Using Native Plants

in Commercial, Suburban, and Urban Landscapes: Incorporating Ecological Design Principles

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On the cover: American chokecherry, *Prunus virginiana;* bee balm, *Monarda didyma;* fragrant sumac, *Rhus aromatica;* and alternate leaf dogwood, *Cornus alternifolia.* Photos by J. Engel.

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Use this manual as a guide for the selection and use of native plants in commercial and public landscapes. The Town of Victor Conservation Board advises all developers, contractors, landscapers undertaking commercial work within the town to use at least 70% native species in all plantings (see Tables1, 2 & 3). Select the remaining 30% of the plant material from the list of acceptable non-native species (see Table 4). Use no plants from the list of unacceptable species (see Table 5). Meet the 70% recommendation within each category of plant: shade trees, conifers, shrubs, perennials and ornamental grasses. Each category of plant must meet the 70% recommendation independently of the other categories. Annual flowers are exempt from the recomendation.

Native Plant Definition

The term native plant as used in this document refers to ***any species of indigenous plant that existed east of the Mississippi river prior to European settlement.*** Note: This definition excludes introduced plants that have become widely naturalized after European colonization. Cultivated varieties (Cultivars) of native plants are acceptable to use interchangeably with the species; however, selective breeding for ornamental traits can produce plants that are less adapted to survive in the landscape, compared to the species. Plant the species unless there is a specific reason for using a cultivar.

Reasons to Use Native Plants in Our Landscapes

Native plants are indigenous to our area; they are adapted to local climatic conditions and soils; they have evolved over thousands of years to survive and reproduce in this region. Native plants grow naturally in the surrounding natural landscape and grow just as well in manmade managed landscapes.

Because native plants are an integral component of the local ecosystem, they pose no inherent environmental or ecological risk to the health of the ecosystem **in contrast** to non-native plants. Native plants form the base of the food chain for the local ecosystem and provide the critical requirements that wildlife species need to live and reproduce.

Conserve Local Natural Resources

The Town of Victor believes that conservation of local natural resources serves the public good. The town is experiencing rapid development with the resulting loss of open spaces, loss of wildlife habitat and an increase in invasive species. These changes lead to deteriorating environmental quality. Many of these natural resource issues are addressed in part by promoting the use of native plants and changing the landscape practices within the town.

Avoid the Problem of Invasive Plants

Using native plants in landscapes avoids many of the environmental problems that results from using non-native plants. Some non-native plants that have been extensively used in landscaping over the years have escaped from cultivation and become established in nature. Non-native plants cause irreparable damage to natural landscapes, native plant communities and wildlife populations. Once these plants escape into the wild they continue to reproduce and spread unchecked. The aggressive spread and growth of invasive plants enables them to out-compete and displace native flora, forming large mono-

cultures. The result is loss of wildlife, increased control and maintenance costs for individuals and communities, and degradation of natural biological systems. This problem is compounded by continued use of these plants.

It is far more cost effective to prevent the escape and establishment of non-native invasive plants than it is to try and control the plants once they have escaped cultivation.

The horticultural industry has taken **few** steps to restrict or otherwise limit the use and sale of plants that pose a risk of escape into natural systems. Even plants proven to be invasive are still marketed and sold by the horticultural industry. New plant introductions in the horticultural industry go unscreened for their potential to escape cultivation. No one can predict with any certainty which ones will pose a risk of escape either now or in the future.

Presently, in most landscapes only a few species of non-native plants—e.g. Burning bush, Dwarf barberry and Japanese spirea—are used repetitively. These same plants are known to escape cultivation and invade natural areas throughout the northeast.

Native plants provide the same ornamental and landscape requirements as their non-native counterparts. Plants such as Black chokeberry, Bear berry and New Jersey tea can easily replace the non-native's with no loss of aesthetics. In many cases the native replacements have more desirable qualities.

Availability of Native Plants

Contact prospective suppliers and growers early in the design process to make sure you have the plants you need for your project. Plan ahead to locate sources and assure availability because native plants may not be available from your regular suppliers in the quantities, species and sizes needed for your project. Some native plants are commonly available from regular suppliers of landscape materials, but others will be difficult to find. Work with local growers if possible. If you contact growers early enough in the design process they can custom grow the plants in the numbers and species you need. They will be eager to work with you knowing that they have a certain buyer and market for their plants. Establishing this relationship will create a local and reliable supply of native materials.

Conserve Existing Native Vegetation

Protect native plants and intact native plant communities where they already exist in the landscape. Conserving existing habitat is better for the environment and is more economical than having to replant.

Take specific precautions to protect the plants and their habitat during construction and site development:

- Reduce the building and paving footprints whenever possible.
- Limit site disturbance to a minimal area around the building perimeter; cordon off areas to be preserved intact with fencing to prevent unwanted vehicle traffic and unintentional use.
- Trees to be saved should be surrounded with fencing at a minimum to the drip line of the canopy, protecting the root system and soil from compaction by heavy equipment.
- Restrict where construction equipment, building materials, temporary buildings and other building supplies are parked, stored or warehoused to areas that will be permanently disturbed, such as parking lots.

Key Descriptions for Tables 1, 2, and 3

Availability: describes the likelihood of finding these plants at a wholesale or re-wholesale nursery.

Common: indicates that this is a common landscape plant and it will be fairly easy to locate this plant in the nursery trade.

Moderate: this is a less common plant in the nursery trade. Some nurseries will grow this plant and others will not.

Uncommon: will be difficult to locate this plant from most nurseries. It may be located from specialty nurseries or a random nursery may offer it. It may take some hunting to locate this plant.

Rare: will be very difficult to impossible to locate this plant in the nursery trade. This type of plant is just not grown for ornamental purposes. It might be possible to locate this plant from a nursery doing wild land restoration.

Value: The first letter indicates the ranking placed on using this plant in the landscape. Plant with a high rating should be given priority for use in the landscape. The rating is based on a number of factors: ability to survive in adverse soils and varied environmental conditions, importance to wildlife and desirable ornamental characteristics.

Cultivars: when only “species” is listed it indicates there are no known or readily available cultivars offered. When “species & cultivar” is listed, it indicates that the species or any of the cultivar may be used. The term “many cultivars” indicates that there are numerous cultivars on the market and a cultivar should be used over the species.

Zone: The range of climatic zones this plant is known to grow in. Use this as a guide for selecting plants that are adapted to your climatic zone.

Height range: an average mature height range for the species. This can vary significantly depending on age of the plant, growing conditions, maintenance pruning, cultivar and other factors. Use this as a rough guide when selecting plants for height.

Drought tolerance: Range is from high to low. Often a range is indicated. This may indicate other contributing factors, such as plants being more drought tolerant in shade, being able to withstand short term drought or drought tolerance once established.

Moisture: Indicates the range of soil moistures each plant will tolerate. Range is from very dry to wet saturated soils. Most plants can grow in a range of soil moistures. The larger the moisture range the more tolerant the plant will be to soil moisture variables.

Fertility: Indicates the minimum fertility requirement of the plant. This is important to know because most soils around construction sites are of low fertility. Plants requiring moderate to high fertility will need good top soil or soils amended with organic matter.

Soils: Indicates the general type of soil that the plant commonly grows in. Range is from sandy to clay.

pH: Gives a range of pH that the plants will tolerate. Generally pH on the extreme ends of the scale are a concern.

Sunlight: Indicates the range of sunlight conditions the plant will tolerate.

Table 1: Native Trees for use in Landscape Plantings

Availability	Value	Latin Name	Common Name		Zone	Height Range	Drought Tolerance	Moisture	Fertility	Soil	pH Range	Light Requirement
Medium	H/ Orn, Adapt	Acer x fremanii	Freeman Maple	all cultivars	4 to 8	50 - 75′	Low-Mod	D, M, Mo, W	Low-High	PD/ L, C	5.0 - 7.5	S, PS, PSh
Uncommon	H/ Orn, Adapt	Acer nigrum	Black Maple	species	4 to 8	60 - 75′	Mod-High	D, M, Mo	Mod-High	WD/ L, C, G	5.0 -8.0	S, PS, PSh, Sh
Common	H/ Orn, Adapt	Acer rubrum	Red Maple	sp. & cultivars	3 to 9	40 - 60′	Low	D, M, Mo, W	Low-High	PD/ L, C	5.0 -7.0	S, PS, PSh
Common	L/ Adapt	Acer saccharinum	Silver Maple	species	3 to 9	50 - 70′	Mod	D, M, Mo, W	Low	PD/ L, C	5.0 - 7.5	S, PS
Common	H/ Orn, Adapt	Acer saccharum	Sugar Maple	species & cultivars	4 to 8	60 - 75′	Low	M, Mo	Mod-High	WD/ L, C	5.0 - 7.5	S, PS, PSh, Sh
Uncommon	M/ Orn, Wild	Aesculus flava	Yellow Buckeye	species	4 to 8	60 - 75′	Mod	M, Mo	Mod-High	WD/ S, L, C	5.0 -7.0	S, PS
Uncommon	M/ Orn, Wild	Aesculus glabra	Ohio Buckeye	species	4 to 7	30 - 70′	Low	M, Mo, W	Mod-High	WD/ S, L, C	5.0 -7.0	S, PS
Rare	M/ Orn, Wild	Betula alleghaniensis	Yellow Birch	species	3 to 7	60 - 75′	Mod	M, Mo	Low-High	PD/ S, L	5.0 -7.0	S, PS, PSh
Uncommon	M/ Orn, Adapt, Wild	Betula lenta	Sweet Birch	species	4 to 7	40 - 55′	Mod	D, M, Mo	Mod-High	WD/ L, G	5.0 -7.0	S, PS, PSh
Common	H/ Orn, Adapt, Wild	Betula nigra	River Birch	species & cultivars	3 to 8	40 - 70′	Mod-High	D, M, Mo, W	Mod-High	PD/ L, C	5.0 -7.0	S, PS
Medium	H/ Orn, Wild	Betula papyrifera	Paper Birch	species	3 to 6	50 - 70′	Low-Mod	M, Mo	Mod-High	WD/ L, G	5.0 -8.0	S, PS, PSh
Medium	M/ Om, Wild	Betula populifolia	Gray Birch	species & cultivars	3 to 7	20 - 30′	Mod	D, M, Mo	Low-Mod	WD/ L, G	5.0 -7.0	S, PS
Uncommon	H/ Orn, Wild	Carpinus caroliniana	American Hornbeam	species	3 to 8	20 - 30′	Mod	M, Mo, W	Mod-High	PD/ L, C	5.0 -8.0	S, PS, PSh, Sh
Rare	M/ Orn, Adapt, Wild	Carya cordiformis	Bitternut Hickory	species	4 to 8	50 - 75′	High	D, M, Mo	Low-Mod	WD/ L, C	5.0 - 7.5	S, PS
Rare	M/ Adapt, Wild	Carya ovata	Shagbark Hickory	species	4 to 8	60 - 80′	High	D, M, Mo	Low-Mod	WD/ L, C	5.0 - 7.5	S, PS
Uncommon	M/ Adapt, Wild	Celtis occidentalis	Hackberry	species	3 to 8	40 - 60′	High	VD, M, Mo	Low-High	WD, L, C	5.0 -8.0	S, PS
Uncommon	H/ Orn	Cladrastis lutea	Yellow wood	species & cultivars	4 to 8	30 - 50′	Low-Mod	M, Mo	Mod-High	WD/ Loam	5.0 -8.0	S, PS
Rare	L/ Adapt, Wild	Diospyros virginiana	Persimmon	species	4 to 8	35 - 60′	Mod	D, M, Mo	Poor-Mod	WD/ S, L, C	5.0 -8.0	S, PS, PSh
Rare	M/ Orn, Wild	Fagus grandifolia	American Beech	species	4 to 8	50 - 70′	Low-Mod	M, Mo	Poor-High	WD/ Loam	5.0 -7.0	S, PS, PSh, Sh
Medium	M/ Adapt	Fraxinus americana	American Ash	species & cultivars	4 to 8	50 - 80′	Low-Mod	D, M, Mo	Mod-High	WD, L, C	5.0 -8.0	S, PS
Common	M/ Adapt	Fraxinus pennsylvanica	Green Ash	species & cultivars	3 to 8	50 - 60′	High	VD, M, Mo, W	Poor-High	PD/ L, C	5.0 -8.0	S, PS
Common	M/ Om, Adapt	Gleditsia triocanthus inermis	Honey Locust	cultivars only	4 to 8	30 - 70′	High	VD, M, Mo	Poor-Mod	WD/ L, C, G	5.0 -8.0	S, PS
Uncommon	M/ Orn, Adapt	Gymnocladus dioicus	Kentucky Coffee Tree	species	3 to 8	60 - 75′	High	VD, M, Mo	Poor-Mod	WD, L, C	5.0 -8.0	S, PS

