

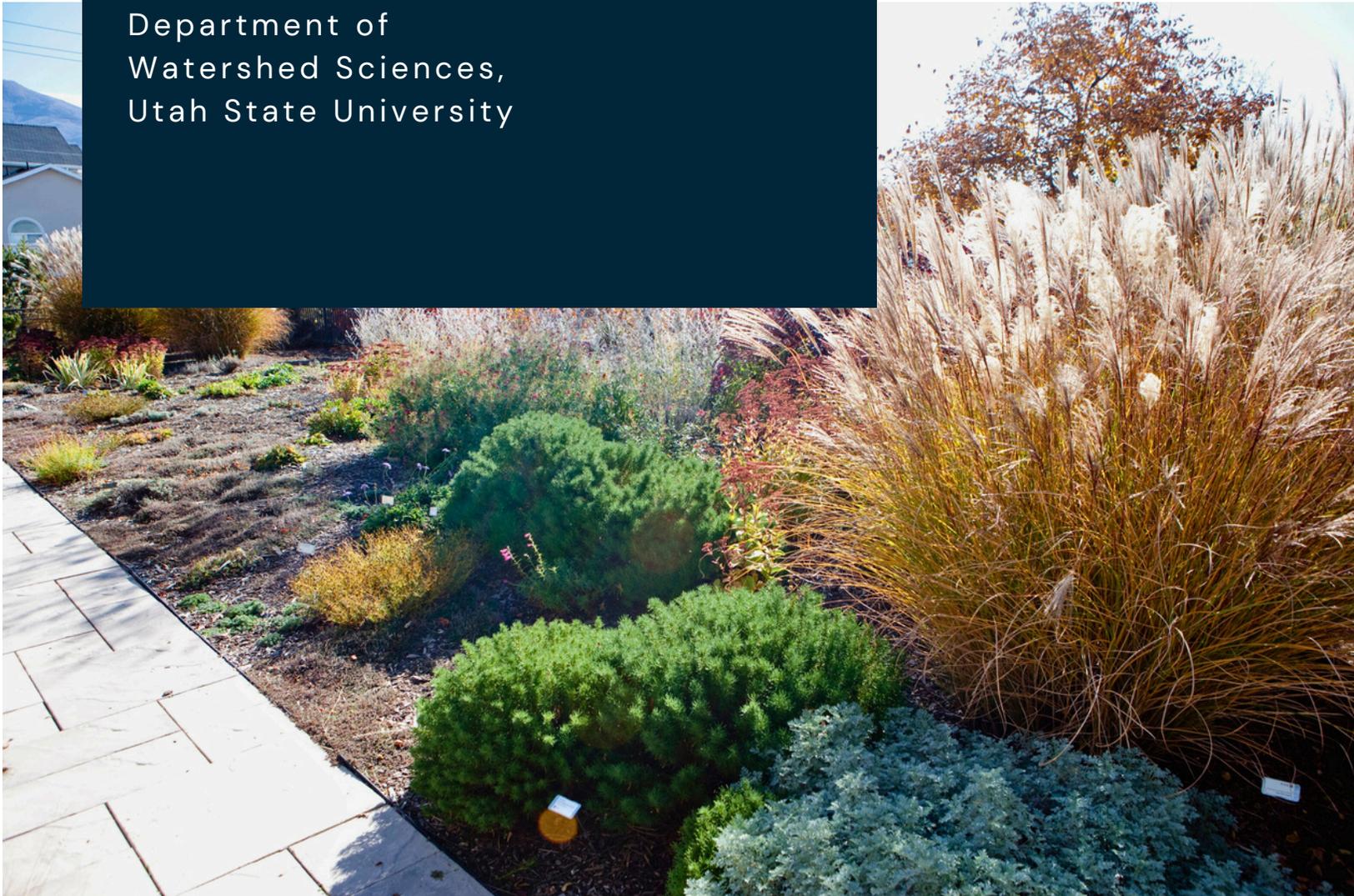
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APPENDIX 5

# Low-Impact Development Planting Guide

**PREPARED FOR :**  
Master's Degree Project

Department of  
Watershed Sciences,  
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# VEGETATED STRIPS

Vegetated strips are designed to receive stormwater sheet flow from adjacent impervious surfaces and transport them to a planned receiving area. The vegetation slows runoff velocity allowing for bioretention and biofiltration. As runoff passes through the vegetation, it infiltrates into the soil, trapping sediment and filtering pollutants before entering the storm sewer system. The more vegetation coverage, the better the vegetated strip will function.

This BMP is best used near roadways, parking lots, and other large areas with impervious surfaces. Vegetated strips can be used as an LID practice or as part of construction activities.

Pollutant	Effectiveness*
Sediment	High
Nutrients	Moderate
Metals	Moderate
Bacteria	High
Oil/Grease	High

\*Removal effectiveness is increased for all pollutants as retention increases.



## Primary Functions:

- Bioretention
- Some Volume Retention
- Biofiltration



## Benefits:

- Reduces and treats runoff from the surrounding area.
- Can be integrated into densely developed urban settings.
- Increases biodiversity & habitat in urban areas.
- Provides local cooling effects.
- Creates greening and aesthetic benefits in developed areas.

## Maintenance Requirements

Table 4. The following table has been remade from the DWQ's vegetated strips maintenance activity table in their LID manual ("A Guide to LID," 2020, pg. C-27).

Inspection	Frequency	Maintenance Activity	Effort
Inspect upstream end of vegetated strip for sediment buildup that may be impeding sheet flow.	Semiannual (Spring, Fall), as needed	Remove and dispose of sediment buildup.	Low
Inspect grass length.	As needed	Mow strip as needed.	Low
Inspect for erosion, rilling, and sloughing.	Semiannual (Spring, Fall)	Regrade side slope if slope stability is not affected by sloughing. Notify engineer if stability is affecting basin functionality.	Low
Inspect for adequate vegetative coverage, and impaired or failing vegetation.	Semiannual (Spring, Fall), as needed	Reseed/replant barren spots. Notify the engineer if failing vegetation persists.	Low

## Plant Selection

Vegetated strips are used to capture and treat sheet flow from nearby impervious surfaces, such as parking lots and roads. A variety of plants can be used including grasses, forbs, and ground cover. However, in arid regions, it is common to use fewer plants and more gravel. It should be noted that fewer plants significantly reduces the amount of biofiltration possible. This BMP usually has limited planting space, so consider the size of the location when selecting plants. The best plants for vegetated strips:

- Will not require additional fertilization.
- Can tolerate salts and urban pollutants.
- Can tolerate heat and reflectivity from pavement and buildings.
- Can tolerate trampling.



