Suggested Trees for Streetside Planting in Western Wisconsin USDA Hardiness Zone 4



Trees can successfully be planted streetside *if* matched to the site. Trees vary widely in physical characteristics & site requirements. Street trees should meet the following criteria:

tolerant of adverse soil conditions such as poor infiltration and drainage, compaction, droughtiness, low fertility, elevated alkalinity and salinity, and surface temperature extremes

When evaluating soil, keep in mind that undisturbed native soil is very uncommon in the streetside environment. Soil in the rooting zone often includes off-site backfill and construction debris; soil properties can be abruptly different between fill layers and from site to site; topsoil is typically minimal to nonexistent.

- tolerant of reflected heat (off pavement/metal/glass), wind, pollution, deicing salt and other contaminants
- relatively long lived, decay resistant, low maintenance and pest free
- form and branching habit will not block views of stop signs, driveways, etc.
- free of highly objectionable characteristics such as thorns, excessive litter or invasiveness

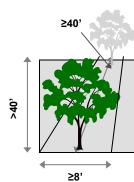
Street tree selection should further be based on anticipated size and shape at maturity. Consider available space above **and** below ground, noting restrictions such as overhead & buried utilities, storefront windows/doorways/awnings/signs, adjacent trees & buildings. Plant at least 5' from driveways, 10' from fire hydrants and 25' from street corners, or as otherwise specified by local ordinance. Plant tall-growing trees at least 20' from overhead power lines. Plant all trees at least 2' from sidewalks and curbs. Avoid planting trees on terraces (boulevards) less than 4' wide or less than 5' wide with buried utilities. Tall-growing trees, low-spreading trees and trees with strong surface-rooting tendencies need wide terraces. Trees with inadequate space can damage other infrastructure, require excessive maintenance, and become unattractive, unhealthy or hazardous.

To limit potential catastrophic loss from insects or diseases, strive for a diverse mixture of trees, generally no more than 10–20% of any *genus* (e.g., oak, maple, elm). Avoid trees that are already very common in the local landscape, even if those trees are otherwise suited for streetside use. Try unfamiliar trees in limited numbers until proven.

There is no "perfect" street tree. Trees listed on the following pages meet most or all of the general criteria above and are potentially suitable for streetside use. High-quality nursery stock, proper planting technique, regular watering, proper pruning and protection from damage are also essential to growing healthy, attractive & functional street trees.

notes: In this document, streetside means within 2–6' of the edge of a street &/or sidewalk.

In some cases, hardiness is further differentiated as zone 4a (Eau Claire) or 4b (La Crosse). Suggestions for Hardiness Zone 3 (Barron, Burnett, Polk, Washburn and southern 3/4^{ths} of Douglas County) are listed on the last page.



Tall Trees (mature height >40')

not recommended for terraces narrower than 8'

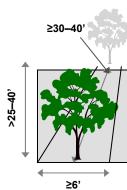
recommended spacing: ≥40'

botanic name	common name	cultivars	comments		
Acer x freemanii	Freeman maple*	Autumn Blaze ('Jeffersred'); Celebration ('Celzam'); Marmo; Scarlet Sentinel ('Scarsen'); Sienna Glen ('Sienna')	Freeman maple is a hybrid of silver and red maple, with the faster growth and adaptability of silver maple, the better branching and ornamental features of red maple; surface rooting; size, fall color & seed production vary by cultivar; Autumn Blaze needs considerable training pruning for good branch structure; Celebration, Marmo, Scarlet Sentinel & Sienna Glen are essentially seedless; see also Trees for Narrow Spaces		
Acer nigrum	black maple*	Greencolumn	black maple is very similar to sugar maple but more heat & drought tolerant; Greencolumn is upright & narrow, with yellow–orange fall color		
Acer platanoides	Norway maple *	Emerald Queen ('McGill No. 42'); Champtree ('National 2000')	Emerald Queen & Champtree are larger Norway maple cultivars, reaching ~50'; the species is described under Medium Trees; see also Short Trees and Trees for Narrow Spaces		
Aesculus hippocastanum	horsechestnut	Baumann ('Baumannii')	horsechestnut is slow growing; leaf scorch is common & can be severe on dry sites, but is not significant to tree health; moderate tolerance to deicing salt; Baumann has showy, white flowers, no fruit; untested in western WI; should be hardy to zone 4b		
Carpinus betulus	European hornbeam	Fastigiata	columnar when young, becoming rounded with age; formal-looking; heat and drought tolerant but sensitive to deicing salt—avoid high-speed thoroughfares; untested in western WI; should be hardy to zone 4b		
Celtis occidentalis	common hackberry	see comments	native to WI; potentially a very large tree; nipple gall is a common but harmless leaf problem; bare-root stock must be sweated before planting (see www.plant-materials.nrcs.usda.gov/pubs/ndpmcnl7274.pdf); Prairie Pride is more compact than the species; Windy City is upright & spreading		
Corylus colurna	Turkish filbert (Turkish hazel)		needs supplemental watering initially, then quite drought tolerant; small nuts can be a litter problem, though squirrels harvest the majority (solitary trees won't produce nuts); City of La Crosse has been using the species with success since '03		
Ginkgo biloba	ginkgo	see comments	underused, adaptable, low-maintenance tree; best planted B&B moderate deicing salt tolerance; use named cultivars (male/fruitless); height, spread & shape vary by cultivar; availability somewhat limited; poor-quality stock (headed back buried root collar) is common; Rochester, MN, uses various cultivars with excellent success; see also Medium Trees and Trees for Narrow Spaces		
Gymnocladus dioica	Kentucky coffeetree	Stately Manor; Espresso; Prairie Titan ('J.C. McDaniel')	 coffeetree is native to southern Wisconsin; pest free; choose named cultivars (male/fruitless & smaller) for streetside use; Stately Manor is narrow and upright; Espresso is upward-arching; Prairie Titan is oval; young trees look gangly but develop better appearance with age 		