Availability: Common, Medium, Uncommon, Rare

Value: H = High; M = Medium; L = Low; ADAPTable; ORNamental; WILDlife

Drought tolerance: High; Moderate; Low

Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet

Fertility: High; Moderate; Low

Soils: S = Sand; L = Loam; C = Clay; G = Gravel

Light Requirement: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade

Table 1: Native Trees for use in Landscape Plantings

Availability	Value	Latin Name	Common Name		Zone	Height Range	Drought Tolerance	Moisture	Fertility	Soil	pH Range	Light Requirement
Rare	M/ Orn	Helesia diptera	Two-winged Silverbell	species	4 to 8	20 - 30′	Low-Mod	M, Mo	Mod-High	WD/ Loam	5.0 -6.4	S, PS, PSh
Rare	M/ Orn	Helesia monticola	Mt Silverbell	species & cultivars	4 to 8	30 - 40′	Low-Mod	M, Mo	Mod-High	WD/ Loam	5.0 -6.4	S, PS, PSh
Uncommon	M/ Orn, Adapt	Liquidambar styraciflua	Sweet Gum	species	5 to 8	60 - 75′	Mod	D, M, Mo, W	Mod-High	PD/ L, C	5.0 -7.5	S, PS
Medium	M/ Orn	Liriodendron tulipifera	Tulip Tree	species	4 to 8	70 - 90′	Low-Mod	M, Mo	Mod-High	WD/ Loam	5.0 -8.0	S, PS
Uncommon	M/ Orn, Wild	Magnolia acuminata	Cucumber Magnolia	species	4 to 8	50 - 80′	Low-Mod	M, Mo	Mod-High	WD/ Loam	5.0 -8.0	S, PS, PSh
Rare	L/ Adapt, Wild	Morus rubra	Red Mulberry	species	5 to 8	30 - 50′	Mod	M, Mo	Mod-High	WD/ Loam	5.0 -7.0	S, PS, PSh
Uncommon	H/ Orn, Adapt, Wild	Nyssa sylvatica	Black Gum	species	4 to 8	30 - 50′	Mod-High	D, M, Mo, W	Low-Mod	PD/ L, C	5.0 -7.0	S, PS, PSh
Uncommon	H/ Orn, Adapt	Ostrya virginiana	Hophornbeam	species	3 to 8	25 - 40′	Mod-High	D, M, Mo	Low-Mod	WD/ L, G	5.0 -8.0	S, PS, PSh, Sh
Uncommon	M/ Orn	Oxydendrum arboreum	Sour Wood	species	5 to 8	25 - 30′	Mod	M, Mo	Low-Mod	WD/ L, G	5.0 -7.0	S, PS, PSh
Medium	H/ Orn, Adapt, Wild	Platanus occidentalis	American Sycamore	species	4 to 8	75 - 100′	Mod	D, M, Mo, W	Mod-High	PD/ L, C	5.0 -8.0	S, PS
Rare	M/ Adapt, Wild	Prunus serotina	Black cherry	species	3 to 8	60 - 70′	Mod	M, Mo	Low-High	WD/ Loam	5.0 - 7.5	S, PS, PSh
Uncommon	M/ Adapt, Wild	Quercus alba	White Oak	species	3 to 8	50 - 80′	Mod-High	D, M, Mo	Low-Mod	WD/ L, G	5.0 -7.0	S, PS
Medium	H/ Orn, Adapt, Wild	Quercus bicolor	Swamp White Oak	species	4 to 8	50 - 60′	Mod-High	D, M, Mo	Low-Mod	PD/ Loam	5.0 -6.5	S, PS
Medium	H/ Orn, Adapt, Wild	Quercus coccinea	Scarlet Oak	species	4 to 8	60 - 70′	Mod-High	D, M, Mo	Low-Mod	WD/ L, G	5.0 -8.0	S, PS
Uncommon	M/ Adapt, Wild	Quercus imbricaria	Shingle Oak	species	4 to 8	50 - 60′	Mod-High	D, M, Mo	Low-Mod	WD/ L, G	5.0 - 7.5	S, PS
Uncommon	M/ Adapt, Wild	Quercus macrocarpa	Burr Oak	species	3 to 8	70 - 80′	High	D, M, Mo, W	Low-Mod	PD/ L, C	5.0 -8.0	S, PS
Uncommon	M/ Adapt, Wild	Quercus muehlenbergii	Chinkapin Oak	species	5 to 7	60 - 70′	High	D, M, Mo	Low-Mod	WD/ S, L, C	5.0 -8.0	S, PS
Common	H/ Orn, Adapt, Wild	Quercus palustris	Pin Oak	species	4 to 8	60 - 70′	Mod-High	D, M, Mo, W	Mod-High	PD/ L, C	5.0 -6.5	S, PS
Common	H/ Orn, Adapt, Wild	Quercus rubra	Red Oak	species	3 to 7	60 - 75′	Mod-High	D, M, Mo	Low-Mod	PD/ L, C, G	5.0 - 7.5	S, PS, PSh
Uncommon	M/ Adapt, Wild	Quercus velutina	Black Oak	species	3 to 8	50 - 60′	Mod-High	D, M, Mo	Low-Mod	WD/ L, G	5.0 - 7.5	S, PS
Rare	L/ Adapt, Wild	Sassafras albidum	Sassafras	species	4 to 8	30 - 60′	Mod-High	D, M, Mo	Low-Mod	WD/ L, G	5.0 -7.0	S, PS, PSh
Rare	L/ Orn	Taxodium distichum	Bald Cypress	species	4 to 9	50 - 70′	Mod-High	D, M, Mo, W	Low-Mod	PD/ L, C	5.0 - 7.5	S, PS, PSh
Uncommon	M/ Orn, Adapt	Tilia americana	American Linden	species	3 to 8	60 - 80′	Mod	M, Mo	Low-Mod	PD/ L, C	5.0 -8.0	S, PS, PSh
Medium	M/ Orn, Adapt	Ulmus americana	American Elm	cultivars only	3 to 9	60 - 80′	Low-Mod	D, M, Mo, W	Mod-High	PD/ L, C	5.0 -8.0	S, PS

Availability: Common, Medium, Uncommon, Rare

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Availability	Value	Latin Name	Common Name		Zone	Height Range	Drought Tolerance	Moisture	Fertility	Soil	pH Range	Light Requirement
Conifers												
Medium	M/ Orn, Wild	Abies balsamea	Balsam Fir	species	3 to 5	30 - 50′	Low-Mod	M, Mo	Low-Mod	WD/ S, L, G	4.0-6.5	S, PS
Uncommon	H/ Orn, Adapt	Abies balsamea var. phanerolepis	Canaan Fir	species	3 to 5	30 - 50′	Mod	M, Mo	Low-Mod	WD/ S, L, G	4.0-6.5	S, PS
Common	H/ Orn, Adapt	Abies concolor	Concolor Fir	species	3 to 7	30 - 50′	Mod-High	D, M, Mo	Low-Mod	WD/ S, L, G	5.5-8.0	S
Medium	M/ Orn	Abies fraseri	Fraser Fir	species	4 to 7	30 - 40′	Mod	M, Mo	Mod-High	WD/ S, L	4.5-6.0	S, PS
Medium	H/ Orn, Adapt	Picea gluaca	White Spruce	species	2 to 6	30 - 60′	Mod	D, M, Mo	Low-Mod	WD/ S, L, G	4.5- 7.5	S, PS, PSh
Common	H/ Orn, Adapt	Picea pungens	Blue Spruce	species	2 to 7	30 - 60′	Mod-High	D, M, Mo	Low-Mod	WD/ S, L, G	5.5-8.0	S
Uncommon	M/ Adapt	Pinus resinosa	Red Pine	species	2 to 5	50 - 60′	High	D, M	Low	WD/ S, L, G	4.5-6.0	S, PS
Uncommon	M/ Orn, Adapt	Pinus strobiformis	Mexican Border Piine	species	4 to 8	40 - 50′	High	D, M	Low-Mod	WD/ S, L, G	5.0 -8.0	S, PS
Common	H/ Orn, Adapt, Wild	Pinus strobus	White Pine	species	3 to 7	60 - 80′	Mod	D, M, Mo	Low-Mod	WD/ S, L, C	5.0 - 7.5	S, PS, PSh
Common	M/ Orn, Adapt	Pseudotsuga menziesii	Douglas fir	species	4 to 6	40 - 60′	Mod	M, Mo	Mod-High	WD/ S, L	5.0 - 7.5	S, PS
Common	H/ Orn, Wild	Tsuga canadensis	Eastern Hemlock	species	3 to 7	60 - 70′	Low-Mod	M, Mo	Low-Mod	WD/ S, L, G	4.5 - 7.5	S, PS, PSh, Sh

