECIDUOUS TREES (20'-40') (Street and/or under utility lines)</b>								
Acer buergerianum	Trident Maple	(6'-8' ht.)	7	7	14	0.90	12.6	125
Acer campestre & cvs.	Hedge Maple(Evelyn)	(6'-8' ht.)	7	12	19	0.90	17.1	230
Carpinus betulus "Fastigiata"	Pyramidal European Hornbeam	(6'-8')	7	10	17	0.55	9.35	69
Carpinus caroliniana	American Hornbeam	(6'-8')	7	9	16	0.80	12.8	129
Cladrastis kentukea (lutea) & cvs.	Yellowwood (Perkin's Pink, Sweetshade)	(1" – 1¼" Cal.)	9	15	24	0.80	19.2	289
Crataegus crusgalli var. inermis	Thornless Cockspur Hawthorn	(6'-8')	7	10	17	0.90	15.3	184
Crataegus laevigata (oxyacantha)	Paul's Scarlet English Hawthorn	(6'-8')	7	7	14	0.90	12.6	125
Crataegus phaenopyrum	Washington Hawthorn	(6'-8')	7	10	17	0.80	13.6	145
Crataegus viridis "Winter King"	"Winter King" Hawthorn	(6'-8')	7	10	17	0.90	15.3	184
Koelreuteria paniculata	Goldenraintree	(6'-8')	7	15	22	1.00	22	380
Maackia amurensis & cvs.	"Starburst" Amur Maackia	(6'-8')	7	5	12	0.90	10.8	92
Malus baccata "Walters"	"Walters" Siberian Crabapple	(6'-8')	7	10	17	0.66	11.22	99
Ostrya virginiana	American Hophornbeam	(6'-8')	7	10	17	0.66	11.22	99
Oxydendrum arboreum	Sourwood	(6'-7')	7	12	18.66	0.71	13.2486	138
Phellodendron amurense "Shademaster"	"Shademaster" Amur Corktree	(6'-7')	7	15	22	0.90	19.8	308
Pistacia chinensis	Chinese Pistache	(6'-7')	7	10	17	0.90	15.3	184
Prunus cerasifera & cvs.	Flowering Plum (Krauter Vesuvius, Thundercloud, Newport)	(6'-7')	7	8	15	0.90	13.5	143
Prunus incisa x Campanulata	"Okame" Flowering Cherry	(6'-7')	7	8	15	0.75	11.25	99
Prunus sargentii & cvs.	Sargent Cherry (Columnar)	(6'-7')	7	10	17	0.75	12.75	128
Prunus serrulata & cvs.	Japanese Flowering Cherry	(6'-7')	7	7	14	0.75	10.5	87
Prunus x subhirtella "Accolade"	"Accolade" Flowering Higan Cherry	(6'-7')	7	7	14	0.66	9.24	67
Prunus yeodensis & cvs.	Yoshino Flowering Cherry (Afterglow, Akebono)	(6'-7')	7	8	15	0.75	11.25	99
Pyrus calleryana & cvs.	Pear (Aristocrat, Autumn Blaze, Capital, Chanticleer, Redspire)	(6'-8')	7	12	19	0.70	13.3	139
Sorbus alnifolia & cvs.	Korean Mountainash (Redbird)	(6'-8')	7	8	15	0.60	9	64

ORNAMENTAL TREES (20'-40')								
Botanical Name	Common Name	Minimum Caliper or Height (Min. Cal./Ht.)	Height at Planting (x)	Growth over 10 Years (Y)	Total Height In 10 Years X + Y = T	Ratio of Width to Height (R)	Total Width In 10 Years (R) T = D	Area of Canopy (D)^2* 3.14/4=
Acer griseum	Paperbark Maple	(6'- 8' ht.)	7	9	16	0.66	10.56	88
Amelanchier canadensis & cvs.	Shadblow Serviceberry (White Pillar)	(6'-7' ht.; clump)	7	13	19.5	0.66	12.87	130
Amelanchier x grandiflora & cvs	Serviceberry (Autumn Brilliance, Robin Hill)	(6'-7' ht.; clump)	7	13	19.5	0.66	12.87	130
Amelanchier laevis & cvs.	Allegheny Serviceberry (Cumulus, Majestic)	(6'-7' ht.; clump)	7	13	19.5	0.66	12.87	130
Betula jacquemontii	White-Barked Himalayan Birch	(6'-7')	7	15	22	0.60	13.2	137
Betula platyphylla "Whitespire"	"Whitespire" Asian White Birch	(6'-7" ht.; clump)	7	15	22	0.60	13.2	137
Catalpa bignoides	Southern Catalpa	(6'-8' ht.)	7	15	22	0.90	19.8	308
Cercis canadensis & cvs.	Eastern Redbud (Alba, Forest Pansy, Oklahoma White, Texas White)	(6'-7')	7	10	17	0.74	12.58	124
Cornus florida & cvs.	Flowering Dogwood (Cherokee Princess & Chief, Cloud Nine, Rubra,	(6'-7' ht.)	7	10	17	0.74	12.58	124
Cornus kousa & cvs.	Kousa Dogwood (Celestial, Constellation, Heart Throb, Rosabella, Summer	(6'-7' ht.)	7	8	15	0.85	12.75	128
Cornus x (Rutban, Rutcan, Rutdan,	Rutgers Series Flowering Dogwood	(6'-7' ht.)	7	10	17	0.74	12.58	124
Halesia carolina & cvs.	Carolinia Silverbell (Rosea)	(6'-8')	7	12	19	0.66	12.54	123
Halesia diptera "Magniflora"	Two-Winged Silverbell	(6'-8')	7	10	17	0.75	12.75	128
Magnolia grandiflora & cvs.	Southern Magnolia (Edith Bogue, Victoria, Little Gem)	(6'-8')	7	10	17	0.60	10.2	82