## Plant List Keys

Use these keys to interpret the following plant lists for each LID type.

For the Zone, refer to the [Plant Hardiness Zone map](#).

Each plant's soil needs are classified by type followed by a comma and the specialties.

Soil types:

Variety  
Sandy  
Clay  
Loam  
Gravel  
Rocky

Soil specialties:

Rich  
Dry  
Wet  
Humusy  
Peaty  
Acidic  
Alkaline

Each plant's water needs are classified by the amount followed by a comma and the drainage type.

Water Amount:

Low  
Moderate  
High

Drainage Type:

Well-drained  
Consistently moist

For the Drought Tolerant, Erosion Control, and Flooding Tolerant columns:

Y = Yes

N = No

Plant Type:

T = tree  
SH = shrub  
G = grass  
P = perennial  
GC = groundcover  
V = vine  
C = cactus  
SU = succulent

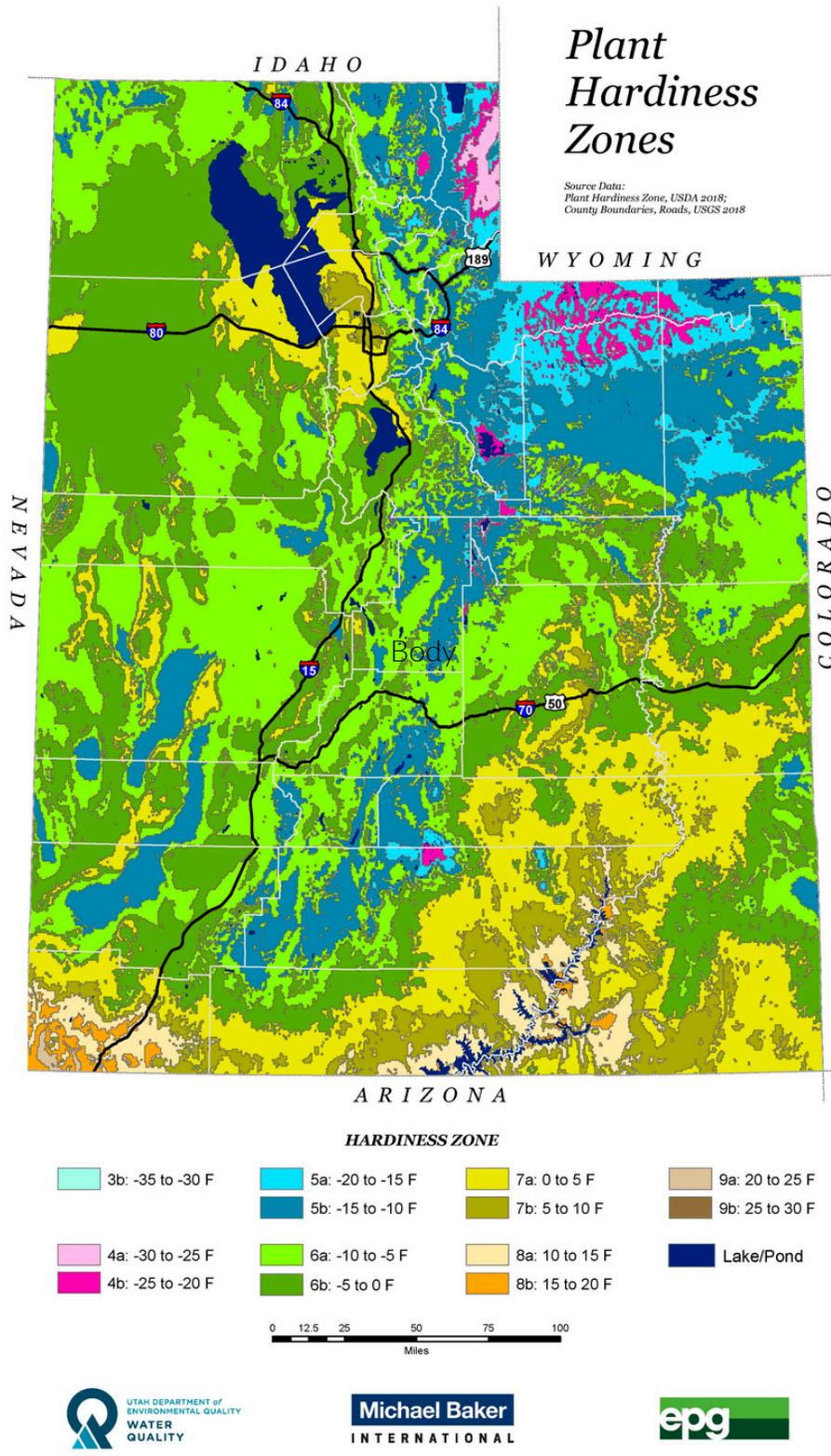
Growth Rate:

S = slow  
M = moderate  
F = fast

Light Needs:

○ = full sun  
◐ = full sun to part shade  
● = full shade

# Plant Hardiness Zone Map



Source: Utah Division of Water Quality's "Plant Hardiness Zones" map included in their [LID manual](#) called "A Guide to Low Impact Development within Utah."