Availability: Common, Medium, Uncommon, Rare

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Table 2: Native Shrubs and Small Trees for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Cultivars	Zone	Height range	Drought tolerance	Moisture	Fertility	Soils	pH Range	Light Requirement
Moderate	H/ Orn, Adapt	Arctostaphylos uva-ursi	Bear Berry	species	2 to 6	< 1 ft	High	D, M	Low	WD, S, L, G	4.0-7.0	S, PS
Uncommon	M/ Adapt, Wild	Amelanchier alnifolia	Saskatoon Serviceberry	species, cultivars	3 to 5	6 to 10 ft	Mod	D, M, Mo	Low	S, L, G	5.0 -8.0	S, PS, PSh
Uncommon	M/ Orn,	Andromeda polifolia	Bog Rosemary	species, cultivar	3 to 6	1 to 2 ft	Low	Mo, W	Low-Mod	WD, S, L	4.0-7.0	S, PS, PSh
Common	H/ Orn, Adapt, Wild	Aronia arbutifolia	Red Chokeberry	species, cultivar	4 to 9	4 to 6 ft	Mod-High	D, M, Mo, W	Low-Mod	S, L, C, G	5.0-7.5	S, PS
Common	H/ Orn, Adapt, Wild	Aronia melanocarpa	Black Chokeberry	species, cultivars	3 to 8	3 to 5 ft	Mod-High	D, M, Mo, W	Low-Mod	S, L, C, G	5.0-7.5	S, PS
Moderate	M/ Orn	Calycanthus floridus	Sweet Shrub	species, cultivars	4 to 9	6 to 8 ft	Mod	WD, M, Mo	Mod-High	L	5.0-8.0	S, PS, PSh
Uncommon	H/ Orn, Adapt, Wild	Ceanothus americanus	New Jersey Tea	species	4 to 8	2 to 3 ft	High	D, M	Low	S, L, G	4.0-7.0	S, PS, PSh
Uncommon	M/ Orn, Wild	Cephalanthus occidentalis	Button Bush	species	5 to 9	6 to 9 ft	Low	Mo, W	Mod	L, C	5.0-7.5	S, PS
Common	H/ Orn, Wild	Clethra alnifolia	Summersweet	many cultivars	4 to 9	2 to 5 ft	Mod	M, Mo, W	Mod-High	L, C	5.0-7.0	S, PS, PSh
Uncommon	M/ Adapt	Comptonia peregrina	Sweet Fern	species	2 to 6	3 to 4 ft	High	D, M	Low	S, L, G	4.0-7.0	S, PS
Uncommon	M/ Adapt, Wild	Cornus amomum	Silky Dogwood	species	4 to 8	5 to 8 ft	Mod	M, Mo, W	Low-Mod	L, C	5.0-7.0	S, PS, PSh
Uncommon	M/ Adapt, Wild	Cornus racemosa	Grey Dogwood	species	3 to 8	5 to 8 ft	High	VD, M, Mo, W	Low-Mod	All	5.0-8.0	S, PS, PSh
Common	M/ Adapt, Wild	Cornus sericea	Red-twig Dogwood	species, cultivars	2 to 7	5 to 8 ft	High	D, M, Mo, W	Low-Mod	L, C	5.0-8.0	S, PS, PSh
Rare	M/ Wild	Corylus cornuta	Beaked Hazelnut	species	4 to 9	5 to 6 ft	Mod-High	D, M, Mo	Low-Mod	S, L, C	5.0-7.5	S, PS, PSh
Rare	M/ Wild	Corylus americana	American Hazelnut	species	4 to 9	8 to 10 ft	Mod-High	D, M, Mo	Low-Mod	S, L, C	5.0-7.5	S, PS
Moderate	H/ Orn, Adapt, Wild	Diervilla lonicera	Bush Honeysuckle	species, cultivars	3 to 7	3 to 4 ft	High	D, M, Mo,	Low	S, L, G	5.0-8.0	S, PS, PSh
Common	H/ Orn, Adapt	Fothergilla gardenii	Dwarf Fothergilla	species, cultivars	5 to 8	3 to 4 ft	Mod	WD, M, Mo,	Mod-High	S, L	5.0-8.0	S, PS, PSh
Uncommon	M/ Orn,	Fothergilla major	Large Fothergilla	species, cultivars	4 to 8	6 to 10 ft	Mod	WD, M, Mo,	Mod-High	S, L	5.0-8.0	S, PS, PSh
Uncommon	M/ Adapt	Hamamellis virginiana	Witch Hazel	species	3 to 8	6 to 10 ft	Low-Mod	WD, D, M, Mo	Low-Mod	S, L, C	5.0 -7.5	S, PS, PSh, Sh
Common	M/ Orn,	Hydrangea arborescens	Smooth Hydrangea	many cultivars	4 to 9	3 to 5 ft	Mod-High	D, M, Mo	Low	S, L, G	5.0-8.0	S, PS, PSh, Sh
Moderate	M/ Orn,	Hydrangea quercifolia	Oak Leaf Hydrangea	many cultivars	5 to 9	4 to 6 ft	Mod	WD, M, Mo	Mod-High	S, L	5.0-8.0	S, PS, PSh, Sh
Moderate	H/ Orn, Adapt,	Hypericum frondosum	St Johnswort	species, cultivars	5 to 8	2 to 3 ft	Mod-High	D, M, Mo	Low	S, L, G	5.0 -8.0	S, PS, PSh
Moderate	H/ Orn, Adapt,	Hypericum kalmianum	St Johnswort	species, cultivars	4 to 7	2 to 3 ft	Mod-High	D, M, Mo	Low	S, L, G	5.0 -8.0	S, PS, PSh
Uncommon	M/ Orn, Wild	Ilex decidua	Decidous Holly	species, cultivars	5 to 9	8 to 12 ft	Low-Mod	M, Mo, W	Mod-High	S, L, C	4.0 -7.0	S, PS, PSh
Common	M/ Adapt	Ilex glabra	Inkberry	many cultivars	4 to 9	3 to 4 ft	Mod	M, Mo, W	Mod-High	S, L, C	4.0 -8.0	S, PS, PSh

Availability: Common, Medium, Uncommon, Rare

Value: H = High; M = Medium; L = Low; ADAPTable; ORNamental; WILDlife

Drought tolerance: High; Moderate; Low

Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet

Fertility: High; Moderate; Low

Soils: S = Sand; L = Loam; C = Clay; G = Gravel

Light Requirement: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade

Table 2: Native Shrubs and Small Trees for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Cultivars	Zone	Height range	Drought tolerance	Moisture	Fertility	Soils	pH Range	Light Requirement
Common	M/ Orn, Wild	Ilex verticillata	Winter Berry	many cultivars	3 to 9	4 to 6 ft	Mod	M, Mo, W	Mod-High	L, C	4.0 -7.0	S, PS, PSh
Common	H/ Orn, Adapt,	Itea virginica	Sweet Spire	species, cultivars	5 to 9	3 to 4 ft	Mod-High	M, Mo, W	Mod-High	L, C	5.0 -8.0	S, PS, PSh
Common	M/ Adapt	Juniperus communis	Common Juniper	many cultivars	2 to 6	2 to 10 ft	High	D, M, Mo	Low	S, L, G	5.0-8.0	S, PS
Common	M/ Adapt	Juniperus horizontalis	Creeping Juniper	many cultivars	4 to 9	1 to 2 ft	High	D, M, Mo	Low	S, L, G	5.0-8.0	S, PS
Common	M/ Adapt	Juniperus scopulorum	Rocky Mountain Juniper	many cultivars	3 to 7	to 20 ft	High	D, M, Mo	Low	S, L, G	5.0-8.0	S, PS
Common	M/ Adapt, Wild	Juniperus virginiana	Eastern Red Cedar	many cultivars " Bar harbor, Bluechip	3 to 9	to 30 ft	High	D, M, Mo	Low	S, L, G	5.0-8.0	S, PS
Uncommon	L/ Orn	Leucothoe fontanesiana	Fetterbush	species, cultivars	5 to 8	4 to 5 ft	Low-Mod	M, Mo	Mod-High	S, L	4.0-6.0	PS. PSh
Moderate	H/ Adapt, Wild	Lindera benzoin	Spice Bush	species	4 to 9	6 to 10 ft	Mod	M, Mo, W	Mod	S, L, C	5.0-7.5	S, PS, PSh, Sh
Moderate	M/ Orn	Kalmia latifolia	Mountain Laurel	species, cultivars	4 to 9	6 to 15 ft	Mod	D, M, Mo	Mod-High	S, L, G	4.0-6.0	PS. PSh, Sh
Uncommon	L/ Adapt	Myrica gale	Sweetgale	species	1 to 6	3 to 4 ft	Low	Mo, W	Low-Mod	S, L, C	5.0-8.0	S, PS
Uncommon	M/ Adapt, Wild	Myrica pennsylvanica	Bayberry	species	3 to 6	6 to 8 ft	High	VD, M, Mo, W	Low	S, L, C	4.0 -8.0	S, PS, PSh
Rare	L/ Adapt	Paxistima canbyi	Mountain Lover	species	3 to 7	1 ft	High	D, M	Low	S, L, G	5.0-8.0	S, PS
Moderate	H/ Orn, Adapt	Physocarpus opulifolius	Ninebark	species, cultivars	2 to 7	6 to 8 ft	Mod-High	D, M, Mo	Mod	S, L, G	5.0-7.5	S, PS. PSh
Common	H/ Orn, Adapt	Potentilla fruticosa	Potentilla	many cultivars	2 to 6	2 to 3 ft	High	D, M, Mo	Low	S, L, G	5.0-8.0	S, PS
Uncommon	M/ Adapt, Wild	Prunus pumilla	Sand Cherry	species	2 to 6	1 to 2 ft	High	D, M	Low	S, L, C	5.0-8.0	S, PS
Moderate	M/ Orn	Rhododendron species	Rhododendron	many cultivars	4 to 7	5 to 10 ft	Low-Mod	M, Mo	Mod-High	S, L	4.0-6.0	PS. PSh
Uncommon	L/Adapt, Wild	Ribes americanum	Eastern Black Currant	species	4 to 6	3 to 6 ft	Mod	D, M, Mo	Low-Mod	S, L, G	5.0-8.0	S, PS. PSh
Uncommon	L/Adapt, Wild	Ribes odoratum	Clove Currant	species	4 to 6	3 to 6 ft	Mod	D, M, Mo	Low-Mod	S, L, G	5.0-8.0	S, PS. PSh
Moderate	H/ Orn, Adapt, Wild	Rhus aromatica	Fragrant Sumac	species	3 to 9	6 to 8 ft	High	VD, M, Mo	Low	S, L, G	5.0-8.0	S, PS
Common	H/ Orn, Adapt, Wild	Rhus aromatica "Grow-low"	Fragrant Sumac	cultivar	3 to 9	1 to 2 ft	High	VD, M, Mo	Low	S, L, G	5.0-8.0	S, PS
Uncommon	M/ Adapt, Wild	Rubus odoratus	Flowering Raspberry	species	4 to 6	3 to 5 ft	Mod	D, M, Mo	Low	S, L, G	5.0-7.5	S, PS. PSh, Sh
Rare	M/ Adapt, Wild	Salix eriocephala	Heart Leaved Willow	species	2 to 6	6 to 13 ft	Low-Mod	M, Mo, W	Low-Mod	S, L, C	4.0 -7.0	S, PS
Medium	M/ Adapt, Wild	Salix discolor	Pussy Willow	species, cultivars	3 to 6	6 to 20 ft	Low-Mod	M, Mo, W	Low-Mod	L, C	4.0 -7.0	S, PS
Rare	M/ Adapt, Wild	Salix exigua	Sandbar Willow	species	2 to 6	3 to 15 ft	Low-Mod	M, Mo, W	Low-Mod	S, L, G	5.0 -7.5	S, PS

Availability: Common, Medium, Uncommon, Rare

Value: H = High; M = Medium; L = Low; ADAPTable; ORNamental; WILDlife

Drought tolerance: High; Moderate; Low

Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet

Fertility: High; Moderate; Low

Soils: S = Sand; L = Loam; C = Clay; G = Gravel

Light Requirement: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade

Table 2: Native Shrubs and Small Trees for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Cultivars	Zone	Height range	Drought tolerance	Moisture	Fertility	Soils	pH Range	Light Requirement
Rare	M/ Adapt, Wild	Salix lucida	Shining Willow	species	2 to 7	8 to 16 ft	Low-Mod	M, Mo, W	Low-Mod	S, L, C	5.0 -7.5	S, PS
Rare	M/ Adapt, Wild	Salix sericea	SilkyWillow	species	2 to 6	4 to 12 ft	Low-Mod	M, Mo, W	Low-Mod	S, L, C	5.0 -7.0	S, PS
Uncommon	M/ Adapt, Wild	Sambucus canadensis	Black Elderberry	species	4 to 9	6 to 8 ft	High	D, M, Mo, W	Low	S, L, C, G	5.0-8.0	S, PS. PSh
Rare	M/ Adapt, Wild	Sambucus racemosa	Red Elderberry	species	4 to 6	6 to 8 ft	Mod-High	D, M, Mo	Low	S, L, G	5.0-8.0	PS. PSh, Sh
Rare	H/ Orn, Adapt, Wild	Spirea alba	Meadowsweet	species	3 to 5	3 to 5 ft	Mod-High	D, M, Mo	Low-Mod	S, L, C	5.0 -7.5	S, PS. PSh
Rare	M/ Orn, Adapt, Wild	Spirea tomentosa	Steeplebush	species	4 to 6	3 to 5 ft	Low-Mod	M, Mo, W	Low-Mod	S, L, C	4.0 -7.0	S, PS. PSh
Rare	L/ Wild	Symphoricarpos orbiculatus	Coral berry	species	3 to 7	3 to 4 ft	High	D, M, Mo	Low	S, L, G	5.0-8.0	S, PS. PSh,
Rare	L/ Wild	Symphoricarpos albus	Snowberry	species	3 to 7	3 to 4 ft	High	D, M	Low-Mod	S, L, C, G	5.0-8.0	S, PS. PSh,
Common	H/ Orn, Wild	Vaccinium corymbosum	Highbush Blueberry	many cultivars	3 to 7	6 to 8 ft	Mod-High	D, M, Mo	Low-Mod	S, L	4.0-6.0	S, PS. PSh,
Rare	H/ Orn, Adapt, Wild	Viburnum acerifolium	Maple leaf viburnum	species	4 to 8	4 to 6 ft	High	D, M, Mo	Low-Mod	WD, L, C, G	4.0 -7.0	PS. PSh, Sh
Uncommon	H/ Orn, Adapt, Wild	Viburnum cassinoides	Witherood Viburnum	species	3 to 8	6 to 12 ft	Mod	M, Mo, W	Mod	L, C	5.0 -7.0	S, PS
Common	H/ Orn, Adapt, Wild	Viburnum dentatum	Arrowwood viburnum	many cultivars " Bar harbor, Bluechip	3 to 8	6 to 10 ft	High	D, M, Mo, W	Low-Mod	L, C	5.0-8.0	S, PS. PSh, Sh
Moderate	H/ Orn, Adapt, Wild	Viburnum nudum	Winterthur viburnum	species, cultivars	5 to 9	6 to 12 ft	Low-Mod	M, Mo, W	Mod	L, C	5.0 -7.0	S, PS
Common	M/ Adapt, Wild	Viburnum trilobum	American Cranberrybush	species, cultivars	2 to 7	6 to 10 ft	Mod-High	M, Mo, W	Low-Mod	L, C	5.0-8.0	S, PS. PSh,
Small Trees												
Uncommon	L/ Orn	Acer pennsylvanica	Striped maple	species	3 to 7	15 to 20 ft	Low-Mod	D, M, Mo	Mod-High	WD, S, L,	5.0 -7.0	PS. PSh
Rare	M/ Orn	Aesculus parviflora	Bottlebrush Buckeye	species	5 to 9	6 to 8ft	Low-Mod	M, Mo	Mod	WD, S, L,	5.0-8.0	S, PS. PSh
Common	H/ Orn, Adapt, Wild	Amelanchier arborea	Downy Serviceberry	species, cultivars	4 to 9	15 to 25 ft	Mod	D, M, Mo	Low-Mod	S, L, G	5.0-7.5	S, PS. PSh
Common	H/ Orn, Adapt, Wild	Amelanchier canadensis	Shadblow serviceberry	species, cultivars	3 to 8	10 to 20 ft	Mod	M, Mo, W	Low-Mod	S, L, C	5.0-7.5	S, PS. PSh
Common	H/ Orn, Adapt, Wild	Amelanchier x grandiflora	Serviceberry	all cultivars	4 to 9	15 to 25 ft	Mod-High	D, M, Mo	Mod	S, L, G	5.0-7.5	S, PS. PSh
Common	H/ Orn, Adapt, Wild	Amelanchier laevis	Alleghany serviceberry	species, cultivars	4 to 9	15 to 25 ft	Mod-High	D, M, Mo	Mod	S, L, G	5.0-7.5	S, PS. PSh
Common	M/ Orn	Cercis canadensis	Red Bud	species, cultivars	4 to 9	20 to 25 ft	Low-Mod	WD, M, Mo	Mod-High	WD, L	5.0-8.0	S, PS. PSh
Uncommon	M/ Orn, Adapt	Chionanthus virginicus	Fringe tree	species	4 to 9	8 to 25 ft	Mod-High	D, M, Mo	Mod	S, L, C	5.0-8.0	S, PS. PSh