Magnolia x loebneri & cvs.	Loebner Magnolia (Ballerina, Leonard Messel, Merrill)	(6'-8')	7	8	15	0.70	10.5	87
Magnolia x soulangiana & cvs.	Saucer Magnolia (Alexandrina, Jane, Verbanica)	(6'-8')	7	10	17	0.80	13.6	145
Parrotia persica	Persian Parrotia	(6'-8')	7	12	19	0.75	14.25	159
Prunus corinthian & cvs.	Flowering Peach (Mauve, Rose)	(6'-8')	7	8	15	0.75	11.25	99
Prunus subhirtella 'Autumnalis'	Autumn Flowering Higan Cherry	(6'-8')	7	8	15	0.66	9.9	77
Prunus subhirtella 'Pendula Rosa'	Weeping Cherry	(6'-8')	7	8	15	0.66	9.9	77
Salix babylonica	Babylon Weeping Willow	(6'-8')	7	10	17	0.80	13.6	145
Stewartia koreana	Korean Stewartia	(6'-8')	7	7	14	0.66	9.24	67
Stewartia pseudocamellia	Japanese Stewartia	(6'-8')	7	8	15	0.66	9.9	77
Syringa reticulata & cvs.	Japanese Tree Lilac (Ivory Silk, Regent)	(6'-8')	8	10	18	0.75	13.5	143

<b>SMALL ORNAMENTAL TREES (10'-20')</b>								
<i>Botanical Name</i>	<i>Common Name</i>	<i>Minimum Caliper or Height</i>	<i>Height at Planting</i>	<i>Growth over 10 Years</i>	<i>Total Height In 10 Years</i>	<i>Ratio of Width to Height</i>	<i>Total Width In 10 Years</i>	<i>Area of Canopy</i>
		<i>(Min. Cal./Ht.)</i>	<i>(x)</i>	<i>(Y)</i>	<i>X + Y = T</i>	<i>(R)</i>	<i>(R) T = D</i>	<i>(D)^2 * 3.14/4 =</i>
Acer ginnala "Flame"	"Flame" Amur Maple	(6'-7')	6	12	18	0.90	16.2	206
Acer palmatum	Japanese Maple	(6'-7')	6	10	16	0.90	14.4	163
Acer tataricum	Tartarian Maple	(6'-7')	6	7	13	0.90	11.7	107
Catalpa bungei	Umbrella Catalpa	(6'-7')	6	10	16	0.90	14.4	163
Chionanthus retusus	Chinese Fringetree	(6'-7')	6	6	12	0.90	10.8	92
Chionanthus virginicus	White Fringetree	(6'-7')	6	8	14	0.90	12.6	125
Cornus mas	Corneliancherry Dogwood	(6'-7')	6	10	16	0.75	12	113
Cotinus coggygia & cvs.	Royal Purple Smoketree	(6'-7')	6	10	16	0.90	14.4	163
Enkianthus campanulatus	Redvein Enkianthus	(6'-7')	6	7	13	0.65	8.45	56
Franklinia altamaha	Franklinia	(6'-7')	6	10	16	0.70	11.2	98
Hamamelis virginiana	Common Witchhazel	(6'-7')	6	10	16	0.75	12	113
Laburnum x watereri	Goldenchain Tree	(6'-7')	7	10	17	0.65	11.05	96
Lagerstroemia indica x cvs.	Crapemyrtle	(6'-7')	6	9	15	0.66	9.9	77
Magnolia liliiflora	Magnolia (Ann, Betty, Galaxy, Jane)	(6'-7')	6	2	8	0.75	6	28
Magnolia stellata & cvs.	Star Magnolia (Royal Star, Waterlily)	(6'-7')	6	6	12	0.66	7.92	49
Magnolia virginiana	Sweet Bay Magnolia	(6'-7')	6	10	16	0.75	12	113
Malus floribunda	Japanese Flowering Crabapple	(6'-7')	6	8	14	0.70	9.8	75
Malus hupehensis & cvs.	Tea Crabapple (Cardinal, Strawberry Parfait)	(6'-7')	6	10	16	0.80	12.8	129
Malus sargentii	Sargent Crabapple	(6'-7')	6	2	8	0.90	7.2	41
Malus & cvs.	Crabapple (Indian Summer, Narragansett, Pink Spires, Prairiefire, Red Baron, Snowdrift, Sutyzarr)	(6'-7')	7	9	16	0.80	12.8	129
Malus transitoria "Schmidtcutleaf"	"Golden Raindrops" Crabapple	(6'-7')	7	8	15	0.75	11.25	99
Malus zumi calocarpa	Zumi Crabapple	(6'-7')	7	9	16	0.75	12	113
Pyrus fauriei "Westwood"	Korean Sun Flowering Pear	(6'-7')	6	10	16	0.70	11.2	98
Stewartia ovata	Mountain Stewartia	(6'-7')	6	10	16	0.75	12	113
Styrax japonica	Japanese Snowbell	(6'-7')	7	8	15	0.73	10.95	94
Viburnum prunifolium	Blackhaw Viburnum	(6'-7')	7	8	15	0.73	10.95	94
Viburnum sieboldii	Siebold viburnum	(6'-7')	6	8	14	0.66	9.24	67

**BROADLEAVED EVERGREENS (Screening) AND ORNAMENTAL CONIFERS (20'-70')**

<i>Botanical Name</i>	<i>Common Name</i>	<i>Minimum Caliper or Height (Min. Cal./Ht.)</i>	<i>Height at Planting (x)</i>	<i>Growth over 10 Years (Y)</i>	<i>Total Height In 10 Years X + Y = T</i>	<i>Ratio of Width to Height (R)</i>	<i>Total Width In 10 Years (R) T = D</i>	<i>Area of Canopy (D)<sup>2</sup> 3.14/4=</i>
Abies concolor	White Fir, Concolor Fir	(4'-5')	5	10	15	0.50	7.5	44
Cedrus atlantica "Glauca"	Blue Atlas Cedar	(4'-5')	4.5	10	14.5	0.50	7.25	41