Vegetated Strips Plants List												
Scientific Name - Common Name	Plant Type	Zone	Drought Tolerance	Flooding Tolerance	Erosion Control	Growth Rate	Mature Size (HxW)	Light Needs	Soil Needs	Water Needs	Native	Benefits
Acer campestre - Hedge Maple	T	4a-8b	Y				H = 25-35' W = 25-35'	○	Variety	Low, well-drained	Europe, W Asia	Adaptable to salt Urban, air pollution tolerant
Acer campestre 'Carnival' - Carnival Hedge Maple	T	4a-8b	Y			S	H = 10' W = 10'	○	Variety, alkaline	Consistently moist, well-drained		Pollution tolerant Attracts birds, pollinators
Acer glabrum - Rocky Mountain Maple	T	5a-9b	Y				H = 10-30' W = 10-30'	○		Low	Utah	Adaptable to salt
Acer negundo 'Sensation' - Sensation Boxelder	T	4a-6b				F	H = 30' W = 25'	☉	Variety	Moderate		
Acer palmatum sp. - Japanese Maples	T	5a-8b				S	H = 10-25' W = 10-25'	○	Variety, rich, acidic	Moderate, well-drained	Japan, Korea	Pest resistant
Acer platanoides - Norway Maple	T	4a-7b	Y				H = 40-50' W = 30-50'	○	Variety	Moderate, well-drained	NE Europe to Caucasus	Heat tolerant Urban, air pollution tolerant
Acer platanoides 'Columnare' - Columnar Norway Maple	T	4a-7b				S	H = 20-60' W = 15-20'	○	Variety, rich	Moderate	N Europe	
Acer platanoides 'Crimson Sentry' - Crimson Sentry Norway Maple	T	3b-7b	Y			S	H = 20-30' W = 10-15'	○		Moderate, well-drained		Adaptable to salt Urban, air pollution
Acer pseudoplatanus 'Spaethii' - Purple Sycamore Maple	T	5a-9b				M	H = 40-80' W = 50-60'	○	Variety	Moderate, well-drained		Adaptable to salt Wind tolerant Urban, air pollution
Acer pseudoplatanus 'Tunpetti' REGAL PETTICOAT - Regal Petticoat Sycamore Maple	T	4a-9b	Y			M	H = 40-60' W = 30-60'	☉	Variety	Low	N Europe	Adaptable to salt Wind tolerant Urban, air pollution
Acer rubrum - Red Maple	T	3b-9b	Y	Y		M	H = 40-70' W = 30-50'	○	Variety, acidic	Moderate, well-drained	E and central North America	Cold tolerant Air pollution tolerant Attracts birds
Acer saccharinum - Silver Maple	T	4a-9b	Y	Y		F	H = 50-80' W = 35-70'	○	Sandy, variety	Moderate	E North America	Adaptable to salt Urban, air pollution tolerant

Acer tataricum ssp. Ginnala - Amur Maple	T	3b-8b	Y			M	H = 15-25' W = 10-20'	○	Variety, rich	Moderate, well- drained	NE Asia, NW United States	Deer resistant; tolerates salt,
Acer x freemanii 'Jeffersred' - Autumn Blaze Maple	T	3b-8b	Y	Y		F	H = 40-55' W = 30-40'	⊙	Acidic	High, well- drained	Cultivated	Urban pollution tolerant Deer resistant
Aesculus hippocastanum - Horsechestnut	T	3b-8b				M	H = 50-75' W = 40-65'	○	Rich	Moderate, well- drained	SE Europe, Asia	Rabbit resistant Attracts pollinators
Aesculus x arnoldiana 'Autumn Splendor' - Autumn Splendor Horse Chestnut	T	4a-7b	N			M	H = 35' x 30'	○	Variety	Moderate, consistently moist		Urban pollution tolerant Ornamental Deer resistant Attracts pollinators, wildlife
Alnus incana sp. Tenufolia - Thinleaf Alder	T	3b-5b			Y	F	H = 40' W = 60'	○	Clay, variety	Moderate, consistently moist	Europe, Caucasus, W Canada, United States	Cold tolerant Urban pollution Nitrogen fixer Attracts birds
Alnus rubra - Red Alder	T	4a-5b			Y	F	H = 40-100' W = 10-34"	○	Clay, variety	High, consistently moist	W North America	Wind tolerant Nitrogen fixer
Alnus sinuata - Sitka Alder	T	4a-5b			Y	F	H = 3-20' W = 6-10'	○	Clay, variety	High, consistently moist	W North America	Nitrogen fixer
Amelanchier laevis 'Spring Flurry' - Spring Flurry Serviceberry	T	3b-6b				M	H = 10-30' W = 10-20'	○		Moderate, well- drained		Urban pollution Deer resistant Attracts birds, pollinators
Betula nigra - River Birch	T	4a-9b	Y	Y	Y	F	H = 40-70' W = 40-60'	○	Variety, rich, acidic	High, consistently moist	E United States	Adaptable to salt Heat tolerant Urban, air pollution tolerant Deer resistant Attracts birds, pollinators
Betula occidentalis - Water Birch	T	3a-5b	Y	Y		F	H = 10-40' W = 10-30'	○	Variety	Moderate, consistently moist	Utah, W North America, S Canada	Adaptable to salt Wind tolerant Ornamental
Betula papyrifera - Paper Birch	T	3b-6b			Y	F	H = 50-70' W = 25-50'	○	Variety	Moderate, well- drained	North America	Adaptable to salt Pioneer species Deer resistant
Betula pendula - Silver Birch	T	3b-6b				F	H = 30-40' W = 15-30'	○	Variety, rich	Moderate, well- drained	Europe, Asia, W Siberia	Wind tolerant Ornamental Pioneer species Deer resistant

Betula pubescens - White Birch	T	3b-3b		Y		F	H = 30-65' W = 32'	○	Variety, acidic	High, consistently moist	N & central Europe, Russia, Siberia	Wind tolerant Wetland plant Nitrogen fixer Pioneer species Attracts wildlife
Carpinus betulus 'Fastigiata' - Pyramidal European Hornbeam	T	4a-8b	Y			M	H = 30-45' W = 20-35'	○	Variety	Low, well- drained	E, S, & central Europe; W Asia	Urban pollution tolerant
Catalpa speciosa - Catalpa	T	5a-9b	Y	Y		F	H = 40-70' W = 20-50'	○	Variety, rich	Low, well- drained	United States	Adaptable to salt Urban, air pollution tolerant Deer resistant Attracts pollinators
Celtis occidentalis 'Prairie Pride' - Prairie Pride Hackberry	T	3b-9b	Y	Y		M	H = 50-60' W = 40-50'	○	Variety	Low, well- drained	E & central North America	Adaptable growing conditions Heat, cold, wind tolerant Urban pollution tolerant Attracts birds
Cercis canadensis - Eastern Redbud	T	5a-9b	Y			M	H = 20-30' W = 25-35'	○	Variety, acidic, alkaline	Moderate, well- drained	E & central North America	Urban pollution tolerant Ornamental Deer resistant Attracts pollinators, wildlife
Cercis canadensis 'Forest Pansy' - Forest Pansy Redbud	T	5a-9b				M	H = 20-30' W = 25-35'	○	Variety	Moderate, well- drained	E & central North America	Urban pollution tolerant Ornamental Deer resistant Attracts pollinators, wildlife
Cercis canadensis 'Ruby Falls' - Ruby Falls Redbud	T	6a-9b				M	H = 6-8' W = 4-6'	○	Variety, alkaline	Moderate, well- drained	E & central North America	Ornamental Deer resistant Attracts pollinators
Cercis canadensis 'The Rising Sun' - Rising Sun Redbud	T	6a-9b	Y			M	H = 8-12' W = 8-15'	○	Variety	Moderate		Adaptable growing conditions Heat, cold tolerant Urban pollution tolerant Ornamental Deer resistant Attracts pollinators
Cercis occidentalis - Western Redbud	T	6a-9b	Y			M	H = 15' W = 10'	○	Variety	Moderate, well- drained	SW United States	Nitrogen fixer Attracts pollinators, wildlife
Chilopsis linearis - Desert Willow	T	7a-9b	Y	N		M	H = 10-30' W = 15-20'	⊙	Variety, alkaline	Low, well- drained	Utah, SW United States, N Mexico	Adaptable to salt Ornamental Attracts birds, pollinators