Availability: Common, Medium, Uncommon, Rare

Value: H = High; M = Medium; L = Low; ADAPTable; ORNamental; WILDlife

Drought tolerance: High; Moderate; Low

Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet

Fertility: High; Moderate; Low

Soils: S = Sand; L = Loam; C = Clay; G = Gravel

Light Requirement: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade

Table 2: Native Shrubs and Small Trees for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Cultivars	Zone	Height range	Drought tolerance	Moisture	Fertility	Soils	pH Range	Light Requirement
Uncommon	H/ Orn, Wild	Cornus alternifolia	Alternate-leaf Dogwood	species	3 to 7	10 to 20 ft	Mod	M, Mo	Mod	WD, L, C	5.0-7.5	S, PS, PSh
Common	M/ Orn, Wild	Cornus floridus	Flowering Dogwood	species, cultivars	5 to 9	15 to 25 ft	Low-Mod	M, Mo	Mod-High	WD, L, C	5.0-7.0	S, PS, PSh
Rare	H/ Orn, Adapt	Cotinus obovatus	American Smoketree	species	4 to 8	15 to 25 ft	High	D, M, Mo	Low	WD, S, L, G	5.0-8.0	S, PS. PSh
Moderate	H/ Orn, Adapt	Craetagus species	Hawthorn	many species, cultivars	4 to 8	20 to 30 ft	High	D, M, Mo	Low	WD, L, C	5.0-8.0	S, PS
Uncommon	H/ Orn, Adapt	Creatagus crus-galli inermis	Cockspur Hawthorn	species	4 to 6	20 to 25 ft	High	D, M, Mo	Low	WD, L, C	5.0-8.0	S, PS
Uncommon	H/ Orn, Adapt	Creatagus phaenopyrum	Washington Hawthorn	species, cultivars	4 to 8	20 to 30 ft	High	D, M, Mo	Low	WD, L, C	5.0-8.0	S, PS
Uncommon	H/ Orn, Adapt	Creatagus mollis	Downy Hawthorn	species	3 to 6	20 to 25 ft	High	D, M, Mo	Low	WD, L, C	5.0-8.0	S, PS
Uncommon	H/ Orn, Adapt	Craetagus viridis	Winter King Hawthorn	Cultivar "winter King"	5 to 9	20 to 25 ft	High	D, M, Mo	Low	WD, L, C	5.0-8.0	S, PS
Uncommon	M/ Adapt, Wild	Prunus americana	American Plum	species	3 to 8	15 to 25 ft	Mod	D, M	Low-Mod	S, L, C, G	5.0-8.0	S, PS
Uncommon	H/ Orn, Adapt, Wild	Prunus virginiana	Chokecherry	species	2 to 6	15 to 25 ft	High	D, M, Mo	Low	S, L, C, G	5.0 – 7.5	S, PS, PSh
Moderate	H/ Orn, Adapt, Wild	Prunus virginiana	Chokecherry	"Schubert, Canada Red"	2 to 6	15 to 25 ft	High	D, M, Mo	Low	S, L, C, G	5.0 – 7.5	S, PS
Rare	L/ Adapt	Staphylea trifolia	Bladdernut	species	3 to 8	10 to 15 ft	Mod	M, Mo	Mod-High	S, L, C	5.0-8.0	S, PS, PSh
Uncommon	H/ Adapt, Wild	Viburnum lentago	Nanny Berry	species	2 to 7	10 to 20 ft	Mod-High	M, Mo, W	Low-Mod	L, C	5.0-8.0	S, PS
Uncommon	H/ Adapt, Wild	Viburnum prunifolium	Blackhaw	species	3 to 9	10 to 15 ft	High	D, M, Mo	Low-Mod	L, C	5.0-8.0	S, PS, PSh

Availability: Common, Medium, Uncommon, Rare

Value: H = High; M = Medium; L = Low; ADAPTable; ORNamental; WILDlife

Drought tolerance: High; Moderate; Low

Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet

Fertility: High; Moderate; Low

Soils: S = Sand; L = Loam; C = Clay; G = Gravel

Light Requirement: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade

Table 3: Native Wildflowers and Grasses for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Zone	Height Range	Mioisture	Soil	pH Range	Light Requirement
Medium	M/ Orn, Adapt	Actaea pachypoda	White Dolls Eye	3 to 8	1'-2'	M, Mo	L	5.0-7.5	PSh, Sh
Uncommon	M/ Orn, Adapt	Actaea rubra	Red Baneberry	2 to 8	1'-2'	M, Mo	L	5.0-7.5	PSh, Sh
Common	H/ Orn, Adapt, Wild	Agastache foeniculum	Lavender Hyssop	3 to 9	2' - 3'	D, M,	S, L, C, G		S, PS
Medium	M/ Orn, Adapt, Wild	Allium cernuum	Nodding Pink Onion	3 TO 9	1'-2'	M, Mo	S, L, C	5.0-7.0	S, PS
Uncommon	M/ Orn, Adapt	Amsonia tabernaemontana	Blue Star	3 to 9	3'	D, M, Mo	S, L, C	5.0-7.0	S, PS
Medium	M/ Orn, Adapt	Anemone canadensis	Canada Anemone	2 to 9	1' - 2'	M, Mo	L	5.0-6.5	PS, PSh, Sh
Common	H/ Orn, Adapt, Wild	Aquilegia canadensis	Columbine	3 to 9	1' - 2'	D, M	WD	5.0-8.0	S, PS, PSh,
Common	M/ Orn, Adapt	Arisaema triphyllum	Jack-in-the-pulpit	3 to 9	1'	M, Mo	S, L	4.5-6.5	PS, PSh, Sh
Medium	H/ Orn, Adapt	Aruncus dioicus	Goat's Beard	4 to 8	3' - 5'	Mo	Rich	5.0-6.5	PS, PSh, Sh
Medium	M/ Orn	Asarum canadense	Wild Ginger	3 to 8	<1'	M, Mo	WD, S, L, G	5.0-8.0	PSh, Sh
Medium	H/ Orn, Adapt, Wild	Asclepias incarnata	Swamp Milkweed	3 to 9	2' - 4'	M, Mo, W	S, L, C	5.0-8.0	S, PS,
Common	H/ Orn, Adapt, Wild	Asclepias tuberosa	Butterfly Weed	3 to 9	2' - 3'	D, M	S, L	5.0-7.0	S, PS,
Medium	H/ Orn, Adapt, Wild	Aster azureus	Sky Blue Aster	3 to 9	1' - 3'	D, M	S, L	5.5-7.5	S, PS,
Uncommon	M/ Orn, Adapt, Wild	Aster cordifolius	Heart Leaved Aster	3 to 8	2' - 3'	D, M	S, L, C	5.5-7.5	PS, PSh, Sh
Uncommon	M/ Orn, Adapt, Wild	Aster divaricatus	White Wood Aster	3 to 8	1' - 2'	D, M	S, L, C	6.0-8.0	PS, PSh, Sh
Medium	H/ Orn, Adapt, Wild	Aster laevis	Smooth Aster	3 to 9	1' - 3'	D, M	S, L	5.5-7.5	S, PS
Common	H/ Orn, Adapt, Wild	Aster novae-angliae	New England Aster	3 to 9	2' - 5'	M, Mo	S, L, C	5.0-7.5	S, PS
Medium	H/ Orn, Adapt, Wild	Aster novi-belgii	New York Aster	3 to 9	1' - 3'	M, Mo		5.5-7.0	S, PS
Medium	H/ Orn, Adapt, Wild	Baptisia australis	Blue False-indigo	4 to 8	3' - 4'	D, M,	S, L, C	5.0-6.5	S, PS
Uncommon	M/ Orn, Adapt, Wild	Baptisia bracteata	Cream False-indigo	4 to 8	1' - 2'	D, M,	S, L	5.0-6.0	S, PS
Uncommon	M/ Orn, Adapt, Wild	Baptisia lactea	White False-indigo	4 to 8	3' - 5'	M, Mo	S, L, C	5.0-6.0	S, PS
Medium	M/ Orn, Adapt, Wild	Boltonia asteroides	False Aster	4 to 9	3' - 4'	D, M, Mo	S, L, C	4.5-6.0	S, PS
Uncommon	L/ Orn, Adapt	Caltha palustris	Marsh-marigold	1 to 8	1' - 2'	Mo, W	L, C	5.0-7.0	S, PS, PSh, Sh
Uncommon	L/ Orn, Adapt	Caulophyllum thalictroides	Blue Cohosh	3 to 8	2' - 3'	M, Mo	S, L	5.5-7.5	PSh, Sh
Medium	M/ Orn, Adapt, Wild	Chelone glabra	White Turtle Head	3 to 9	2' - 3'	M, Mo, W	S, L, C	5.0-6.5	S, PS, PSh
Medium	M/ Orn, Adapt, Wild	Chelone lyonii	Pink Turtle Head	4 to 9	2' - 3'	M, Mo, W	S, L, C	5.0-6.5	S, PS, PSh
Uncommon	H/ Orn, Adapt	Chrysogonum virginianum	Gold Star	5 to 9	<1'	D, M, Mo	S, L, C	5.0-7.5	S, PS, PSh

Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet
Soils: S = Sand; L = Loam; C = Clay; G = Gravel
Light: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade

Table 3: Native Wildflowers and Grasses for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Zone	Height Range	Mioisture	Soil	pH Range	Light Requirement
Common	H/ Orn, Adapt	Cimicifuga racemosa	Black cohosh	3 to 9	3'- 5'	D, M, Mo	L, G	5.0-6.8	PS, PSh, Sh
Rare	L/ Adapt	Clematis virginiana	Virgin's Bower	3 to 9	Vine	M, Mo, W	S, L, C	5.0-7.0	S, PS
Common	H/ Orn, Adapt, Wild	Coreopsis lanceolata	Lanceleaf Coreopsis	3 to 9	1'-2'	D, M	S, L	5.0-7.0	S, PS
Common	H/ Orn, Adapt, Wild	Coreopsis verticillata	Threadleaf Tickseed	4 to 9	1'-2'	M, Mo	S, L	5.0-7.0	S, PS
Uncommon	M/ Orn, Adapt, Wild	Dalea candida	White Prairie Clover	3 to 9	1'-2'	D, M	S, L	5.0-7.0	S
Uncommon	M/ Orn, Adapt, Wild	Dalea purpurea	Pale-Purple Prairie Clover	3 to 9	1'-2'	D, M	S, L, C	5.0-7.0	S
Medium	H/ Orn, Adapt	Delphinium exaltatum	Tall Blue Larkspur	4 to 9	1'-2'	D, M	S, L		S, PS
Medium	M/ Orn	Dicentra exima	Wild Bleeding Heart	4 to 9	1'	M, Mo	S, L, C	5.0-8.0	S, PS, PSh, Sh
Uncommon	M/ Orn	Diphylleia cymosa	Umbrella Leaf	4 to 8	2'	Mo, W	L	6.0-8.0	PSh, Sh
Medium	H/ Orn, Adapt, Wild	Echinacea pallida	Pale-Purple Coneflower	3 to 9	2'to 3'	D, M	WD, S, L, C	6.0-7.5	S, PS
Uncommon	H/ Orn, Adapt, Wild	Echinacea paradoxa	Yellow Coneflower	4 to 9	2'to 3'	D, M	WD, S, L, C	6.0-8.0	S
Common	H/ Orn, Adapt, Wild	Echinacea purpurea	Purple Coneflower	3 to 9	2'to 3'	D, M	WD, S, L, C	6.0-7.0	S, PS
Rare	M/ Orn, Adapt	Eryngium yuccifolium	Rattlesnake master	4 to 8	3'- 5'	D, M	S, L, C	5.0-7.0	S
Common	M/ Orn, Adapt, Wild	Eupatorium coelestinum	Hardy Ageratum	4 to 9	2'- 3'	M, Mo, W	S, L, C	5.5-7.5	S, PS
Uncommon	H/ Orn, Adapt, Wild	Eupatorium maculatum	Spotted Joe-pye-weed	3 to 9	3'-6'	M, Mo, W	S, L, C	5.0-7.0	S, PS, PSh
Common	H/ Orn, Adapt, Wild	Eupatorium purpureum	Purple Joe-pye-weed	3 to 8	3'-6'	M, Mo, W	S, L, C	5.0-7.0	S, PS, PSh
Medium	M/Adapt, Wild	Eupatorium rugosum	White Snakeroot	4 to 9	2'- 3'	M, Mo	S, L, C	5.5-7.5	S, PS, PSh
Uncommon	M/ Orn, Adapt	Filipendula rubra	Queen of the Prairie	3 to 8	6'- 8'	M, Mo	S, L, C	5.0-7.0	S, PS
Common	M/ Orn, Adapt	Gaillardia pulchella	Blanket Flower	4 to 8	1'- 3'	D, M	S, L	7.0-8.5	S
Common	M/ Orn, Adapt	Gaillardia x grandifolia	Blanket Flower	4 to 8	1'- 3'	D, M	S, L		S
Medium	M/ Orn, Adapt	Geranium maculatum	Wild Geranium	3 to 9	1'	D, M	L	4.5-6.5	S, PS, PSh, Sh
Uncommon	M/ Orn, Adapt	Geum triflorum	Prairie Smoke	4 to 8	<1'	D, M	S, L		S, PS
Common	H/ Orn, Adapt, Wild	Heliopsis helianthoides	Ox Eye Sunflower	3 to 9	3'- 5'	D, M	S, L, C	5.0-7.0	S, PS
Uncommon	M/ Orn, Adapt	Hepatica acutiloba	Sharp Lobed Hepatica	3 to 8	<1'	M, Mo	L	6.0-8.0	PS, PSh
Common	H/ Orn, Adapt	Heuchera americana	Alumroot	3 to 9	1'- 2'	D, M	L	4.0-8.5	S, PS
Uncommon	H/ Orn, Adapt	Iris cristata	Crested Iris	4 to 9	<1'	M, Mo	S, L	4.0-8.5	PS, PSh
Medium	H/ Orn, Adapt, Wild	Iris versicolor	Blue Flag Iris	4 to 9	2'- 3'	M, Mo, W	S, L, C	5.0-6.5	S, PS, PSh
		Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet **Soils**: S = Sand; L = Loam; C = Clay; G = Gravel **Light**: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade							

Table 3: Native Wildflowers and Grasses for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Zone	Height Range	Mioisture	Soil	pH Range	Light Requirement
Uncommon	H/ Orn, Adapt, Wild	Liatris aspera	Rough Blazing Star	3 to 9	2'- 4'	D, M	WD, S, L	6.0-7.0	S
Uncommon	H/ Orn, Adapt, Wild	Liatris borealis	Northern Blazing Star	4 to 8	2'- 3'	D, M	WD, S, L	6.0-7.0	S
Common	H/ Orn, Adapt, Wild	Liatris pycnostachya	Prairie Blazing Star	3 to 9	3'- 5'	M, Mo	S, L, C	6.0-8.0	S, PS
Common	H/ Orn, Adapt, Wild	Liatris spicata	Dense Blazing Star	4 to 8	3'- 5'	M, Mo	S, L, C	6.0-7.0	S
Uncommon	M/ Orn, Adapt	Lilium superbum	Turk's Cap Lily	4 to 9	3'- 8'	M, Mo, W			S, PS
Medium	M/ Orn, Wild	Lobelia cardinalis	Cardinal Flower	3 to 9	2'- 4'	Mo, W	S, L	5.0-7.0	S, PS, PSh
Common	H/ Orn, Adapt, Wild	Lobelia siphilitica	Great Blue Lobelia	3 to 9	2'- 3'	M, Mo, W	S, L, C	4.0-6.0	S, PS
Common	H/ Orn, Adapt, Wild	Monarda didyma	Bee Balm	3 to 9	3'- 4'	M, Mo	S, L, C	5.0-7.0	S, PS, PSh
Common	H/ Orn, Adapt, Wild	Monarda fistulosa	Lavender Wild- bergamot	3 to 9	3'- 4'	M, Mo, W	S, L, C	6.0-8.0	S, PS, PSh
Common	M/ Orn, Adapt, Wild	Penstemon digitalis	Smooth Penstemon	3 to 9	2'- 4'	M, Mo	S, L, C	5.5-7.0	S, PS
Medium	M/ Orn, Adapt, Wild	Penstemon grandiflorus	Beard Tongue	3 to 9	2'- 5'	D, M	S, G	6.0-7.0	S
Medium	H/ Orn, Wild	Phlox divaricata	Wild Blue Phlox	3 to 9	1'	M, Mo	S, L, C	5.0-6.5	PS, PSh, Sh
Common	H/ Orn, Wild	Phlox paniculata	Summer Phlox	3 to 9	3'- 5'	M, Mo	S, L, C	5.0-6.0	S, PS
Common	H/ Orn, Adapt	Phlox subulata	Moss Phlox	3 to 9	<1'	D, M	WD, S, G	5.0-6.0	S
Uncommon	M/ Orn, Adapt	Podophyllum peltatum	May Apple	3 to 9	1'- 2'	D, M, W	WD, S, L, C	4.5-7.5	PS, PSh
Medium	M/ Orn, Adapt	Polemonium reptans	Jacobs Ladder	3 to 8	1'	M, Mo	L	6.0-7.5	PS, PSh
Common	M/ Orn, Adapt	Polygonatum biflorum	Solomon's Seal	3 to 9	1'- 3'	M, Mo	Rich, S, L, C	4.5-8.0	PS, PSh, Sh
Uncommon	H/ Orn, Adapt, Wild	Rudbeckia fulgida	Eastern Coneflower	3 to 9	2'- 3'	M		5.0-6.0	S, PS
Common	H/ Orn, Adapt, Wild	Rudbeckia hirta	Black-eyed Susan	3 to 9	2'- 3'	D, M		6.0-7.0	S, PS
Medium	H/ Orn, Adapt, Wild	Rudbeckia triloba	Brown Eyed Susan	3 to 9	2'- 3'	M			S, PS
Medium	H/ Orn, Adapt	Sanguinaria canadensis	Blood Root	3 to 9	<1'	M	WD	4.5-7.0	PS, PSh, Sh
Medium	H/ Orn, Adapt, Wild	Smilacina racemosa	False Solomon Seal	3 to 8	1'- 3'	M		4.5-7.0	PS, PSh, Sh
Uncommon	M/ Orn, Adapt, Wild	Solidago caesia	Blue Stemmed Goldenrod	3 to 9	1'- 3'	D, M		5.5-7.0	S, PS, PSh, Sh
Uncommon	M/ Orn, Adapt, Wild	Solidago flexicaulis	Zigzag Goldenrod	3 to 8	1'- 4'	D, M		5.5-7.0	S, PS, PSh, Sh
Uncommon	H/ Orn, Adapt, Wild	Solidago speciosa	Showy Goldenrod	3 to 9	2'- 5'	D, M		5.0-6.5	S, PS
Medium	M/ Orn, Adapt	Stylophorum diphyllum	Celandine Poppy	4 to 8	1'- 2'	M		6.0-7.0	PS, PSh, Sh
Uncommon	L/ Adapt	Thalictrum dioicum	Early Meadow Rue	3 to 8	1'- 3'	M		5.0-6.0	PS, PSh, Sh

Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet
Soils: S = Sand; L = Loam; C = Clay; G = Gravel
Light: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade

Table 3: Native Wildflowers and Grasses for use in Landscape Plantings

Availability	Value	Latin Name	Common Name	Zone	Height Range	Mioisture	Soil	pH Range	Light Requirement
Common	M/ Orn, Adapt	Thalictrum pubescens	Tall Meadow Rue	3 to 9	3′ - 8′	M, W		5.0-6.5	S, PS, PSh, Sh
Common	H/ Orn, Adapt	Tiarella cordifolia	Foam Flower	3 to 9	<1′	M		5.0-6.5	PS, PSh, Sh
Medium	H/ Orn, Adapt, Wild	Tradescantia virginiana	Virginia Spiderwort	3 to 9	1′ - 2′	M	Rich	5.0-6.5	S, PS, PSh
Medium	M/ Orn, Adapt, Wild	Verbena hastata	Blue Vervain	3 to 9	2′ - 4′	M, W		5.0-6.0	S, PS
Uncommon	M/Adapt, Wild	Vernonia noveboracensis	NY Ironweed	3 to 9	3′ - 5′	M, W	Rich	4.5-8.0	S, PS
Medium	M/Adapt, Wild	Veronicastrum virginicum	Culvers Root	3 to 9	3′ - 5′	M, W		5.0-6.0	S, PS
Grasses									
Common	H/ Orn, Adapt, Wild	Andropogon gerardii	Big Bluestem	3 to 9	5′to 8′	D, M, Mo	S, L, C		S
Rare	M/ Orn, Adapt, Wild	Bouteloua gracilis	Blue Gramma	3 to 8	1′to 2′	D, M	S, L		S, PS
Uncommon	H/ Orn, Adapt, Wild	Bouteloua curtipendula	Side Oats Gramma	3 to 8	2′to 3′	D, M	S, L		S, PS
Rare	L/Adapt	Carex appalachica	Appalachian Sedge	3 to 7	8 to 10″	D, M	S, L		PS, PSh, Sh
Rare	M/Adapt	Carex eburnea	Ivory Sedge	4 to 6	6″	D, M, Mo	S, L, G		PS, PSh, Sh
Medium	M/Adapt	Carex pensylvanica	Pesnnylvania Sedge	4 to 8	6″to 8″	D, M	S, L, G		PS, PSh, Sh
Medium	H/ Orn, Adapt, Wild	Chasmanthium latifolium	Northern Sea Oats	4 to 8	3′to 4′	D, M, Mo	S, L		S, PS, PSh
Medium	M/Adapt, Wild	Elymus canadensis	Canada Wild Rye	3 to 8	4′ - 5′	D, M, Mo	S, L, C		S, PS
Rare	M/ Orn, Adapt	Elymus glaucus	Blue Wild Rye	4 to 8	2′-3′	D, M, Mo	S, L		S, PS
Uncommon	M/ Orn, Adapt	Elymus hystrix	Bottlebrush Grass	3 to 8	2′to 5′	D, M	S, L		PS, PSh, Sh
Medium	M/Adapt, Wild	Elymus virginicus	Virginia Wild Rye	3 to 8	4′ - 5′	M, Mo	S, L, C		S, PS, PSh
Rare	M/ Orn, Adapt	Eragrostis spectabilis	Purple Lovegrass	5 to 9	2′to 3′	D, M, Mo	S, L		S, PS
Rare	M/ Orn, Adapt	Koeleria macrantha	June Grass	3 to 8	2′to 3′	D, M	S, L, G		S, PS
Rare	M/ Orn, Adapt	Muhlenbergia capillaris	Muhly Grass, Hairgrass	3 to 6	2′to 3′	D, M, Mo	S, L, G		S, PS
Common	M/ Adapt, Wild	Panicum virgatum	Switch Grass	5 to 9	3′to 6′	D, M, Mo, W	S, L, C		S, PS
Common	H/ Orn, Adapt, Wild	Schizachyrium scoparium	Little Bluestem	4 to 9	2′to 3′	D, M	S, L		S, PS
Common	H/ Orn, Adapt, Wild	Sorghastrum nutans	Indian Grass	4 to 8	5′to 7′	D, M, Mo	S, L, C		
Common	H/ Orn, Adapt, Wild	Sporobolus heterolepis	Prairie Dropgrass	3 to 9	2′to 4′	D, M	S, L, C		
Rare	M/ Orn, Adapt	Deschampsia flexuosa	Wavy Hairgrass	3 to 8	1′to 2′	D, M	S, L, G		
		Moisture: WD = Well drained; VD = Very dry; D = Dry; M = Medium; Mo = Moist; W = Wet **Soils**: S = Sand; L = Loam; C = Clay; G = Gravel **Light**: S = Full sun; PS= Partial sun; PSh = Partial shade; Sh = Full shade							

Table 4: Non-native Trees, Shrubs, and Wildflowers that are acceptable to use in Landscape Plantings

Code	Latin Name	Common Name
Large Shade Trees		
B, D	Acer burgeranum	Trident Maple
B, D	Acer campestre	English Maple
A	Acer grisium	Paperbark Maple
B, E	Acer palmatum (green)	Japanese Maple
B, E	Acer palmatum atropurpureum	Purpleleaf Japanese Maple
A	Acer palmatum dissectum	Threadleaf Japanese Maple
B, D	Aesculus x carnea	Ruby-red Horsechestnut
B, D	Betula albo-sinensis	Himilayan Birch
B, D	Betula jacquemontii	Jacquemonti Birch
B, D	Betula platyphylla japonica	Whitespire Birch
A	Carpinus betulus	European Hornbeam
A	Carpinus betulus fastigiata	Upright Hornbeam
B	Cercidiphyllum japonicum	Katsura Tree
B	Chionanthus retusus	Chinese Fringe Tree
B	Corylus colurna	Turkish Filbert
C, D	Eucommia ulmoides	Rubber Tree
A	Fagus sylvatica	European Beech
A	Fagus sylvatica purpurea	Purpleleaf European Beech
A	Ginko biloba	Ginko
A	Metasequoia glyptostroboides	Dawn Redwood
A	Parrotia persica	Persian Parrotia
B	Platanus x acerifolia	London Planetree
A	Prunus sargentii	Sargent Cherry
A	Prunus serrulata	Oriental Cherry
A	Prunus subhirtella	Flowering Cherry
A	Stewartia koreana	Korean Stewartia
A	Stewartia pseudocamillia	Japanese Stewartia
B	Styrax japonicus	Japanese Snowbell
D, E	Styrax obassia	Fragrant Snowbell
A	Tilia cordata	Little-leaf Linden
A	Zelkova serrata	Japanese Zelkova
Small Flowering Trees		
B	Cornus kousa	Kousa Dogwood
D, E	Cornus mas	Cornelian Cherry Dogwood
B, D	Laburnum x watereri	Golden Chain Tree
B	Magnolia stellata	Star Magnolia
B	Magnolia x soulangiana	Saucer Magnolia
B	Magnolia x hyrbird	Hyrbrid Magnolia
B	Magnolia x loebneri	Loebner Magnolia
E	Malus species	Crabapple
B	Syringa reticulata	Japanese Tree Lilac
Non-native shrubs		
D	Abelia mosanensis	Fragrant Abelia
D	Abeliophyllum distichum	White Forsythia
A	Buxus sempervirons	Common Boxwood
A	Buxus microphylla	Boxwood
E	Caryopteris x clandonensis	Bluebeard Shrub
A	Chamaecyperis obtusa	Falsecypress
A	Chamaecyperis pisifera	Falsecypress
A	Chamaecyperis species	Falsecypress
B	Chionanthus retusus	Chinese Fringe Tree
B	Clethra barbinervis	Japanese Cletha
B	Cotinus coggygria	Smokebush
D	Daphne cneorum	Rose Daphne
B	Deutzia gracilis	Slender Deutzia
B	Deutzia species	Deutzia
D	Enkianthus campanulatus	Redvien enkianthus
E	Forsythia x intermedia	Forsythia
A	Hamamelis mollis	Chinese Withchazel
A	Hamamelis x intermedia	Hybrid Witchhazel
E	Hibiscus syriacus	Rose of Sharon
B	Hydrangea macrophylla	Bigleaf Hydrangea
B	Hydrangea paniculata	Panicle Hydrangea
B	Hydrangea serrata	Hydrangea
B	Hypericum species	St John's Wort
B	Ilex crenata	Japanese Holly
B	Ilex x meserveae	Blue Holly
B	Juniperus chinensis	Chinese Juniper
B	Juniperus procumbens	Japanese Juniper
D	Kerria japonica	Japanese Kerria
C, D	Kolkwitzia amabilis	Beautybush
A, D	Leptodermis oblonga	Leptodermis
A, D	Leucothoe fontanesiana	Fetterbush
B	Pinus mugo	Mugo Pine
C, D	Philadephus coronarius	Mock Orange

A: Low risk of escape from cultivation.
B: Low risk of escape. Recommend using an equivalent native replacement.
C: Questionable landscape value. Recommend using a more desirable native replacement.
D: Seldom used in landscaping. Recommend using a native replacement.
E: Known to escape cultivation. Recommend using a native replacement.

Table 4: Non-native Trees, Shrubs, and Wildflowers that are acceptable to use in Landscape Plantings

Code	Latin Name	Common Name	Code	Latin Name	Common Name
B, D	Philadephus x virginalis	Mock Orange	**Wildflowers**		
A, D	Pieris japonica	Japanese Pieris	B	Achilea aquilegifolium	Fern-leaf Yarrow
A, B	Rhododendron species	Rhododendron	B	Achilea filipendula	Fern-leaf Yarrow
A, B	Rhododendron species	Azaleas	B	Achilea millefolium	Common Yarrow
B	Rosa x hyrbrids	Hybrid Tea Rose	B, C	Alchemilla mollis	Lady's Mantle
B	Salix purpurea 'Nana'	Arctic Blue Willow	B	Aquilegia x hybrida	Hybrid Columbine
E	Spirea nipponica	Nippon Spirea	B	Artemisia schmidtiana	Silver Mound Artemisia
C, D	Spirea prunifolia	Bridalwreath Spirea	B	Astilbe chinensis	Chinese Astilbe
E	Spirea x bumalda	Spirea	B	Astilbe x arendsii	Astilbe
C, D	Spirea x vanhouttei	Vanhoutte Spirea	B	Astilbee japonica	Japanese Astilbe
B	Stephanandra incisa	Cutleaf Stephanadra	B	Aurinia saxatilis	Basket of Gold
B	Syringa meyeri	Korean Lilac	B	Brunnera macrophylla	Siberian Bugloss
B	Syringa patula	Manchurian Lilac	B	Campanula carpatica	Carpathian Harebell
B	Syringa vulgaris	Common Lilac	B	Chrysanthemum x morifolium	Hardy Mum
B	Taxus baccata	English Yew	B	Delphinium elatum	Candle larkspur
B	Taxus cuspidata	Japanese Yew	B	Dianthus deltoides	Garden Pinks
B	Taxus x media	Hybrid Yew	B	Dianthus gratianopolitanus	Cheddar Pinks
B	Thuja orientalis	Oriental Arborvitae	B	Dicentra spectabilis	Bleeding Heart
B	Viburnum carlesii	Koreanspice Viburnum	B	Euphorbia polychroma	Cushion Spurge
E	Viburnum dilatatum	Linden Viburnum	B	Geranium sanguineum	Blood-red Cranesbill
B	Viburnum ferreri 'Nanum'	FragrantViburnum	B	Hermocallis x hybrida	Hybrid Daylilly
E	Viburnum lantana	Wayfaringtree Viburnum	A	Heuchera species	Alumroot
B	Viburnum plicatum	Japanese Snowball Bush	B	Hosta Species	Hosta
B	Viburnum plicatum tomentosum	Doublefile Viburnum	B	Ligularia dentata	Bigleaf Ligularia
B	Viburnum pragense 'Decker'	Prague Viburnum	B	Lychnis viscaria	German Catchfly
B	Viburnum rhytidophyllum	Leatherleaf Viburnum	B	Paeonia suffruticosa	Tree Peony
E	Viburnum sargentii	Onandaga Viburnum	B	Platycodon grandiflorus	Bell Flower
B	Viburnum sieboldii	Siebold Viburnum	B	Pulsatilla vulgaris	Pasque Flower
B	Viburnum x burkwoodii	Burkwood Viburnum	B	Salvia nemorosa	Perennial Sage
B	Viburnum x judii	Judd Viburnum	B	Salvia pratensis	Meadow Sage
B	Viburnum x rhytidophylloides	Leatherleaf Viburnum	B	Salvia x superba	Perennial Salvia
B	Wiegela florida	Wiegela	B	Scabiosa columbaria	Pinchusion Flower
			B	Sedum species	Sedum
			B	Sedum telephium	Autumn Joy' Sedum
			B	Veronica spicata	Speedwell

A: Low risk of escape from cultivation.
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C: Questionable landscape value. Recommend using a more desirable native replacement.
D: Seldom used in landscaping. Recommend using a native replacement.
E: Known to escape cultivation. Recommend using a native replacement.