Cedrus deodara	Deodar Cedar	(4'-5')	4.5	20	24.5	0.55	13.475	143
Cedrus libani	Cedar of Lebanon	(4'-5')	4.5	10	14.5	0.65	9.425	70
Chamaecyparis lawsoniana	Lawson Falsecypress	(4'-5')	4.5	20	24.5	0.55	13.475	143
Cryptomeria japonica & cvs.	Cryptomeria (Black Dragon, Yoshino, Ben Franklin)	(4'-5')	5	20	25	0.50	12.5	123
X Cupressocyparis leylandii	Leyland Cypress	(4'-5')	4.5	20	24.5	0.22	5.39	23
Cupressus arizonica "Carolina Sapphire"	Blue Arizona Cypress	(4'-5')	5	10	15	0.50	7.5	44
Ilex opaca & cvs.	American Holly	(4'-5')	4.5	10	14.5	0.58	8.41	56
Ilex x aquipernyi 'San Jose'	San Jose Holly	(4'-5')	5	10	15	0.63	9.375	69
Ilex x attenuata 'Fosteri'	Foster Holly	(4'-5')	4.5	10	14.5	0.31	4.495	16
Ilex x 'Nellie R. Stevens'	Nellie R. Stevens Holly	(4'-5')	2	10	12	0.63	7.5	44
Juniperus virginiana & cvs.	Eastern Redcedar	(4'-5')	4.5	10	14.5	0.31	4.495	16
Larix decidua	European Larch	(4'-5')	5	20	25	0.40	10	79
Magnolia grandiflora	Southern Magnolia	(4'-5')	4.5	10	14.5	0.57	8.265	54
Picea abies	Norway Spruce	(4'-5')	4.5	10	14.5	0.50	7.25	41
Picea glauca	White Spruce	(4'-5')	4.5	10	14.5	0.30	4.35	15
Picea orientalis	Oriental Spruce	(4'-5')	5	10	15	0.40	6	28
Picea omorika	Serbian Spruce	(4'-5')	5	10	15	0.40	6	28
Picea pungens var. glauca	Colorado Blue Spruce	(4'-5')	4.5	10	14.5	0.30	4.35	15
Pinus bungeana	Lacebark Pine	(4'-5')	4.5	8	12.5	0.66	8.25	53
Pinus cembra	Swiss Stone Pine	(4'-5')	4.5	10	14.5	0.50	7.25	41
Pinus densiflora	Japanese Red Pine	(4'-5')	5	12	17	0.75	12.75	128
Pinus flexilis	Limber Pine	(4'-5')	4.5	10	14.5	0.50	7.25	41
Pinus parviflora	Japanese White Pine	(4'-5')	4.5	10	14.5	0.80	11.6	106
Pinus resinosa	Red Pine	(4'-5')	5	12	17	0.75	12.75	128
Pinus strobus	Eastern White Pine	(4'-5')	4.5	20	24.5	0.50	12.25	118
Pinus sylvestris	Scotch Pine	(4'-5')	4.5	12	16.5	0.65	10.725	90
Pinus taeda	Loblolly Pine	(4'-5')	5	20	25	0.65	16.25	207
Pinus thunbergiana	Japanese Black Pine	(4'-5')	4.5	11	15	0.90	13.5	143
Taxodium distichum	Bald Cypress	(4'-5')	5	12	17	0.40	6.8	36
Taxus baccata	English Yew	(4'-5')	4.5	8	12.5	0.62	7.75	47
Taxus cuspidata "Capitata"	Upright Japanese Yew	(4'-5')	4.5	8	12.5	0.62	7.75	47
Thuja occidentalis & cvs.	Eastern Arborvitae (Emerald, Nigra, Techny)	(4'-5')	4.5	10	14.5	0.25	3.625	10
Thuja orientalis & cvs.	Oriental Arborvitae (Berckman's, Bonita)	(4'-5')	4.5	10	14.5	0.30	4.35	15
Thuja plicata & cvs.	Giant Arborvitae (Atrovirens, Green Giant)	(4'-5')	4.5	10	14.5	0.20	2.9	7

<b>BROADLEAVED EVERGREEN/ SEMI-EVERGREEN SHRUBS (Screening) (3'-15')</b>								
<i>Botanical Name</i>	<i>Common Name</i>	<i>Minimum Caliper or Height</i>	<i>Height at Planting</i>	<i>Growth over 10 Years</i>	<i>Total Height In 10 Years</i>	<i>Ratio of Width to Height</i>	<i>Total Width In 10 Years</i>	<i>Area of Canopy</i>
		(Min. Cal./Ht.)	(x)	(Y)	X + Y = T	(R)	(R) T = D	(D)^2* 3.14/4=
Abelia grandiflora	Glossy Abelia	(1½'-2½')	2	3	5	0.85	4.25	14
Aucuba japonica	Japanese Aucuba	(1½'-2½')	2	4	6	0.85	5.1	20
Berberis julianae	Wintergreen Barberry	(1½'-2½')	2	3	5	0.85	4.25	14
Berberis verruculosa	Warty Barberry	(1½'-2½')	2	3	5	0.50	2.5	5
Berberis x gladwynensis "William Penn"	"William Penn" Barberry	(1½'-2½')	2	2	4	0.50	2	3
Buxus microphylla & cvs.	Littleleaf Box (Green Beauty, Wintergreen)	(1½'-2½')	2	1	3	0.75	2.25	4
Buxus sempervirens & cvs.	American Boxwood (Myer's, Graham Blandy)	(1½'-2½')	2	3	5	0.75	3.75	11
Buxus sempervirens "Suffruticosa"	Dwarf English Boxwood	(1½'-2½')	2	2	4	0.90	3.6	10
Buxus & cvs.	Boxwood (Green Mountain, Green Velvet)	(1½'-2½')	2	2	4	0.90	3.6	10
Cotoneaster dammeri & cvs.	Bearberry Cotoneaster (Coral Beauty)	(1½'-2½')	1	1	2	0.90	1.8	3
Cotoneaster salicifolius	Willowleaf Cotoneaster	(1½'-2½')	2	5	7	0.75	5.25	22