Corylus colurna - Turkish Filbert	T	4b-7b	Y		S	H = 40-80' W = 30-50'	○	Variety, rich, acidic	Moderate, well drained	SE Europe, Asia Minor, W Asia	Heat, wind tolerant Urban pollution tolerant Ornamental Xeriscape friendly Attracts wildlife
Crataegus douglasii - Black/ Douglas Hawthorn	T	4a-6b	Y	Y		H = 10-25' W = 10-25'	○	Variety	Moderate, well drained	United States	Wind tolerant Urban, air pollution tolerant Ornamental Wetland plant Attracts birds, pollinators
Crataegus laevigata - English Hawthorn	T	4a-8b	Y		M	H = 15-20' W = 15-20'	○	Variety, alkaline	Moderate, well drained	Europe, N Africa	Cold, wind tolerant Air pollution tolerant Fire resistant Ornamental Attracts birds, pollinators
Fraxinus pennsylvanica - Green Ash	T	3b-9b	Y		F	H = 50-70' W = 35-50'	⊙	Variety, humusy	Moderate, consistently moist	United States, S Canada	Adaptable growing conditions Adaptable to salt Heat, cold, wind tolerant Urban, air pollution tolerant Deer, rabbit resistant Attracts birds, pollinators
Ginkgo biloba - Maidenhair Tree	T	3b-8b	Y		S	H = 50-100' W = 30-60'	⊙	Variety, rich, acidic, alkaline	Moderate, well drained	S China	Adaptable to salt Heat tolerant Urban, air pollution tolerant Ornamental Disease resistant Deer, pest resistant
Ginkgo biloba 'Fairmount' - Fairmount Ginkgo	T	5a-8b	Y		M	H = 30-50' W = 8-30'	○	Variety	Low		Adaptable to salt Heat tolerant Urban, air pollution tolerant Ornamental Deer resistant
Ginkgo biloba 'PNI 2720' - Princeton Sentry Ginkgo	T	3b-8b	Y		S	H = 40-50' W = 20-30'	⊙	Variety, acidic, alkaline	Low		Adaptable to salt Heat tolerant Urban, air pollution tolerant Ornamental Deer, rabbit resistant

Gleditsia triacanthos 'Impcole' - Imperial Honeylocust	T	4a-8b	Y			F	H = 30-40' W = 25-35'	○	Variety, rich	Low, well-drained	US cultivar	Adaptable growing conditions Adaptable to salt Heat, cold, wind tolerant Urban, air pollution tolerant Deer resistant
Gleditsia triacanthos 'Shademaster' - Shademaster Honeylocust	T	5a-8b	Y			F	H = 45-70' W = 30-50'	○	Variety	Low, well-drained		Adaptable growing conditions Heat, cold, wind tolerant Air pollution tolerant Deer resistant
Gleditsia triacanthos 'Skyline' - Skyline Honeylocust	T	3b-8b	Y				H = 35-75' W = 25-50'	○	Variety, rich	Low	United States	Adaptable to salt Air pollution tolerant Deer resistant
Juniperus osteosperma - Utah Juniper	T	3b-7b	Y				H = 20' W = 10'	⊙	Variety	Low, well-drained	Utah, SW North America	Cold tolerant
Koelreuteria paniculate - Golden Raintree	T	5a-9b	Y				H = 30-40' W = 30-40'	⊙	Variety	Low to moderate	E Asia to N China	Wind tolerant Air pollution tolerant
Maackia amurensis - Amur Maackia	T	3b-7b			N	S	H = 20-35' W = 15-30'	⊙	Variety, alkaline, acidic	Moderate, well-drained	Russia, E Asia	Adaptable growing conditions Adaptable to salt Cold tolerant Urban pollution tolerant Ornamental Nitrogen fixer Deer resistant Attracts pollinators
Magnolia grandiflora - Southern Magnolia	T	7a-9b					H = 60-80' W = 30-50'	○	Rich	Medium, consistently moist	SE United States	Wind tolerant Air pollution tolerant Attracts birds
Morus alba - White Mulberry	T	3b-9b	Y			M	H = 20-50' W = 30-50'	○	Variety, rich, alkaline	Low, well-drained	China	Adaptable to salt Wind tolerant Air pollution tolerant Pest resistant
Morus alba 'Chaparral' - Chaparral Weeping Mulberry	T	4a-8b	Y			F	H = 6-12' W = 8-15'	○	Variety, rich	Moderate, well-drained		Adaptable to salt Heat tolerant Urban, air pollution tolerant Ornamental Deer resistant Attracts birds
Morus alba 'Kingan' - Kingan Mulberry	T	5a-9b	Y			F	H = 30-50' W = 30'	○	Variety	Low, well-drained		Adaptable to salt Heat tolerant Urban, air pollution tolerant