Table 5: Non-native Trees, Shrubs, Wildflowers and Grasses that are considered invasive and should never be used in Landscape Plantings

Code	Latin Name	Common Name	Code	Latin Name	Common Name
Large Shade Trees			A, C, E	Celasstrus scandens	Oriental Bittersweet
B, C, E	Acer ginnala	Amur Maple	C, D	Chaenomeles japonica	Japanese Quince
A, D	Acer platanoides	Norway Maple	C, D	Chaenomeles speciosa	Flowering Quince
A, D	Acer platanoides 'Crimson King'	Norway Maple "Crimson King"	C, D	Cornus sanguinea	Blood-twig Dogwood
A, D, E	Acer pseudoplatanus	Sycamore maple	C, D	Cotoneaster apiculatus	Cranberry Cotoneaster
B, C, E	Acer tartaricum	Tartarian Maple	C, D	Cotoneaster dammeri	Cotoneaster
A, D, E	Ailanthus altissima	Tree of Heaven	C, D	Cotonester horizontalis	Rock Cotoneaster
C, D, E	Alnus glutinosa	Black Alder	C, D, E	Cytisus scopiarus	Scotch Broom
C, D, E	Koelreuteria paniculata	Golden rain tree	A, C, D	Elaeagnus angustifolia	Russian Olive
B, D, E	Maakia amurense	Amur Maackia	A, C, D	Elaeagnus umbellata	Autumn Olive
B, D, E	Paulownia tomentosa	Princess Tree	A, C, D	Euonymus alatus	Burning bush
B, D, E	Phellodendron amurense	Amur corktree	A, C, D	Euonymus fortunei	Wintercreeper
B, D, E	Quercus acutissima	Sawtooth Oak	A, C	Hedera helix	English Ivy
C, D, E	Quercus robur	English Oak	A, C, D	Ligustrum species	Privet
C, D, E	Quercus robur 'Fastigiata'	English Oak	A, C, D	Ligustrum vulgare	European Privet
C, D, E	Salix babylonica	Weeping Willow	A, C, D	Ligustrum x vicari	Golden Privet
C, D, E	Salix matsudana	Corkscrew Willow	A, C, D	Lonicera japonica	Japanese Honeysuckle
C, D, E	Sorbus acuparia	Eurpean Mt Ash	A, C, D	Lonicera maackii	Amur honeysuckle
C, D, E	Sorbus alnifolia	Korean Mt Ash	A, C, D	Lonicera morrowii	Morrow Honeysuckle
C, D, E	Styphnolobium japonica	Japanese Scholar Tree	A, C, D	Lonicera species	Honeysuckle
B, D, E	Tilia tomentosa	Siver Linden	A, C, D	Lonicera tartarica	Tartarian Honeysuckle
B, D, E	Ulmus parviflora	Chinese Elm	C, E	Nandina domestica	Heavenly Bamboo
A, D, E	Ulmus pumilla	Siberian Elm	A, C	Pachysandra terminalis	Japanese Pachysandra
			A, C	Parthenocuissus tricuspidata	Boston Ivy
Small Flowering Trees			C, D, E	Prunus cerasifera	Cherry Plum
B	Crataegus laevigata	English Hawthorn	C, D, E	Prunus x cistena	Purple Sand Cherry
C, D, E	Prunus cerasifera	Cherry Plum	C, D, E	Rhodotyphos scandens	Black Jetbead
A	Pyrus calleryana	Bradford Pear	C, D, E	Ribes alpinum	Alpine Currant
A, D, E	Rhamnus frangula	Glossy Buckthorn	A, C, E	Rosa multiflora	Multiflora Rose
A, D, E	Rhamnus cathartica	European Buckthorn	B, C, D	Rosa rugosa	Rugosa Rose
			B, C, D	Rosa species	Rose species
Shrubs			C, D, E	Salix alba	White Willow
B, C, D	Akebia quinata	Fiveleaf Akebia	C, D, E	Salix caprea	French Pussywillow
A, C, D	Ampelopsis brevipedunculata	Porcelainberry	C, D, E	Salix integra	Nishiki Willow
A	Berberis thunbergii	Japanese Barberry	C, D, E	Salix species	Willow species
A	Berberis vulgaris	Common Barberry	C, D	Sambucus nigra	European Elder
C, D	Buddleia davidii	Buttefly Bush	B, C	Spirea japoinca	Japanese Spirea
C, D	Callicarpa dichotoma	Purple Beautyberry	B, C, D	Viburnum opulus	Euro. Cranberry Bush Vib.
C, D	Callicarpa japonica	Japanese Beautyberry	B, C, D	Wisteria floribunda	Wisteria
C, D	Caragana arborescens	Siberian Peashrub	D, E	Prunus domestica	Prune Plum

A: Plant is invasive throughout the northeast.
B: Plant is invasive locally in the northeast.
C: Plant poses moderate to high risk of escape from cultivation.
D: There are desirable native replacements.
E: Is seldom used in landscaping.

Table 5: Non-native Trees, Shrubs, Wildflowers and Grasses that are considered invasive and should never be used in Landscape Plantings

Code	Latin Name	Common Name
Perennials		
B, C, D	Adenophora lilifloria	Ladybells
A, C, D	Aegopodium podagraria	Bishopsweed, Goutweed
B, C, D	Ajuga reptans	Bugleweed
B, C, D	Aster tartaricus	Tartarian Aster
B, C, D	Campanula glomerata	Clustered Bellflower
B, C, D	Campanula rapunculoldes	European Bellflower
B, C, D	Capanula species	Bellflower
B, C, D	Centaurea cyanus	Bachelor's Button, Cornflower
A, C, D	Chrysanthemum leucanthemum	Oxeye Daisy
A, C, D	Chrysanthemum maximum	Shasta Daisy
A, C, D	Coronilla varia	Crown Vetch
A, C, D	Covallaria majalis	Lilly of the Valley
A, C, D	Galium odoratum	Sweet Woodruff
A, C, D	Hemerocallis fulva	Day Lilly
A, C, D	Hesperis matronalis	Dames Rocket
B, C, D	Impatiens balfourii	Balfour's Touch-me-not
B, C, D	Lamiastrum galeobdolon	Yellow Archangel
A, C, D	Lathyrus odoratus	Sweet Pea
C,D	Lychnis coronaria	Rose Campion
B, C	Lysimachia clethroides	Gooseneck Loosestrife
B, C	Lysimachia nummularia	Moneywort, Creeping Jenny
A, D	Lythrum salicaria L	Purple Loosestrife
C, D	Macleaya cordata	Plume Poppy
A, C, D	Myosotis sylvatica	Forget-me-not
B, C, D	Ornithogalum umbellatum	Star of Bethlehem
A, C, D	Pachysandra terminalis	Japanese Pachysandra
A, C, D	Ranunculus ficaria	Lesser Celandine
C, D	Stachys byzantina	Lamb's Ear
B, C, D	Symphytum 'Hidcote Blue'	Hidcote Comfrey
A, C, D	Vinca major	Vinca, Bigleaf Periwinckle
A, C, D	Vinca minor	Vinca,Small-leaf Periwinckle
GRASSES		
B	Arundo donax	Giant Reed
B, C	Cortaderia selloana	Pampass Grass
B, C	Cortaderia jubata	Pampass Grass
C, D	Festuca ovina glauca	Sheep Fescue
2B, D	Helictotrichon sempervirens	Blue Oat grass
B, C, D	Leymus arenarius	Blue Rye
B, D	Liriope muscari	Lilly Turf
B, C, D	Miscanthus sacchariflorus	Siver Banner Grass
C, D	Miscanthus species	Maiden Hair Grass
B, C	Miscanthus sinensis	Japanese silver Grass
B, C	Miscanthus sinensis var. purpurascens	Flame Grass
B, C	Pennisetum alopecuroides	Fountain Grass
B, C	Pennisetum orientale	Oriental Fountain Grass
B, C, D	Phalaris arundinacea	Ribbon Grass
A, C, D	Phalaris arundinacea	Reed Canary Grass

A: Plant is invasive throughout the northeast.
B: Plant is invasive locally in the northeast.
C: Plant poses moderate to high risk of escape from cultivation.
D: There are desirable native replacements.
E: Is seldom used in landscaping.

Flowering dogwood, *Cornus floridus*. Photo by J. Engel

Environmental Benefits of Plants

It is well known that the judicious use of plants in the landscape is a cost effective way to utilize the environmental benefits of plants. Proper selection of the right species and the correct siting of those plants should be considered during the early design stage of any project. The energy savings and environmental benefits of installing plants are accrued indefinitely, while the cost of installation occurs just once. Benefits tend to increase over time as the plants grow, while maintenance costs are low to non-existent.

Proper placement and orientation of trees in relation to buildings reduce air-conditioning requirements by shading them from direct sunlight. Peak summertime temperatures in parking areas, streets, sidewalks and other hard surface areas are significantly reduced by strategically planting shade trees.

Plants sited on the windward side of buildings function as an effective windbreak, significantly lowering wind speeds. Lower wind speeds saves on heating costs by reducing heat loss from nearby buildings.

Wetland plants are extremely effective in managing storm water run-off. Swales, ditches and areas adjacent to hard surfaces that are planted with vegetation will reduce runoff, trap pollutants, lower flow speeds and increase infiltration. Bioengineered water control devices are far more cost effective in managing storm-water than man-made structures.

Plant Small

We advise using smaller sized containers and smaller caliper trees than is frequently specced by designers. The savings from using smaller plant material should be reinvested in the landscape by using a greater number of plants. What does smaller mean? Trees can be planted at 1" to 1½"caliper, shrubs in 1 to 3 gallon containers and perennials in 1 to 2 gallon pots.

Plant survival and growth is enhanced using smaller plant material. Smaller plants suffer less transplant shock; lower root to shoot ratios encourage quicker establishment in the existing soils and more rapid growth. Smaller containers and trees may be produced in one to two years making it easier to acquire plant material. It may take two years to several years to grow the larger plant material. Supplies of larger native plant material may not be readily available.

Create Three-dimensional Landscapes

Too often aesthetics and visual appeal are the only design factors given consideration. Choice of native plants, placement of plants in the landscape and arrangement of plants in relationship to each other, collectively, determines how much benefit native plants will contribute to overall wildlife habitat. Placement of plants in the landscape is just as important as choosing the right species. Designers should take into account other environmental and ecological factors when creating a landscape design, such as: plant density, plant communities, sun exposure, soil structure and drainage patterns.

Focusing on the way plants are placed in the landscape will not only satisfy the aesthetic requirements of a landscape but also meet the survival needs of the plants and the habitat requirements of wildlife. By understanding how birds and animals use vegetation, it will be easier to incorporate their needs into the landscape. Wildlife requires vegetative cover for nearly every activity, such as feeding, resting and raising young. The denser and more extensive the cover, the better the habitat is and more wildlife it will support. Create connectivity between plantings so wildlife can move from one area to another under the protection of cover. The soil surface should always be covered with plants.

New Ways to Use Trees in the Landscape

Changing the way trees are planted and placed in the landscape will help meet their long term survival needs, keep them healthier and also provide greater ecological benefits. The common practice of planting 'specimen trees' in the landscape surrounded by turf grass runs contrary to the normal forest environment where trees grow naturally. Trees have evolved to grow in close proximity to each other, interspersed with other woody shrub species:

- Trees should be planted in groups instead of as individual trees.
- Shade trees can be planted in clusters or groupings of a few to a dozen or more trees.
- Groupings can consist of individual species or mixed species.
- Surround each tree or group of trees with a large mulch ring. Install a mulch ring that surrounds the whole group and covers the entire space under and between the trees. Ideally a mulch ring should extend to the drip line of the tree or beyond.
- Install flowering trees, shrubs and perennials under and between the larger trees.

Combine Plants of Different Heights and Growth Habits

- Combine plants of different species, growth habits and mature heights to better mimic what occurs in nature and create a more biologically diverse landscape.
- All tree groupings should consist of mixed plantings. Shrubs, perennials and small flowering trees can be interplanted amongst the larger shade trees.
- A single tree can have its mulch ring planted with low shrubs or perennials or a mixture of both. This functions like a ground cover, leaving little room for weeds to grow thereby requiring less mulch and labor to maintain.

Replace Lawn with Meadow

It is a common landscape practice to maintain large open areas of turf by mowing. Maintaining large areas in turf is wasteful and an unnecessary use of labor, fuel and equipment.

Converting mowed turf to a low-maintenance no-mow policy or establishing a wild flower meadow will save money on maintenance. A meadow will cover large open areas in a way that is aesthetically acceptable to the public but requires little maintenance. Installing a meadow requires the knowledge and experience of an expert. Seek professional help on the specific steps and processes involved in developing a meadow habitat.

Whether starting from bare soil or established turf, determine the minimum area you need to maintain by mowing. Choose a plant community that will meet the short term and long term uses for the land.

Here is a basic framework for establishing a meadow that is aesthetically pleasing to the public:

- Choose about 6 to 12 hardy species of colorful perennial wildflowers and two to four species of native grasses that are easy to establish, are vigorous growers and long lived. Establish a few dominant wildflower species that will make the meadow explode with color. These plants will contribute color and ornamental interest to the planting. Other secondary species can be added over time. A suggested list of plants is listed in Table 6.