Daphne cneorum	Rose Daphne	(1½'-2½')	2	4	6	0.90	5.4	23
Daphne odora	Fragrant Daphne	(1½'-2½')	2	2	4	0.90	3.6	10
Daphne x burkwoodii "Somerset"	"Somerset Daphne"	(1½'-2½')	2	2	4	0.90	3.6	10
Hypericum calycinum	Aaronsbeard St. Johnswort	(1½'-2½')	2	2	4	0.90	3.6	10
Ilex cornuta "Burfordii"	Burford Holly	(1½'-2½')	2	8	10	0.85	8.5	57
Ilex cornuta & cvs.	Chinese Holly (Dwarf Burford, Carissa, Rotunda)	(1½'-2½')	2	3	5	0.85	4.25	14
Ilex crenata & cvs.	Japanese Holly (Compact, Green Luster, Helleri, Hoogendorn, Soft Touch)	(1½'-2½')	2	3	5	0.90	4.5	16
Ilex crenata & cvs.	Japanese Holly (Bullata 151, Steeds, Nigra)	(1½'-2½')	2	2	4	0.90	3.6	10
Ilex glabra & cvs.	Inkberry Holly (Compacta, Nigra, Shamrock)	(1½'-2½')	2	4	6	0.90	5.4	23
Ilex vomitoria	Yaupon	(1½'-2½')	2	10	12	0.75	9	64
Ilex x aquipernyi "Dragon Lady"	"Dragon Lady" Holly	(1½'-2½')	2	10	12	0.65	7.8	48
Ilex x meserveae & cvs.	Meserve Holly (Blue Princess/ Prince, Blue Stallion, China Boy/ Girl)	(1½'-2½')	3	3	6	0.90	5.4	23
Jasminum nudiflorum	Winter Jasmine	(1½'-2½')	2	2	4	0.90	3.6	10
Juniperus chinensis & cvs.	Chinese Juniper (Kallys Compact, Compact Pfitzer, Blue Pfitzer, Hetz, Sea)	(1½'-2½')	3	2	5	0.75	3.75	11
Juniperus scopulorum "Wichita Blue"	"Wichita Blue" Juniper	(1½'-2½')	3	2	5	0.75	3.75	11
Kalmia latifolia	Mountain Laurel (Elf, Kaufman's Pink, Olympic Fire)	(1½'-2½')	2	2	4	1.50	6	28
Leucothoe axillaris	Coast Leucothoe	(1½'-2½')	2	2	4	1.50	6	28
Leucothoe fontanesiana (catasbaei)	Drooping Leucothoe	(1½'-2½')	2	3	5	0.75	3.75	11
Ligustrum japonicum	Japanese Privet	(1½'-2½')	2	4	6	0.80	4.8	18
Mahonia aquifolium	Oregon Hollygrape	(1½'-2½')	2	2	4	0.40	1.6	2
Mahonia bealei	Leatherleaf Mahonia	(1½'-2½')	2	4	6	0.50	3	7
Myrica cerifera & cvs.	Southern Wax Myrtle	(1½'-2½')	3	7	10	0.75	7.5	44
Myrica pensylvanica	Northern Bayberry	(1½'-2½')	3	3	6	0.80	4.8	18
Nandina domestica	Nandina or Heavenly Bamboo	(1½'-2½')	2	5	7	0.66	4.62	17
Osmanthus heterophyllus & cvs.	Holly Osmanthus	(1½'-2½')	2	8	10	0.85	8.5	57
Osmanthus x fortunei	Fortune's Osmanthus	(1½'-2½')	5	10	15	0.75	11.25	99
Photinia x frazeri	Red Photinia	(1½'-2½')	2	8	10	0.50	5	20
Picea abies 'Little Gem'	Dwarf Norway Spruce	(1½'-2½')	2	1	3	0.65	1.95	3
Picea abies 'Nidiformis'	Birds Nest Spruce	(1½'-2½')	2	3	5	0.66	3.3	9
Pieris floribunda	Mountain Pieris	(1½'-2½')	2	3	5	0.85	4.25	14
Pieris japonica & cvs.	Japanese Pieris (Dorothy Wycoff, Mountain Fire, Snowdrift, Valentine)	(1½'-2½')	3	6	9	0.75	6.75	36
Pinus mugo	Mugo Dwarf Mountain Pine	(1½'-2½')	3	9	12	0.90	10.8	92
Prunus laurocerasus & cvs.	Cherry Laurel (Otto Luyken, Schipkaensis)	(1½'-2½')	2	2	4	0.90	3.6	10
Pyracantha 'Lowboy'	Lowboy Firethorn	(1½'-2½')	2	1	3	0.90	2.7	6
Pyracantha x cvs.	Firethorn (Fiery Cascade, Mohave, Navaho, Rutgers)	(1½'-2½')	2	7	9	0.90	8.1	52
Pyracantha coccinea 'Lalandei'	Orange Laland Firethorn	(1½'-2½')	2	6	8	0.75	6	28
Rhododendron spp.	Azalea (Glenn Dale, Gable, Girard, Kurume, Satauki)	(1½'-2½')	2	2	4	0.90	3.6	10
Rhododendron spp.	Rhododendron (Catawba, Fortune's, PJM, Rosebay, Scintillation)	(1½'-2½')	3	5	8	0.50	4	13
Sarcococca Hookerana var. humilis	Dwarf Himalayan Sweet Box	(1½'-2½')	2	2	4	0.90	3.6	10
Sarcococca ruscifolia	Sweet Box	(1½'-2½')	2	1	3	0.90	2.7	6
Skimmia japonica	Japanese Skimmia	(1½'-2½')	2	1	3	0.90	2.7	6
Taxus baccata "Repandens"	English Spreading Yew	(1½'-2½')	2	2	4	1.50	6	28
Taxus cuspidata & cvs.	Japanese Yew (Hunneywelliana, Intermedia, Sieboldii)	(1½'-2½')	2	4	6	1.60	9.6	72

Botanical Name	Common Name	Minimum Caliper or Height	Height at Planting	Growth over 10 Years	Total Height In 10 Years	Ratio of Width to Height	Total Width In 10 Years	Area of Canopy
		(Min. Cal./Ht.)	(x)	(Y)	X + Y = T	(R)	(R) T = D	(D) <sup>2</sup> * 3.14/4 =
Taxus x media & cvs.	Anglojap Yew (Brown's, Cedar Hill, Densiformis, Hatfield, Hick's, Kelsey,	(1½'-2½')	2	1	3	0.65	1.95	3