Olea europaea 'Swan Hill' - Swan Hill Olive	T	8a-9b	Y			M	H = 30-35' W = 20-30'	☉	Variety, alkaline	Low, well- drained	United States	Adaptable growing conditions Heat tolerant
Olea europaea 'Tolley's Upright' - Tolley's Upright Olive	T	8a-9b	Y			S	H = 22' W = 13'	○	Variety, hummusy, rich	Moderate, well drained		
Populus angustifolia - Narrowleaf Cottonwood	T	3b-8b			Y		H = 45-65' W = 45-65'	☉	Rich	High, well- drained	Utah, W North America, Alberta, Mexico	
Populus fremontii - Fremont Cottonwood	T	4a-6b				F	H = 40-80' W = 30-50'	☉	Rich	Moderate, consistently moist, well- drained	SW United States	Attracts pollinators
Populus tremuloides - Quaking Aspen	T	3b-6b	Y	Y		F	H = 20-50' W = 10-30'	☉	Variety, hummusy, rich	Moderate, consistently moist, well- drained	Canada to Mexico	Wetland plant Attracts birds, pollinators
Populus trichocarpa - Black Cottonwood	T	4a-6b	Y			F	H = 30-100' W = 25-30'	☉	Gravel	Moderate, consistently moist, well- drained	North America	Attracts pollinators
Prunus padus - Bird Cherry	T	3b-6b					H = 20-40' W = 20-40'	○	Variety	Moderate	Europe, Siberia, Himalayas	Attracts pollinators
Prunus virginiana - Chokecherry	T	3b-7b	Y				H = 20-30' W = 15-20'	○	Loam	Low, well- drained	Utah, Canada, United States	Deer resistant Attracts pollinators
Pyrus calleryana 'Chanticleer' - Chanticleer Flowering Pear	T	5a-9b	Y				H = 25-40' W = 13-20'	☉	Hummusy	Low, consistently moist, well- drained	China, Taiwan	Deer resistant Attracts pollinators
Quercus bicolor - Swamp White Oak	T	3b-8b					H = 50-60' W = 50-60'	☉	Variety, acidic	High	United States	Adaptable to salt Attracts birds
Quercus robur f. fastigiata - Columnar English Oak	T	5a-8b	Y				H = 50-60' W = 10-20'	☉	Variety	Low to moderate, well drained	Europe, SW Asia	Air pollution tolerant
Quercus rubra - Northern Red Oak	T	5a-8b	Y			M	H = 50-80' W = 35-75'	☉	Sandy, acidic	Low, well- drained	E North America	Air pollution tolerant Rabbit resistant

Robinia 'Purple Robe' - Purple Robe Locust	T	3b-8b	Y				H = 30-40' W = 20-30'	☉	Loam, sandy, rich	Moderate	North America	Deer resistant
Salix amygdaloides - Peachleaf Willow	T	4a-5b		Y		F	H = 13-65'	○	Loam, sandy	High	North America	Attracts pollinators
Sophora japonica 'Halka' - Millstone Japanese Pagoda Tree	T	5a-8b					H = 45' W = 35'	☉	Variety	Low		Attracts pollinators
Sophora japonica 'Regent' - Regent Japanese Pagodatree	T	5a-8a	Y				H = 40-75' W = 30-75'	○	Loam, sandy, rich	Low, well- drained	China, Korea	Air pollution tolerant Attracts pollinators
Syringa reticulata 'Ivory Silk' - Ivory Silk Tree Lilac	T	3b-7b					H = 15-25' W = 10-20'	○	Rich, acidic	Moderate, well drained		Urban pollution tolerant Deer resistant Attracts birds, pollinators
Taxodium distichum 'Shawnee Brave' - Shawnee Brave Bald Cypress	T	4a-9b			Y		H = 15-75' W = 15-20'	☉	Variety, acidic	Moderate	United States	Air pollution tolerant Deer resistant
Thuja occidentalis - American Arborvitae	T	3b-7b					H = 20-40' W = 10-15	○	Variety	Moderate, well drained	E United States, E to central Canada	Air pollution tolerant Attracts birds
Tilia cordata 'Greenspire' - Greenspire Linden	T	4a-8b	Y				H = 40-50' W = 35-40'	○	Variety	Low		Urban pollution tolerant Attracts pollinators
Tilia tomentosa - Silver Linden	T	4a-8b	Y				H = 50-70' W = 30-50'	○	Variety, loam, rich	Moderate, well drained	SE Europe to Asia Minor	Attracts pollinators
Tilia tomentosa 'Sterling' - Sterling Silver Linden	T	4a-8a	Y				H = 50' W = 25'	○	Variety	Low		Attracts pollinators
Ulmus parvifolia 'Emer II' ALLEE - Allee Lacebark Elm	T	4a-9b	Y				H = 60-70' W = 35-55'	☉	Variety, loam, rich	Moderate	Japan, China, Korea	Air pollution tolerant
Ulmus x 'Morton' ACCOLADE - Accolade Elm	T	4b-9b					H = 50-60' W = 25-40'	☉	Loam, rich	Moderate		Adaptable growing conditions Air pollution tolerant
Ulmus 'Frontier' - Frontier Elm	T	5a-9b	Y			S	H = 30-40' W = 20-30'	☉	Variety	Low to moderate, well drained		Urban pollution tolerant
Ulmus 'Homestead' - Homestead Elm	T	3b-9b	Y	Y		F	H = 40-60' W = 30-40'	☉	Variety, peaty			Urban pollution Deer, rabbit resistant
Zelkova serrata - Japanese Zelkova	T	5a-8b	Y				H = 50-80' W = 50-80'	☉	Loam, rich	Moderate	Japan, Taiwan, E China	Urban, air pollution tolerant
Zelkova serrata 'Green Vase' - Green Vase Zelkova	T	5a-9a					H = 60-80' W = 40-60'	☉	Loam, rich	Low	Japan, Taiwan, E China	Air pollution tolerant

Zelkova serrata 'Kiwi Sunset' - Kiwi Sunset Zelkova	T	5a-8b				M	H = 15-30' W = 12-18'	☉	Rich	Low, well-drained	E Asia	Ornamental
Zelkova serrata 'Village Green' - Village Green Zelkova	T	5a-8b	Y				H = 40-60' W = 30-50'	☉	Loam, rich	Low	Japan, Taiwan, E China	Air pollution tolerant
Baccharis pilularis - Coyote Brush	SH	8a-9b	Y		Y	F	H = 8-24" W = 6' (groundcover r) H = 4-8' W = 4-8' (upright shrub)	○	Variety	Low, well-drained	W United States	Adaptable growing conditions Heat, cold, wind tolerant Deer resistant Attracts birds, pollinators
Berberis aquifolium - Barberry	SH	5a-8b	Y			S	H = 3-6' W = 2-5'	●	Variety, rich, acidic	Well-drained	N North America	Ornamental Deer resistant Attracts birds, pollinators
Berberis aquifolium repens - Creeping Oregon Grape	SH	5a-8b	Y		Y	M	H = 12-18" W = 12-18"	☉ ●	Variety, rich, acidic	Well-drained		Ornamental Deer resistant Attracts pollinators, wildlife
Berberis thunbergii f. atropurpurea - Japanese Barberry	SH	4a-8b	Y		Y	M	H = 3-6' W = 4-7'	☉	Variety, loam	Low, well-drained	Japan, E Asia	Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds
Berberis thunbergii f. atropurpurea 'Atropurpurea Nana' - Crimson Pygmy Japanese Barberry	SH	4a-8b	Y	N	Y	M	H = 18-24" W = 24-36"	☉	Variety	Low, well-drained		Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds
Berberis thunbergii f. atropurpurea 'Golden Ring' - Golden Ring Japanese Barberry	SH	4a-9b	Y	N	Y	M	H = 3-4' W = 3-4'	○	Variety	Low, well-drained		Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds
Berberis thunbergii f. atropurpurea 'Helmond Pillar' - Helmond Pillar Japanese Barberry	SH	4a-8b	Y	N	Y	M	H = 4-5' W = 1-2'	○	Variety	Low, well-drained		Adaptable to salt Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds

Berberis thunbergii f. atropurpurea 'Rose Glow' - Rose Glow Japanese Barberry	SH	4a-8b	Y	N	Y	M	H = 3-6' W = 4-8'	⊙	Variety	Low, well- drained		Adaptable to salt Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds
Berberis thunbergii 'Goruzam' - Golden Ruby Barberry	SH	4a-8b	Y	N	Y	F	H = 24" W = 24"	○	Variety	Low, well- drained		Adaptable to salt Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds
Berberis thunbergii 'Maria' - Sunjoy Gold Pillar Japanese Barberry	SH	4a-8b	Y	N	Y	M	H = 3-4' W = 2-4'	⊙	Variety	Low, well- drained		Adaptable to salt Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds
Berberis thunbergii 'Orange Rocket' - Orange Rocket Barberry	SH	4a-9b	Y	N	Y	F	H = 4-8' W = 2-5'	○	Variety	Low		Adaptable growing conditions Adaptable to salt Heat, cold tolerant Urban pollution tolerant Xeriscape friendly Deer, pest resistant Attracts birds
Berberis thunbergii 'Pyguzam' - Pygmy Ruby Japanese Barberry	SH	4a-8b	Y	N	Y	S	H = 12-18" W = 2-3'	⊙	Variety	Moderate, well- drained		Heat tolerant Urban, air pollution tolerant Deer resistant Attract birds
Callistemon 'Little John' - Little John Dwarf Bottlebrush	SH	8a-9b	Y			S	H = 3' W = 5'	⊙	Loam, acidic	Low, well- drained		Deer resistant Attracts birds
Celtis occidentalis - Common Hackberry	SH	4a-9b	Y				H = 40-60' W = 40-60'	○	Rich	Low, well- drained	NE & central North America	Air pollution tolerant Attracts birds, pollinators
Cotinus coggygria 'Ancot' GOLDEN SPIRIT - Smoke Tree, 'Golden spirit'	SH	4b-7b	Y				H = 8-15' W = 8-15'	○	Variety, loam	Low, well- drained	Europe to central China	Deer resistant
Holodiscus discolor - Oceanspray	SH	5a-9b					H = 4-5' W = 3'	○	Variety	Low	Utah, W North America	

Agrostis sp. - Redtop Bentgrass	G	3b-6b		Y	Y		H = 3-4'	○	Variety		Eurasia	Adaptable to salt Wetland plant
Bouteloua gracilis - Blue Grama	G	3b-9b	Y				H = 9-24" W = 18-24"	⊙	Variety	Low	W United States	Adaptable to salt Air pollution tolerant Deer resistant Attracts birds
Bouteloua gracilis 'Blonde Ambition' - Blonde Ambition grama grass	G	4a-9b	Y				H = 30-36" W = 30-36"	○	Variety	Low	North America	Deer resistant
Buchloë dactyloides - Buffalo Grass	G	3b-9b	Y		Y		H = 2-5" W = 72"	⊙	Variety	Low	North America, Great Plains	Heat tolerant
Buchloë dactyloides 'Cody' - Cody Buffalo Grass	G	3b-9b	Y		Y		H = 4-6" W = 72"	⊙	Variety	Low	North America, Great Plains	Heat tolerant
Buchloë dactyloides 'Legacy' - Legacy Buffalo Grass	G	3b-9b	Y			F	H = 4-6" W = 72"	⊙	Clay, alkaline	Low		Attracts birds
Calamagrostis x acutiflora 'Eldorado' - Eldorado Feather Reed Grass	G	4a-9b	Y			M	H = 4-6' W = 2-2.5'	⊙	Variety	Low		Attracts birds
Calamagrostis x acutiflora 'Karl Foerster' - Karl Foerster Feather Reed Grass	G	4a-9b	Y		Y	M	H = 3-5' W = 1.5-2.5'	⊙	Variety, rich	Low	Europe, Asia	Air pollution tolerant Deer resistant
Calamagrostis x acutiflora 'Overdam' - Overdam Feather Reed Grass	G	5a-9b	Y		Y	M	H = 3-5' W = 2'	⊙	Variety, rich	Low	Europe, Asia	Air pollution tolerant Deer resistant
Calamagrostis brachytricha - Korean feather reed grass	G	4a-9b	Y				H = 24-40" W = 20-24"	○	Variety	Low		Deer resistant
Carex 'Silver Sceptre' - Silver Scepter Sedge	G	5a-9b					H = 9-12" W = 9-18"	●	Variety	High	Japan	Deer resistant
Carex buchananii - Fox Red Curly Sedge	G	4b-9b	Y			S	H = 2-3' W = 2-3'	○	Variety, rich	Consistently moist	New Zealand	Deer, rabbit resistant
Cynodon dactylon - Bermuda Grass	G	7a-9b	Y		Y	F	H = 24" W = 20"	⊙	Variety	Low to moderate	Europe, Africa, Australia, Asia	Heat tolerant
Deschampsia cespitosa 'Northern Lights' - Northern Lights Tufted Hair Grass	G	4a-9b			Y	M	H = 1-3' W = 1-3'	○	Variety, acidic	Moderate, consistently moist		Air pollution tolerant Deer resistant Attracts birds