- Surround the meadow with a mowed strip to define the natural meadow from the surrounding managed area. Maintaining a defined boundary between natural and managed spaces conveys the message that the meadow is intentional and not the result of neglect. Develop a maintenance program that will maintain the meadow in an ecologically sustainable way.
- Plant groups of ornamental shrubs and trees around the perimeter of the meadow and a few groups in the center. A meadow with groups of woody plants is more visually acceptable than a meadow with only grasses and perennials. The trees and shrubs draw the focus away from the low meadow vegetation. This is especially effective during winter when the meadow plants are dormant.

Table 6: Native Wildflowers, Grasses and Shrubs for use in a meadow planting

Latin Name	Common Name	Latin Name	Common Name
Meadow Shrubs		**Meadow Plants, continued**	
Amelanchier laevis	Alleghany Serviceberry	Dalea candida	White Prairie Clover
Cornus amomum	Silky Dogwood	Dalea purpurea	Pale-Purple Prairie Clover
Corylus cornuta	Beaked Hazelnut	Echinacea pallida	Pale-Purple Coneflower
Lindera benzoin	Spice Bush	Echinacea paradoxa	Yellow Coneflower
Prunus virginiana	Chokecherry	Echinacea purpurea	Purple Coneflower
Sambucus canadensis	Black Elderberry	Heliopsis helianthoides	Ox Eye Sunflower
Viburnum dentatum	Arrowwood Viburnum	Liatris aspera	Rough Blazing Star
Viburnum lentago	Nannyberry	Liatris borealis	Northern Blazing Star
		Monarda didyma	Bee Balm
Meadow Plants		Monarda fistulosa	Wild-bergamot
Agastache foeniculum	Lavender Hyssop	Liatris pycnostachya	Prairie Blazing Star
Allium cernuum	Nodding Pink Onion	Rudbeckia fulgida	Eastern Coneflower
Asclepias tuberosa	Butterflyweed	Rudbeckia hirta	Black-eyed Susan
Asclepias incarnata	Red Milkweed	Rudbeckia triloba	Brown Eyed Susan
Aster azureus	Sky Blue Aster	Solidago ohioensis	Ohio Goldenrod
Aster laevis	Smooth Aster	Solidago speciosa	Showy Goldenrod
Aster novae-angliae	New England Aster		
Aster novi-belgii	New York Aster	**Grasses**	
Baptisia australis	Blue False-indigo	Bouteloua curtipendula	Sideoats Gramma
Baptisia bracteata	Cream False-indigo	Elymus canadensis	Canada Wild Rye
Baptisia lactea	White False-indigo	Schizachyrium scoparium	Little Bluestem
Coreopsis lanceolata	Lanceleaf Coreopsis	Sorghastrum nutans	Indian Grass
Coreopsis verticillata	Threadleaf Tickseed	Sporobolus heterolepis	Prairie Dropseed

Plants for Water Control Features

Storm water treatment features such as retention, detention and infiltration basins, rain gardens swales and biofilters should be covered with native vegetation. Covering with native vegetation will reduce maintenance, enhance landscape aesthetics, increase the design function and create high value wildlife habitat.

Water control structures (WCS) may be inundated with water for long periods of time, have muddy soils, steep slopes or lined with rock; preventing the usual practice of managing vegetation by mowing. Unplanted water control features are quickly invaded by aggressive species like Phragmites and Cattails. Planting with native vegetation will reduce or eliminate both of these problems.

Native wetland vegetation is ideally suited for controlling storm water runoff and improving water quality that enhances the function of the WCS. The dense root system and stems will slow water runoff, increase infiltration, and trap sediment from the water column. Biological activity in the plants and sediments will help break down and degrade pollutants. Plants absorb and remove nutrients from the water.

Choose shrub and herbaceous wetland species adapted for the different water levels in the WCS.

Select plant material that provides color and interest over an extended time period. Select a combination of woody and perennial plants that combine the best attributes of both groups of plants. Shrubs provide multi-season interest especially during winter and grow taller than perennial plants. Perennials provide more plant diversity, adding to the diversity of foliage, flower, size and structure.

Table 7: Native Wetland Plants and Shrubs for use in managing storm water runoff

Latin Name	Common Name	Latin Name	Common Name
Wetland Shrubs		**Wetland Perennials**	
Aronia melanocarpa	Black Chokeberry	Asclepias incarnata	Swamp Milkweed
Cephalanthus occidentalis	Button Bush	Eupatorium coelestinum	Hardy Ageratum
Cornus amomum	Silky Dogwood	Eupatorium fistulosum	Tall Joe-pye-weed
Cornus racemosa	Grey Dogwood	Eupatorium maculatum	Spotted Joe-pye-weed
Cornus sericea	Red Twig Dogwood	Eupatorium purpureum	Purple Joe-pye-weed
Ilex verticillata	Winter Berry	Eupatorium perfoliatum	Boneset
Lindera benzoin	Spice Bush	Eupatorium rugosum	White Snakeroot
Salix eriocephala	Heart-leaved Willow	Hibiscus palustris	Rose Mallow
Salix discolor	Pussy Willow	Iris versicolor	Blue Flag Iris
Salix exigua	Sandbar Willow	Lobelia siphilitica	Great Blue Lobelia
Salix lucida	Shining Willow	Monarda didyma	Bee Balm
Salix sericea	Silky Willow	Thalictrum dasycarpum	Tall Meadow Rue
Sambucus canadensis	Black Elderberry	Verbena hastata	Blue Vervain
Spirea tomentosa	Steeplebush	Veronicastrum virginicum	Culvers Root
Viburnum cassinoides	Witherood Viburnum	**Rushes**	
Viburnum dentatum	Arrowwood Viburnum	Sparganium eurycarpum	Giant Burreed
Viburnum nudum	Winterthur Viburnum	Scirpus acutus	Hard Stemmed Bulrush
Viburnum lentago	Nannyberry	Scirpus validus	Soft Stemmed Bulrush

Plant Survival

Awareness of soil problems before planting can prevent plant health problems later. Soil tests are recommended to determine soil type, pH, organic content and fertility. Tests should be taken after soil grading but before planting. Construction sites usually leave large areas backfilled and graded with highly disturbed subsoil, that is then covered with just a few inches of topsoil. These soils are deficient in nutrients and organic matter and have poor soil structure, necessary to support good plant growth. Soil amendments may be added to these soils to make them more suitable for sustaining plant growth. Plants selected for their tolerance to these difficult sites will help to reduce plant problems.

Organic bark mulches are recommended for use under trees and shrubs. Inorganic mulch material such as stone chips, rubber chips or pebble mulches should never be used around plant material. Inorganic mulches provide none of the requirements for plant health and growth compared to organic mulches. Wood chip and dyed bark mulches are discouraged over the use of natural un-dyed bark mulches for the same reason.

The Right Plant for an Impossible Site

Choosing the right plant for a difficult site is the first consideration to avoid future plant problems. It is even more critical when selecting plants for extreme environments. Parking lot islands and tree pits are two of the most challenging planting sites. They often have extreme temperatures and limited soil moisture due to impermeable surfaces. Soils are typically compacted, of poor quality and have a high pH. Table 8 lists some native plants with high tolerance to extreme environmental conditions.

Joe pye weed, *Eupatorium sp.* Photo by J. Engel

Table 8: Durable plants for extreme environments

Species name	Common Name	Tolerances
Shrubs for extreme environments		
Arcto staphylos uva-ursi	Bear Berry	poor soils, drought
Aronia arbutifolia	Red Chokeberry	poor soils, drought, + pH
Aronia melanocarpa	Black Chokeberry	poor soils, drought, + pH
Ceanothus americanus	New Jersey Tea	poor soils, drought, + pH
Comptonia peregrina	Sweet Fern	poor soils, high temp, drought
Cornus racemosa	Grey Dogwood	poor soils, high temp, drought, + pH
Cornus rugosa	Rooundleaf Dogwood	poor soils, high temp, drought, + pH
Diervilla lonicera	Bush Honeysuckle	poor soils, drought, + pH
Hypericum frondosum	St Johnswort	poor soils, high temp, drought, + pH
Ilex glabra	Inkberry	drought, salt, + pH
Juniperus communis	Common Juniper	poor soils, high temp, drought, + pH
Juniperus horizontalis	Creeping Juniper	poor soils, high temp, drought, + pH
Juniperus scopulorum	Rocky Mountain Juniper	poor soils, high temp, drought, + pH
Juniperus virginiana	Eastern Red Cedar	poor soils, high temp, drought, + pH
Myrica pennsylvanica	Bayberry	poor soils, high temp, drought, + pH, salt
Potentilla fruticosa	Potentilla	drought, + pH
Prunus pumilla	Sand Cherry	poor soils, high temp, drought, salt
Rhus aromatica	Fragrant Sumac	poor soils, high temp, drought, + pH
Small trees for extreme environments		
Amelanchier canadensis	Shadblow Serviceberry	poor soils, drought, + pH
Amelanchier laevis	Alleghany Serviceberry	drought, + pH
Cotinus obovatus	American Smoketree	drought, + pH
Craetagus species	Hawthorn	poor soils, drought, + pH
Prunus virginiana	Chokecherry	poor soils, drought, + pH
Large trees for extreme environments		
Acer nigrum	Black Maple	drought, + pH
Betula lenta	Sweet Birch	drought,
Betula nigra	River Birch	drought, + pH
Carya cordiformis	Bitternut Hickory	poor soils, drought
Carya ovata	Shagbark Hickory	poor soils, drought
Celtis occidentalis	Hackberry	drought, + pH
Gleditsia triocanthus inermis	Honey Locust	poor soils, drought, + pH, salt
Gymnocladus dioicus	Kentucky Coffee Tree	poor soils, drought, + pH, salt
Large trees for extreme environments, continued		
Nyssa sylvatica	Black Gum	drought, salt
Ostrya virginiana	Hophornbeam	drought, + pH
Quercus bicolor	Swamp White Oak	drought
Quercus imbricaria	Shingle Oak	drought
Quercus macrocarpa	Burr Oak	poor soils, drought, + pH
Quercus muehlenbergii	Chinkapin Oak	drought, + pH
Quercus rubra	Red Oak	drought
Tilia americana	American Linden	drought, + pH
Ulmus americana	American Elm	drought, + pH

Biodiversity and Pest Control

Biodiversity in the landscape reduces pest problems. Research has shown that plant monocultures and simple landscapes with less structure results in more pest problems. Simple ecological systems are subject to disruptions and population peaks and valleys that complex systems are not.

A landscape containing only a few species of plants will also have fewer species of beneficial insects (insect predators) that keep insects pests (insect herbivores) in check. Insect pests reproduce very quickly, allowing their populations to explode. Insect predators on the other hand reproduce slowly. In the absence of predators, the herbivore population increases rapidly. The predators will also begin to reproduce but they cannot reproduce fast enough to keep pace with the pest outbreak. The difference in reproductive potential between predator and prey creates population peaks and valleys that translate into pest outbreaks.

A landscape with a diversity of plant species creates a more complex physical environment that supports a diversity of predator species. In complex systems there are more plant species. Each plant species will have its own unique compliment of herbivores and the insect predators that feed on them. If one pest begins to increase in number, there are more species of insect predators that can begin to prey on that population and hold its population in check. When that population declines, the predators can then shift to another prey species. This allows the population of predators to remain higher and more diverse than in a simplified system.

Each insect species has certain habitat requirements it needs to survive. Some beneficial insects live part or all of their life in the soil, while others species may live in the tree canopy. One species may over-winter in the cracks and fissure of tree bark, while another may burrow into a plant stem of for winter protection. Eliminate any one of those habitat features and that species is removed from the habitat.

Using more native species from different plant families and covering large areas with plants will create the complex environment that keeps insect pests under control.

Conclusion

Following Town of Victor Conservation Board recommendations, the Town Planning Board has been encouraging the use of native plants in development landscapes. Landscape architects at work in the Town are not surprised by the suggestion; in fact, many tend to support the idea and are already making the move away from non-native plants. This manual is intended to facilitate the process as well as educate those who are at a loss as to where to begin.

As the use of native plants revives a healthy ecosystem in our town, residents will see the benefits: e.g. landscapes with unique qualities rather than the rubberstamp approach to design, natural appearance, increase in birds and butterflies, increased survival rate of plants and reduction of time and money spent on home landscapes.

As demand increases for native vegetation, suppliers large and small will take steps to supply the product.