Tall Trees - continued

Quercus bicolor*	bicolor oak (swamp white oak)		native to Wisconsin; underused; good drought tolerance; better transplant success than many oaks; requires slightly acid soil (pH≤6.7); see also Rosehill oak			
Quercus ellipsoidalis	northern pin oak	Majestic Skies ('Bailskies')	the species is native to Wisconsin; susceptible to oak wilt—avoid pruning April through July; Majestic Skies is a 2010 introduction from Bailey Nurseries, with improved form and branching; should be thoroughly hardy to zone 4			
Quercus muehlenbergii*	chinkapin oak		native to far southern Wisconsin; untested as a street tree in western WI; should be hardy to zone 4b			
Quercus palustris*	pin oak		underused; requires slightly acid soil (pH ≤6.7); susceptible to oak wilt—avoid pruning April through July; better form, fall color, growth rate and transplant success than most oaks; lower limbs angle downward, requiring more pruning for clearance over streets & sidewalks; see also Trees for Narrow Spaces			
Quercus robur*	English oak	see comments	tolerates higher-pH soils better than other oaks; English oak is hardy only to zone 5, but some hybrids and cultivars should be hardy to zone 4b; hybrids and cultivars have better size and form for streetside use; Attention! (<i>Q. robur</i> 'Wandell') is narrow–columnar; English oak hybrids and cultivars have not been thoroughly tested in western WI; see also Trees for Narrow Spaces			
<i>Quercus</i> Rosehill	Rosehill oak		bicolor x English oak hybrid; zone 4b			
Quercus x bimundorum	oak	Crimson Spire ('Crimschmidt')	white x English oak hybrid; spire-like; zone 4b; see also Trees for Narrow Spaces			
Quercus x macdanielli	oak	Heritage ('Clemon's')	bur x English oak hybrid; vigorous & mildew resistant; crown narrower than bur oak; should be hardy throughout zone			
Quercus x warei	oak	Regal Prince ('Long')	bicolor x English oak hybrid; narrow form; zone 4b			
Taxodium distichum	baldcypress	Shawnee Brave ('Mickelson')	baldcypress is a deciduous conifer; can be limbed up for street/sidewalk clearance; Shawnee Brave is narrower than the species; untested in western WI; should be hardy to zone 4b if from northern seed source			
Tilia americana	American linden (basswood)	Frontyard ('Bailyard'); Boulevard; Amercian Sentry ('McKSentry')	American linden is native to Wisconsin; larger leaves, better Japanese beetle resistance & better branch attachment than littleleaf lindens, but less salt tolerant; cultivars have better form; Frontyard is larger; Boulevard is narrowly pyramidal, reaching >60' tall x 25–30' wide; American Sentry is slightly shorter; see also Medium Trees			
Tilia cordata	littleleaf linden	see comments	littleleaf linden needs early pruning for strong branch structure; basal sprouting is common; many cultivars available— most have dense, symmetrical, teardrop-shaped crowns and a formal appearance; leaves susceptible to Japanese beetle damage; Prestige (<i>T. cordata</i> 'Norbert') is very cold hardy; Greenspire has inferior branching—other cultivars are preferable; see also Medium Trees, Short Trees and Trees for Narrow Spaces			
Tilia Redmond	Redmond linden		American x Crimean linden hybrid; dense, formal, teardrop-shaped crown; some basal sprouting; sensitive to deicing salt—avoid high-speed thoroughfares			
Tilia tomentosa	silver linden		faster growth and better pest, heat and drought resistance than other lindens; pH adaptable; silvery leaf undersides; more resistant than littleleaf linden to Japanese beetle; needs early pruning for strong branch structure; untested in western WI; should be hardy in zone 4b, marginally hardy in 4a			
Tilia x flavescens	linden	Glenleven	American x littleleaf linden hybrid; good branching, fast growing			
Ulmus americana	American elm	Prairie Expedition ('Lewis & Clark'); Princeton	Dutch elm disease–resistant/tolerant American elms; Prairie Expedition should be very cold hardy; see also comments for elm hybrids below			
Ulmus spp.	elm hybrids	see comments	many Dutch elm disease-resistant/tolerant elm hybrids are available; U of MN & City of Minneapolis have an ongoi elm evaluation project (see <u>http://www.forestry.umn.edu/extension/Home/ElmsTwinCities=Guide.pdf</u>); most <2"-cali elms need several years of training pruning and staking—buy larger stock if possible; try: Accolade, Commendation Danada Charm, New Horizon, Patriot, Triumph (somewhat susceptible to leaf pests); see also Medium Trees			