Deschampsia cespitosa var. vivipara - Tufted Hair Grass	G	4a-9b					H = 2-3' W = 1-2'	○	Variety, rich	High, consistently moist		Air pollution tolerant Attracts birds
Festuca spp. - BioMeadow Fine Fescue Mix	G	4a-9b					H = 8-12" W = 6-8"	○		Moderate		Adaptable to salt
Festuca arundinacea - Dwarf Tall Fescue	G	5a-8b					H = 24-36" W = 12-18"	○	Clay	Moderate		Adaptable to salt
Festuca arundinacea 'Bolero' - BioTurf Dwarf Fescue Mix	G	5a-8b	Y			S	H = 2-3' W = 12-18"	○	Clay	Moderate		Heat tolerant Deer resistant
Festuca arundinacea 'Bonsai' - Bonsai Dwarf Tall Fescue	G	5a-8b					H = 24-36" W = 12-18"	○	Clay	Moderate		Deer resistant
Festuca glauca 'Elijah Blue' - Elijah Blue Fescue	G	4a-8b	Y			F	H = 9-12" W = 9-12"	⊙	Variety	Low		Air pollution tolerant Ornamental Deer, rabbit resistant
Glyceria striata - Fowl Manna Grass	G	3b-9b		Y			H = 2-4'	⊙	Variety, rich	Moderate, consistently moist	North America	Wetland plant Deer resistant Attracts birds, pollinators
Helictotrichon sempervirens - Blue Oat Grass	G	4a-9b	Y			M	H = 2-3' W = 2-3'	⊙	Variety	Moderate		Adaptable to salt Air pollution tolerant Deer, rabbit resistant
Juncus effusus - Common Rush	G	4a-9b		Y	Y		H = 2-4' W = 2-4'	○	Wet	High, consistently moist	Britain, E & S Africa, Australia	Wetland plant
Miscanthus x giganteus - Giant Chinese Silver Grass	G	4a-9b	Y			F	H = 10-13' W = 5'	⊙	Variety	Moderate	Hybrid of Asian species	Heat, wind tolerant Ornamental Deer, rabbit resistant Attracts birds
Miscanthus 'Purpurascens' - Flame Grass	G	4a-9b	Y				H = 4-5' W = 2.5-3'	○	Variety	Moderate, consistently moist	Africa, E Asia	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sacchariflorus - Silver Banner Grass	G	5a-9b		Y	Y		H = 5-8' W = 3-4.5'	○	Wet	High, consistently moist	Japan, Manchuria, Korea, N China	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sinensis 'Adagio' - Adagio Maiden Grass	G	5a-9b	Y		Y	F	H = 3-5' W = 3-4'	○	Loam	Moderate	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant

Miscanthus sinensis 'Cabaret' - Cabaret Japanese Silver Grass	G	5a-9b	Y		Y	F	H = 6-7' W = 3-5'	○	Loam	Moderate, well drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant
Miscanthus sinensis 'Gold Bar' - Gold Bar Maiden Grass	G	5a-9b	Y				H = 4-5' W = 3-4'	○	Variety	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sinensis 'Gracillimus' - Gracillimus Maiden Grass	G	5a-9b	Y		Y	M	H = 4-8' W = 3-6'	○	Variety	Moderate, consistently moist	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds
Miscanthus sinensis 'Graziella' - Graziella Maiden Grass	G	5a-9b	Y				H = 5-7' W = 3-4'	○	Variety	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental
Miscanthus sinensis 'Silberfeder' - Silver Feather Maiden Grass	G	4a-9b	Y				H = 6-8' W = 4'	⊙	Variety, rich	Low, well- drained	Asia	Adaptable to salt Deer, rabbit resistant Attracts birds
Miscanthus sinensis 'Strictus' - Porcupine Grass	G	5a-9b	Y			M	H = 4-9' W = 2-6'	○	Variety	Moderate, well drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds
Miscanthus sinensis 'varigatus' - Variegated Maiden Grass	G	5a-9b	Y		Y	M	H = 5-9' W = 4-5'	○	Loam	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds
Miscanthus sinensis 'Pünktchen' LITTLE DOT - Little Dot Maiden Grass	G	5a-9b	Y				H = 4-7' W = 4-6'	○	Variety	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Attracts birds
Miscanthus sinensis 'Morning Light' - Morning Light Maiden Grass	G	5a-9b	Y		Y	M	H = 4-6' W = 2.5-4'	○	Loam	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental Deer resistant Attracts birds
Miscanthus sinensis 'Yaku Jima' - Yaku Jima Maiden Grass	G	5a-9b	Y				H = 3-5' W = 3-5'	○	Variety	Low, well- drained	Japan, China, Korea	Heat tolerant Air pollution tolerant Ornamental

Miscanthus sinensis 'Zebrinus' - Zebra Grass	G	5a-9b	Y				H = 5-8' W = 4-6'	○	Variety, rich	Moderate, well- drained	Asia	Deer, rabbit resistant Attracts birds
Panicum virgatum 'Dallas Blues' - Dallas Blues Switch Grass	G	5a-9b	Y	Y	Y	M	H = 4-6' W = 2-3'	○	Sandy, clay	Low	Utah, North America	Air pollution tolerant Deer resistant Attracts birds
Panicum virgatum 'Cloud Nine' - Cloud Nine Switch Grass	G	5a-9b					H = 5-7' W = 2-3'	○	Variety	Moderate	Utah, North America	Adaptable to salt Attracts pollinators
Panicum virgatum 'Heavy Metal' - Heavy Metal Switch Grass	G	5a-9b	Y	Y	Y	F	H = 4-5' W = 1-3'	○	Sandy, clay	Low	North America	Air pollution tolerant Deer resistant Attracts birds
Panicum virgatum 'Prairie Sky' - Prairie Sky Switch Grass	G	4a-9b	Y		Y		H = 4-6' W = 2-3'	○	Sandy, clay	Low	E North America	Air pollution tolerant Attracts birds
Panicum virgatum 'Rotstrahlbusch' - Red Switch Grass	G	5a-9b	Y	Y	Y		H = 4-5' W = 2-3'	○	Variety	Low	E North America	Air pollution tolerant Attracts birds
Panicum virgatum 'Shenandoah' - Shenandoah Switch Grass	G	5a-9b	Y		Y	F	H = 3-4' W = 3-4'	○	Sandy, clay	Low	Utah, North America	Air pollution tolerant Deer resistant Attracts pollinators
Panicum virgatum 'Strictum' - Upright Switch Grass	G	4a-9b	Y			M	H = 4-6' W = 2-3'	⊙	Variety, dry	Low	Utah, North America	Attracts pollinators
Spartina pectinata - Prairie Cordgrass	G	4a-8b		Y			H = 20-30" W = 20-30"	⊙	Clay, loam, wet	High, consistently moist	North America	Wetland plant Deer resistant
Achillea millefolium 'Lilac Beauty' - Lilac Beauty Yarrow	P	3b-9b	Y	N		F	H = 18-36" W = 18-36"	⊙	Variety	Low, well- drained	North America, Europe, W Asia	Heat tolerant Nitrogen fixer Deer, rabbit, pest resistant Attracts pollinators
Achillea millefolium 'Little Susie' - Little Susie Yarrow	P	3b-9b	Y	N		F	H = 10-24" W = 12-24"	⊙	Variety	Moderate, well- drained		Heat tolerant Nitrogen fixer Deer, rabbit resistant Attracts pollinators
Achillea millefolium 'Paprika' - Paprika Yarrow	P	3b-9b	Y	N		F	H = 18-24" W = 18-24"	⊙	Variety	Low, well- drained		Adaptable to salt Urban, air pollution tolerant Nitrogen fixer Deer, rabbit resistant Attracts birds, pollinators
Achillea millefolium 'Pink Grapefruit' - Pink Grapefruit Yarrow	P	3b-9b	Y			F	H = 12-36" W = 12-30"	⊙	Variety	Low, well- drained	North America, Europe, W Asia	Heat tolerant Disease resistant Deer, rabbit resistant Attracts pollinators