Viburnum x burkwoodii	Burkwood Viburnum	(1½'-2½')	4	4	8	0.66	5.28	22
Viburnum x pragense	Prague Viburnum	(1½'-2½')	5	5	10	0.75	7.5	44
Viburnam rhytidophyllum "Alleghany"	"Alleghany" Viburnam	(1½'-2½')	5	5	10	0.90	9	64
Viburnum utile "Conoy"	"Conoy" Viburnum	(1½'-2½')	2	2	4	1.20	4.8	18

<i>DECIDUOUS SHRUBS (3'-30')</i>								
<i>Botanical Name</i>	<i>Common Name</i>	<i>Minimum Caliper or Height</i>	<i>Height at Planting</i>	<i>Growth over 10 Years</i>	<i>Total Height In 10 Years</i>	<i>Ratio of Width to Height</i>	<i>Total Width In 10 Years</i>	<i>Area of Canopy</i>
		<i>(Min. Cal./Ht.)</i>	<i>(x)</i>	<i>(Y)</i>	<i>X + Y = T</i>	<i>(R)</i>	<i>(R) T = D</i>	<i>(D)^2* 3.14/4=</i>
Aesculus parviflora	Bottlebrush Buckeye	(1'-1½')	1	7	8	0.85	6.8	36
Aronia arbutifolia "Brilliantissima"	Brilliant Red Chokeberry	(1'-1½')	1	5	6	0.50	3	7
Buddleia davidii	Butterfly Bush	(1'-1½')	1	6	7	0.65	4.55	16
Callicarpa dichotoma	Purple Beautyberry	(1'-1½')	1	3	4	1.20	4.8	18
Callicarpa japonica	Japanese Beautyberry	(1'-1½')	1	3	4	0.90	3.6	10
Calycanthus floridus	Common Sweetshrub or Carolina Allspice	(1'-1½')	1	5	6	0.95	5.7	26
Caryopteris "Longwood Blue"	Blue Mist Shrub	(1'-1½')	1	3	4	0.90	3.6	10
Cephalanthus occidentalis	Buttonbush	(1'-1½')	1	3	4	0.85	3.4	9
Clethra alnifolia & cvs.	Summersweet Clethra (Hummingbird, Rosea, Ruby Spice, September Beauty)	(1'-1½')	1	5	6	0.75	4.5	16
Cornus alba "Argenteo-marginata"	European Variegated Dogwood	(1'-1½')	1	7	8	0.75	6	28
Cornus racemosa	Gray Dogwood	(1'-1½')	1	9	10	0.90	9	64
Cornus sericea & cvs.	Red-twig Dogwood (Bailey's, Cardinal)	(1'-1½')	1	7	8	1.20	9.6	72
Cornus sericea "Flaviramea"	Yellowtwig Dogwood	(1'-1½')	1	7	8	1.20	9.6	72
Cotoneaster apiculatus	Cranberry Cotoneaster	(1'-1½')	1	2	3	1.00	3	7
Cotoneaster horizontalis	Rockspray Cotoneaster	(1'-1½')	1	2	3	1.20	3.6	10
Deutzia gracilis & cvs.	Slender Deutzia (Nikko)	(1'-1½')	1	2	3	1.20	3.6	10
Forsythia x intermedia & cvs.	Forsythia (Lynwood, Spectabilis, Spring Glory)	(1'-1½')	3	2	5	0.90	4.5	16
Fothergilla gardenii	Dwarf Fothergilla	(1'-1½')	1	1	2	0.90	1.8	3
Fothergilla major	Large Fothergilla	(1'-1½')	1	5	6	0.85	5.1	20
Hamamelis x intermedia & cvs.	Witchhazel (Arnold Promise, Diana, Winter Beauty)	(1'-1½')	1	10	11	0.90	9.9	77
Hamamelis mollis	Chinese Witchhazel	(1'-1½')	1	9	10	0.90	9	64
Hamamelis vernalis	Vernal Witchhazel	(1'-1½')	1	5	6	0.90	5.4	23
Hydrangea quercifolia & cvs.	Oakleaf Hydrangea (Alice, Snowqueen, Ellen Huff)	(1'-1½')	1	4	5	0.90	4.5	16
Hypericum x "Hidcote"	"Hidcote" St. Johnswort	(1'-1½')	1	2	3	0.90	2.7	6
Ilex decidua	Possumhaw	(1'-1½')	1	8	9	0.80	7.2	41
Ilex verticillata & cvs.	Winterberry Holly (Harvest Red, Late Male, Red Sprite, Winter Red,	(1'-1½')	1	7	8	0.90	7.2	41
Itea virginica "Henry's Garnet"	"Henry's Garnet" Sweetspire	(1'-1½')	1	5	6	1.50	9	64
Kerria japonica	Japanese Kerria	(1'-1½')	1	7	8	1.20	9.6	72
Ligustrum amurense "North River"	"North River" Privet	(1'-1½')	1	11	12	0.66	7.92	49
Lindera benzoin	Spicebush	(1'-1½')	1	5	6	0.90	5.4	23
Physocarpus opulifolius Dart's Golden	"Dart's Golden" Ninebark	(1'-1½')	1	4	5	1.00	5	20
Potentilla fruticosa & cvs.	Cinquefoil (Abbotswood, Gold Drop, Goldfinger, McKay's White)	(1'-1½')	1	2	3	1.00	3	7
Prunus cistena	Purpleleaf Sand Cherry	(1'-1½')	1	6	7	0.85	5.95	28
Rhus aromatica	Fragrant Sumac	(1'-1½')	1	4	5	1.30	6.5	33
Rhus copallina	Flameleaf Sumac	(1'-1½')	1	15	16	1.20	19.2	289
Rhus glabra	Smooth Sumac	(1'-1½')	1	8	9	1.00	9	64
Rhus typhina	Staghorn Sumac	(1'-1½')	1	14	15	1.20	18	254
Spiraea x bumalda & cvs.	Spirea (Neon Flash)	(1'-1½')	1	2	3	1.00	3	7
Spiraea nipponica & cvs.	Spirea (Snowmound)	(1'-1½')	1	2	3	1.00	3	7
Spiraea x vanhouttei	Vanhoutte Spirea	(1'-1½')	1	5	6	1.20	7.2	41