*If planting bare-root oak nursery stock, see www.plant-materials.nrcs.usda.gov/pubs/ndpmcnl7274.pdf.



Medium Trees (mature height >25-40')

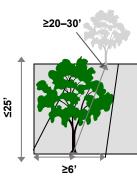
not recommended for terraces narrower than 6'

recommended spacing: ≥30–40'

botanic name common name cultivars		cultivars	comments		
Acer miyabei	Miyabe maple*	State Street ('Morton')	the species is more heat and drought tolerant than Norway maple; fast growing; ascending branches; adaptable; State Street has performed well in Eau Claire		
Acer platanoides	Norway maple*	see comments	an overused tree; invasive in some southern Wisconsin parks & woodlands—choose alternative species in zone 4b; surface rooting and dense shade make it difficult to grow grass under most Norway maple; very prone to stem-girdling roots and sunscald complex—high-quality stock, proper planting technique and adequate moisture during the establishment period are essential; dozens of cultivars available—several have maroon to purplish leaves & are often mistakenly called "red maple"; avoid Crimson King (not reliably hardy to zone 4) and Schwedler (more prone to frost crack); most cultivars top out at 40–45'; see also Tall Trees, Short Trees and Trees for Narrow Spaces		
Acer triflorum	three-flower maple*		matures at ~25-30'; untested in western WI; should be hardy to zone 4b if from northern seed source		
Acer Warrenred	Pacific Sunset maple*		Norway x Shantung maple hybrid; star-shaped foliage turns yellow to reddish purple in fall; not thoroughly tested in western WI—should be hardy to zone 4b if from northern seed source; can reach 45'		
Betula nigra	river birch	Dura-Heat ('BNMTF')	river birch is native to WI; needs supplemental watering initially, then fairly drought tolerant; use single stems, not clumps, for streetside planting; Dura-Heat has better heat tolerance and leaf-spot resistance than the species; untested as a street tree in western WI; should be hardy throughout zone 4; can reach 45'		
Ginkgo biloba	ginkgo	Autumn Gold; Halka; Mayfield; Saratoga; Shangri-La	shorter, more compact ginkgo cultivars, maturing at about 40–45'; availability may be limited; see also Trees for Narrow Spaces; other characteristics as described for ginkgo under Tall Trees		
Gleditsia triacanthos var. inermis	thornless honeylocust	see comments	honeylocust is native to Wisconsin; plant bugs and leafhoppers are frequent—but usually minor—leaf pests; most cultivars top out at 40–45'; though generally fruit-free, some cultivars bear a few pods; Sunburst is more pest prone; Skyline has a strong central leader & better branching; Imperial tends to lack a central leader & it branches low on the stem, requiring more clearance pruning, however City of Minneapolis has good success with it & plants bare-root, 1¾"– caliper stock		
Maackia amurensis	Amur maackia	see comments	hardy, uncommon tree; frequent name confusion with Amur chokecherry (<i>Prunus maackii</i>) to which it is unrelated; needs training pruning for good branch attachment; somewhat sensitive to deicing salt—avoid high-speed thoroughfares; untested in western WI but should be hardy to zone 3; City of Rochester, MN, has good success with the species; Starburst is a narrower, more upright cultivar; see also Small Trees and Trees for Narrow Spaces		
Malus spp.	crabapple	Spring Snow	Spring Snow is a larger, white-flowering crab, maturing at about 30'; no fruit; other characteristics as described for crabapple under Short Trees		
Phellodendron amurense	Amur corktree	Macho	Amur corktree is adaptable and pest free; slow to establish; needs pruning for street/sidewalk clearance; Macho is male/fruitless; limited availability; untested in western WI; should be hardy throughout zone 4		
Phellodendron lavallei	Lavalle corktree	Eyestopper ('Longenecker')	upright & broad spreading; very limited availability; untested in western WI; should be hardy to zone 4b		
Phellodendron sachalinense	Sakhalin corktree	His Majesty	slow growing; low branches need pruning for clearance; no fruit; very limited availability; untested in western WI; should be hardy throughout zone 4		