Origanum vulgare - Oregano	P	4a-8b	Y				H = 12-36" W = 12-24"	☉	Loam	Low, well- drained	Europe, central Asia	Deer resistant Attracts pollinators
Sidalcea 'Party Girl' - Party Girl Prairie Mallow	P	5a-7b					H = 24-36" W = 18-24'	☉		Moderate, consistently moist, well- drained	W & central North America	Attracts birds, pollinators
Stachys byzantina 'Helen von Stein' - Helen von Stein Lamb's Ear	P	4a-8b	Y				H = 12-18" W = 18-24"	○		Low, well- drained		
Stachys byzantina 'Primrose Heron' - Primrose Heron Lambs Ear	P	4a-8b	Y				H = 12-18" W = 12-18"	☉	Loam	Low, well- drained	United States	Air pollution tolerant Deer, rabbit resistant
Thymus pseudolanuginosus - Woolly Thyme	P	5a-8b	Y			S	H = 3" W = 12"	☉	Variety	Moderate		Adaptable to salt Air pollution tolerant Deer, rabbit resistant Attracts pollinators
Verbena hastata - Blue Verain	P	3b-8b	N				H = 2-6' W = 1-2.5'	☉	Variety, wet	High	W North America	Deer resistant Attracts pollinators
Clematis ligusticifolia - Western White Clematis	V	5a-9b	Y			F	H = 20' W = 18'	○	Variety	Low, well- drained	W North America, Alberta, British Columbia	Rabbit resistant Attracts pollinator
Vitis labrusca 'Concord' - Concord Grape	V	5a-8b					H = 15-20' W = 15-20'	☉	Loam, rich, humusy	Moderate, well- drained	North America	Ornamental Deer, rabbit resistant
Vitis labrusca 'Niagara' - Niagara Grape	V	5a-8b				F	H = 15-20' W = 15-25"	☉	Loam, rich, humusy	Moderate, well- drained	North America	Ornamental
Vitis 'Himrod' - Himrod Grape	V	5a-8b				F	H = 15-20' W = 15-25"	☉	Loam, rich, humusy	Moderate, well- drained	Asia Minor; Turkey	Ornamental Deer, rabbit resistant
Vitis 'St. Theresa' - St. Theresa Grape	V	5a-8b					H = 15-20' W = 3-8'	○	Alkaline	Moderate		Cold tolerant Ornamental
Vitis x 'St. Theresa Seedless' - St. Theresa seedless grape	V	4a-8b					H = 15'-20' W = 3-8'	○	Loam, clay, alkaline	Moderate	Rocky Mountain Regions	Adaptable growing conditions

## References

- Colorado State University, Denver Botanical Gardens. (n.d.). Our Plants [Database]. Plant Select. <https://plantselect.org/plants/our-plants/>
- EPA. (n.d.). [Image of rain garden from the New Belgium Brewery in Fort Collins, Colorado]. Retrieved from <https://www.epa.gov/green-infrastructure/green-infrastructure-semi-arid-west>
- EPA. (n.d.). [Image of rain garden from taxi station in Colorado]. Retrieved from <https://www.epa.gov/green-infrastructure/green-infrastructure-semi-arid-west>
- Jordan Valley Water Conservancy District. (n.d.). Find Waterwise Plants [Database]. Conservation Garden Park. <https://conservationgardenpark.org/plants>
- Missouri Botanical Garden. (n.d.). Plant Finder [Database]. <https://www.missouribotanicalgarden.org/PlantFinder/plantfindersearch.aspx>
- Monrovia Nursery Company. (n.d.). Browse All Plants [Database]. Monrovia. <https://www.monrovia.com/shop.html?productFilter=>
- NC State University. (n.d.) North Carolina Extension Gardner Plant Toolbox [Database]. NC State Extension. [https://plants.ces.ncsu.edu/find\\_a\\_plant/](https://plants.ces.ncsu.edu/find_a_plant/)
- Oakland Nurseries. (n.d.) Plant Finder [Database]. <https://plants.oaklandnursery.com/12130001>
- Plants for a Future. (n.d.). Database Plant Search [Database]. <https://pfaf.org/user/>
- Sandy City Public Utilities. (2021). Sandy City Low Impact Development Toolbox. [Image of vegetated strip near parking lot]. Retrieved from <https://content.civicplus.com/api/assets/a3d38a2b-4511-49f8-9245-ada2d0421069>
- Utah Division of Water Quality. (2020). A Guide to Low Impact Development within Utah [Manual PDF]. Utah Department of Environmental Quality. <https://documents.deq.utah.gov/water-quality/stormwater/updes/DWQ-2019-000161.pdf>
- Utah Division of Water Quality. (2020). A Guide to Low Impact Development within Utah [Image of vegetated strip]. Utah Department of Environmental Quality. <https://documents.deq.utah.gov/water-quality/stormwater/updes/DWQ-2019-000161.pdf>

## References

Utah Division of Water Quality. (n.d.). [Image of bioretention cell in North Salt Lake]. Retrieved from <https://deq.utah.gov/wp-content/uploads/Bioretention-Cell-North-Salt-Lake-Large.jpg>

Utah Division of Water Quality. (2020). Plant Hardiness Zones [Map]. Utah Department of Environmental Quality. <https://documents.deq.utah.gov/water-quality/stormwater/updes/DWQ-2019-000161.pdf>

Utah State University. (n.d.). Range Plants of Utah [Database]. Utah State University Extension. <https://extension.usu.edu/rangeplants/>

Utah State University. (n.d.). TreeBrowser [Database]. Utah State University Extension. <https://extension.usu.edu/treebrowser/>

Utah State University Extension Photo Gallery. (n.d.). [Photo database]. Retrieved from <https://extension.usu.edu/employee/marketing/photos/multimedia-specialist>