Syringa meyeri "Palibin"	Compact Meyer Lilac	(1'-1½')	1	4	5	1.50	7.5	44
Syringa patula "Miss Kim"	"Miss Kim" Manchurian Lilac	(1'-1½')	1	4	5	1.00	5	20
Syringa x chinensis	Chinese Lilac	(1'-1½')	1	7	8	1.00	8	50
Viburnum dentatum	Arrowwood Viburnum (Chicago Lustre)	(1'-1½')	1	6	7	0.90	6.3	31
Viburnum lantana & cvs.	Wayfaringtree Viburnum (Mohican)	(1'-1½')	1	11	12	1.00	12	113
Viburnum lentago	Nannyberry Viburnum	(1'-1½')	1	14	15	0.60	9	64
Viburnum nudum "Winterthur"	"Winterthur" Viburnum	(1'-1½')	1	5	6	1.00	6	28
Viburnum opulus "Sterile"	Old Fashioned Viburnum	(1'-1½')	1	7	8	1.20	9.6	72
Viburnum plicatum & cvs.	Snowball Viburnum (Popcorn, Triumph)	(1'-1½')	1	7	8	1.00	8	50
Viburnum plicatum tomentosum & cvs.	Doublefile Viburnum (Igloo, Mariessii, Shasta, White Delight)	(1'-1½')	1	7	8	1.00	8	50
Viburnum prunifolium	Blackhaw Viburnum	(1'-1½')	1	11	12	0.75	9	64
Viburnum trilobum	American Cranberrybush Viburnum	(1'-1½')	1	7	8	1.00	8	50
Viburnum x carcephalum & cvs.	Fragrant Viburnum (Cayuga)	(1'-1½')	1	5	6	1.00	6	28
Viburnum x "Juddii"	Judd Viburnum	(1'-1½')	1	6	7	1.00	7	38

# ENTRANCE CORRIDOR PLANT CALCULATIONS

## LARGE DECIDUOUS TREES (50'-70') 3½" Caliper (Shade and/or Street)

Botanical Name	Common Name	Minimum Caliper or Height (Min. Cal./Ht.)	Height at Planting (x)	Growth over 10 Years (Y)	Total Height In 10 Years X + Y = T	Ratio of Width to Height (R)	Total Width In 10 Years (R) T = D	Area of Canopy (D) <sup>2</sup> * 3.14/4 =
Acer nigrum & cvs.	Black Maple	(3½" Cal.)	14	12	26	0.66	17.16	231
Acer rubrum & cvs.	Red (Swamp) Maple (Oct. Glory, Red Sunset)	(3½" Cal.)	14	20	34	0.75	25.5	510
Acer rubrum "Armstrong"	"Armstrong" Red Maple	(3½" Cal.)	14	20	34	0.25	8.5	57
Acer saccharum & cvs.	Sugar Maple (Bonfire, Commemoration, Green Mountain, Legacy)	(3½" Cal.)	14	10	24	0.75	18	254
Acer x freemanii "Jeffersred"	Autumn Blaze Maple	(3½" Cal.)	14	20	34	0.75	25.5	510
Aesculus hippocastanum	Common Horsechestnut	(3½" Cal.)	16	16	32	0.90	28.8	651
Betula nigra "Heritage"	"Heritage" River Birch	(3½" Cal.)	14	15	29	0.90	26.1	535
Carya glabra	Pignut Hickory	(3½" Cal.)	15	5	20	0.55	11	95
Carya ovata	Shagbark Hickory	(3½" Cal.)	15	5	20	0.60	12	113
Celtis x occidentalis "Magnifica"	"Magnifica" Hackberry	(3½" Cal.)	14	20	34	0.90	30.6	735
Diospyros virginiana	Persimmon	(3½" Cal.)	15	8	22.5	0.75	16.875	224
Fagus grandifolia	American Beech	(3½" Cal.)	14	10	24	0.85	20.4	327
Fagus sylvatica & cvs.	European Beech	(3½" Cal.)	14	10	24	0.75	18	254
Fraxinus americana & cvs.	White Ash (Autumn Purple)	(3½" Cal.)	16	15	31	0.75	23.25	424
Fraxinus americana "Rosehill"	"Rosehill" White Ash	(3½" Cal.)	16	15	31	0.50	15.5	189
Fraxinus americana "Greenspire"	"Greenspire" White Ash	(3½" Cal.)	16	15	31	0.25	7.75	47
Fraxinus pennsylvanica & cvs.	Green Ash (Newport, Patmore, Summit, Urbanite)	(3½" Cal.)	16	25	41	0.75	30.75	742
Ginkgo biloba "Magyar"	"Magyar" Ginkgo	(3½" Cal.)	15	10	25	0.50	12.5	123
Ginkgo biloba "Princeton Sentry"	"Princeton Sentry" Ginkgo	(3½" Cal.)	15	10	25	0.20	5	20
Gleditsia triacanthos inermis & cvs.	Thornless Honeylocust	(3½" Cal.)	15	20	35	0.75	26.25	541
Gymnocladus dioicus & cvs.	Kentucky Coffeetree	(3½" Cal.)	14	25	39	0.77	30.03	708
Halesia monticola	Mountain Silverbell	(3½" Cal.)	14	15	29	0.66	19.14	288
Liquidambar styraciflua	Sweetgum	(3½" Cal.)	16	15	31	0.66	20.46	329
Liquidambar styraciflua "Rotundiloba"	"Rotundiloba" Sweetgum	(3½" Cal.)	16	15	31	0.60	18.6	272
Liriodendron tulipifera	Tuliptree or Tulip Poplar	(3½" Cal.)	16	25	41	0.60	24.6	475
Magnolia acuminata	Cucumbertree Magnolia	(3½" Cal.)	14	20	34	0.60	20.4	327
Metasequoia glyptostroboides	Dawn Redwood	(3½" Cal.)	14	25	39	0.25	9.75	75
Nyssa sylvatica	Blackgum Tree	(3½" Cal.)	15	8	23	0.66	15.18	181
Platanus x acerifolia & cvs.	London Planetree (Bloodgood)	(3½" Cal.)	15	18	32.5	0.76	24.7	479
Platanus occidentalis	American Planetree (Sycamore)	(3½" Cal.)	16	35	51	0.85	43.35	1475
Quercus alba	White Oak	(3½" Cal.)	14	12	26	0.80	20.8	340
Quercus bicolor	Swamp White Oak	(3½" Cal.)	15	20	35	0.63	22.05	382
Quercus coccinea	Scarlet Oak	(3½" Cal.)	15	20	35	0.70	24.5	471
Quercus falcata	Southern Red Oak	(3½" Cal.)	14	23	37	0.75	27.75	604
Quercus imbricaria	Shingle Oak	(3½" Cal.)	14	10	24	0.66	15.84	197
Quercus palustris	Pin Oak	(3½" Cal.)	15	20	35	0.70	24.5	471
Quercus palustris "Green Pillar"	Pin Oak	(3½" Cal.)	15	20	35	0.20	7	38
Quercus phellos	Willow Oak	(3½" Cal.)	15	20	35	0.70	24.5	471
Quercus prinus	Chesnut Oak	(3½" Cal.)	14	12	26	0.70	18.2	260
Quercus robur	English Oak	(3½" Cal.)	15	20	35	0.66	23.1	419
Quercus robur & cvs.	"Fastigate" English Oak	(3½" Cal.)	15	10	25	0.20	5	20
Quercus rubra	Northern Red Oak	(3½" Cal.)	15	20	35	0.75	26.25	541
Quercus shumardii	Shumard Oak	(3½" Cal.)	15	20	35	0.66	23.1	419
Salix alba & cvs.	Golden Weeping Willow	(3½" Cal.)	14	30	44	0.85	37.4	1098
Taxodium distichum & cvs.	Bald Cypress	(3½" Cal.)	14	15	29	0.40	11.6	106
Tilia americana "Redmond"	"Redmond" Linden	(3½" Cal.)	15	15	30	0.60	18	254
Tilia cordata "Greenspire"	"Greenspire" Littleleaf Linden	(3½" Cal.)	16	15	31	0.66	20.46	329
Tilia tomentosa "Green Mountain"	"Green Mountain" Silver Linden	(3½" Cal.)	14	15	29	0.75	21.75	371
Ulmus americana & cvs.	American Elm (Princeton, Washington)	(3½" Cal.)	14	15	29	0.90	26.1	535
Ulmus parvifolia "Allee"	"Allee" Elm	(3½" Cal.)	16	15	31	0.80	24.8	483
Zelkova serrata "Green Vase"	"Green Vase" Zelkova	(3½" Cal.)	16	20	36	0.66	23.76	443
Zelkova serrata "Village Green"	"Village Green" Zelkova	(3½" Cal.)	16	20	36	0.75	27	572

<b>LARGE DECIDUOUS TREES (50'-70') 2½" Caliper (Shade and/or Street)</b>								
<i>Botanical Name</i>	<i>Common Name</i>	<i>Minimum Caliper or Height</i>	<i>Height at Planting</i>	<i>Growth over 10 Years</i>	<i>Total Height In 10 Years</i>	<i>Ratio of Width to Height</i>	<i>Total Width In 10 Years</i>	<i>Area of Canopy</i>
		(Min. Cal./Ht.)	(x)	(Y)	X + Y = T	(R)	(R) T = D	(D) <sup>2</sup> 3.14/4=
Acer nigrum & cvs.	Black Maple	(2½" Cal.)	12	12	24	0.66	15.84	197
Acer rubrum & cvs.	Red (Swamp) Maple (Oct. Glory, Red Sunset)	(2½" Cal.)	12	20	32	0.75	24	452
Acer rubrum "Armstrong"	"Armstrong" Red Maple	(2½" Cal.)	13	20	33	0.25	8.25	53
Acer saccharum & cvs.	Sugar Maple (Bonfire, Commemoration, Green Mountain, Legacy)	(2½" Cal.)	12	10	22	0.75	16.5	214
Acer x freemanii "Jeffersred"	Autumn Blaze Maple	(2½" Cal.)	12	20	32	0.75	24	452
Aesculus hippocastanum	Common Horsechestnut	(2½" Cal.)	14	16	30	0.90	27	572
Betula nigra "Heritage"	"Heritage" River Birch	(2½" Cal.)	12	15	27	0.90	24.3	464
Carya glabra	Pignut Hickory	(2½" Cal.)	13	5	18	0.55	9.9	77
Carya ovata & cvs.	Shagbark Hickory	(2½" Cal.)	13	5	18	0.60	10.8	92
Celtis x occidentalis "Magnifica"	"Magnifica" Hackberry	(2½" Cal.)	12	20	32	0.90	28.8	651
Diospyros virginiana	Persimmon	(2½" Cal.)	13	8	20.5	0.75	15.375	186
Fagus grandifolia	American Beech	(2½" Cal.)	12	10	22	0.85	18.7	275
Fagus sylvatica & cvs.	European Beech	(2½" Cal.)	12	10	22	0.75	16.5	214
Fraxinus americana & cvs.	White Ash (Autumn Purple)	(2½" Cal.)	14	15	29	0.75	21.75	371
Fraxinus americana "Rosehill"	"Rosehill" White Ash	(2½" Cal.)	14	15	29	0.50	14.5	165
Fraxinus americana "Greenspire"	"Greenspire" White Ash	(2½" Cal.)	14	15	29	0.25	7.25	41
Fraxinus pennsylvanica & cvs.	Green Ash (Newport, Patmore, Summit, Urbanite)	(2½" Cal.)	14	25	39	0.75	29.25	672
Ginkgo biloba "Magyar"	"Magyar" Ginkgo	(2½" Cal.)	13	10	23	0.50	11.5	104
Ginkgo biloba "Princeton Sentry"	"Princeton Sentry" Ginkgo	(2½" Cal.)	13	10	23	0.20	4.6	17
Gleditsia triacanthos inermis & cvs.	Thornless Honeylocust	(2½" Cal.)	13	20	33	0.75	24.75	481
Gymnocladus dioicus & cvs.	Kentucky Coffeetree	(2½" Cal.)	12	25	37	0.77	28.49	637
Halesia monticola	Mountain Silverbell	(2½" Cal.)	12	15	27	0.66	17.82	249
Liquidambar styraciflua	Sweetgum	(2½" Cal.)	14	15	29	0.66	19.14	288
Liquidambar styraciflua "Rotundiloba"	"Rotundiloba" Sweetgum	(2½" Cal.)	14	15	29	0.60	17.4	238
Liriodendron tulipifera	Tuliptree or Tulip Poplar	(2½" Cal.)	14	25	39	0.60	23.4	430
Magnolia acuminata	Cucumbertree Magnolia	(2½" Cal.)	12	20	32	0.60	19.2	289
Metasequoia glyptostroboides	Dawn Redwood	(2½" Cal.)	12	25	37	0.25	9.25	67
Nyssa sylvatica	Blackgum Tree	(2½" Cal.)	13	8	21	0.66	13.86	151
Platanus x acerifolia & cvs.	London Planetree (Bloodgood)	(2½" Cal.)	13	18	30.5	0.76	23.18	422
Platanus occidentalis	American Planetree (Sycamore)	(2½" Cal.)	14	35	49	0.85	41.65	1362
Quercus alba	White Oak	(2½" Cal.)	12	12	24	0.80	19.2	289
Quercus bicolor	Swamp White Oak	(2½" Cal.)	13	20	33	0.63	20.79	339
Quercus coccinea	Scarlet Oak	(2½" Cal.)	13	20	33	0.70	23.1	419
Quercus falcata	Southern Red Oak	(2½" Cal.)	12	21	33	0.75	24.75	481
Quercus imbricaria	Shingle Oak	(2½" Cal.)	12	10	22	0.66	14.52	166
Quercus palustris	Pin Oak	(2½" Cal.)	13	20	33	0.70	23.1	419
Quercus palustris "Green Pillar"	Pin Oak	(2½" Cal.)	13	20	33	0.20	6.6	34
Quercus phellos	Willow Oak	(2½" Cal.)	13	20	33	0.70	23.1	419
Quercus prinus	Chesnut Oak	(2½" Cal.)	12	12	24	0.70	24	452
Quercus robur	English Oak	(2½" Cal.)	13	20	33	0.66	21.78	372
Quercus robur & cvs.	"Fastigate" English Oak	(2½" Cal.)	13	10	23	0.20	4.6	17
Quercus rubra	Northern Red Oak	(2½" Cal.)	13	20	33	0.75	24.75	481
Quercus shumardii	Shumard Oak	(2½" Cal.)	13	20	33	0.66	21.78	372
Salix alba & cvs.	Golden Weeping Willow	(2½" Cal.)	12	30	42	0.85	35.7	1000
Taxodium distichum & cvs.	Bald Cypress	(2½" Cal.)	12	15	27	0.40	10.8	92
Tilia americana "Redmond"	"Redmond" Linden	(2½" Cal.)	13	15	28	0.60	16.8	222
Tilia cordata "Greenspire"	"Greenspire" Littleleaf Linden	(2½" Cal.)	14	15	29	0.66	19.14	288
Tilia tomentosa "Green Mountain"	"Green Mountain" Silver Linden	(2½" Cal.)	12	15	27	0.75	20.25	322
Ulmus americana & cvs.	American Elm (Princeton, Washington)	(2½" Cal.)	12	15	27	0.90	24.3	464
Ulmus parvifolia "Allee"	"Allee" Elm	(2½" Cal.)	14	15	29	0.80	23.2	423
Zelkova serrata "Green Vase"	"Green Vase" Zelkova	(2½" Cal.)	14	20	34	0.66	22.44	395
Zelkova serrata "Village Green"	"Village Green" Zelkova	(2½" Cal.)	14	20	34	0.75	25.5	510

<i>MEDIUM DECIDUOUS TREES (40'-50') 2½" Caliper</i>								
<i>Botanical Name</i>	<i>Common Name</i>	<i>Minimum Caliper or Height</i>	<i>Height at Planting</i>	<i>Growth over 10 Years</i>	<i>Total Height In 10 Years</i>	<i>Ratio of Width to Height</i>	<i>Total Width In 10 Years</i>	<i>Area of Canopy</i>
		<i>(Min. Cal./Ht.)</i>	<i>(x)</i>	<i>(Y)</i>	<i>X + Y = T</i>	<i>(R)</i>	<i>(R) T = D</i>	<i>(D)^2 * 3.14/4 =</i>
Acer rubrum & cvs.	Red Maple (Autumn Flame, Bowhall)	(2½" Cal.)	13	10	23	0.75	17.25	234
Acer saccharum "Goldspire"	"Goldspire" Sugar Maple	(2½" Cal.)	14	10	24	0.50	12	113
Acer truncatum x platanoides "Keithsform"	Norwegian Sunset Maple	(2½" Cal.)	12	10	22	0.66	14.52	166
Carpinus betulus	European Hornbeam	(2½" Cal.)	13	10	23	0.75	17.25	234
Celtis laevigata "All Seasons"	"All Seasons" Sugar Hackberry	(2½" Cal.)	12	20	32	0.75	24	452
Cercidiphyllum japonicum	Katsuratree	(2½" Cal.)	12	20	32	0.60	19.2	289
Corylus columna	Turkish Filbert	(2½" Cal.)	12	18	29.5	0.50	14.75	171
Salix nigra	Black Willow	(2½" Cal.)			0		0	0
Sassafras albidum	Common Sassafras	(2½" Cal.)	12	15	27	0.66	17.82	249
Sophora japonica "Princeton Upright"	"Princeton Upright" Scholartree	(2½" Cal.)	12	20	32	0.70	22.4	394
Sophora japonica "Regent"	"Regent" Scholartree	(2½" Cal.)	12	20	32	0.80	25.6	514