Medium Trees - continued

Prunus maackii	Amur chokecherry		less susceptible to black knot than other <i>Prunus</i> species; hardy to zone 3 if from northern seed source; prone to stem- girdling roots—high-quality stock and proper planting technique are essential; needs early pruning for good branch attachment; avoid excessive heat & deicing salt spray	
Pyrus calleryana	callery pear	Aristocrat; Autumn Blaze	most callery pears are not hardy to zone 4; Autumn Blaze is hardy throughout zone 4; it may have a few thorns & is susceptible to fire blight, though less so than in the south; Aristocrat has better branching, is marginally hardy in 4a but does well in 4b	
Pyrus ussuriensis	Ussurian pear	Mountain Frost ('Bailfrost')	Mountain Frost is a smaller, upright Ussurian pear; abundant white flowers in spring; sparse ~¾" fruit (solitary trees won't produce fruit); somewhat susceptible to fire blight; not thoroughly tested in western WI; limited availability; City of Rochester, MN, has very good success with Ussurian pear cultivars; should be hardy to zone 3; see also Short Trees	
Tilia americana	American linden (basswood)	Legend ('DTR 123'); Lincoln	Legend & Lincoln are smaller basswood cultivars, topping out at 40'; other characteristics as described for basswood under Tall Trees	
Tilia cordata	littleleaf linden	Chancellor ('Chancole'); Olympic & Shamrock ('Baileyi')	Chancellor, Olympic & Shamrock are smaller littleleaf lindens, maturing at 35–45'; other characteristics as described for littleleaf linden under Tall Trees; see also Short Trees and Trees for Narrow Spaces	
<i>Tilia</i> x 'Harvest Gold'	Harvest Gold linden		a littleleaf x Mongolian linden hybrid; Harvest Gold is slightly smaller than littleleaf linden and is less susceptible to snow-load damage; sunscald resistant; golden fall foliage; untested in western WI; should be hardy to zone 3	
<i>Ulmus</i> x 'Cathedral'	Cathedral elm		a Japanese x Siberian elm hybrid developed at University of Wisconsin; smaller than most disease-resistant/tolerant elms; other characteristics as described for elm hybrids under Tall Trees	



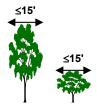
Short Trees (mature height ≤25')

not recommended for terraces narrower than 6'*

recommended spacing: ≥20–30'

botanic name common name cultivars			comments			
Acer platanoides	Norway maple*	Globe ('Globosum')	Globe is dense, compact, formal-looking; slower growing; see also Trees for Narrow Spaces; other characteristics as described for Norway maple under Medium Trees			
Acer tataricum	Tatarian maple *	Summer Splendor; Pattern Perfect ('Patdell'); Hot Wings ('GarAnn')	Tatarian maple is potentially invasive; do not plant near woodlands, natural areas, uncultivated fields, river corridors of other unmowed areas; choose single-stem plants for streetside planting; Summer Splendor produces less seed than the species; see also Trees for Narrow Spaces			
Acer truncatum	Shantung maple*		uncommon, drought-tolerant; untested in western WI; should be hardy throughout zone 4 if from northern seed source			
Amelanchier x grandiflora	apple serviceberry	Autumn Brilliance; Robin Hill				
Crataegus crusgalli var. inermis	thornless cockspur hawthorn	Crusader ('Cruzam')	cockspur hawthorn is native to Wisconsin; the species has thorns & a wide-spreading crown; Crusader is thornless & narrower, with better disease resistance & orange fall color; fruit drop is a potential litter concern; hawthorn flower odor is generally considered unpleasant, but lasts only a week; somewhat sensitive to deicing salt spray–avoid high-speed thoroughfares; see also Trees for Narrow Spaces			
Crataegus viridis	green hawthorn	Winter King	nice ornamental features; low-spreading crown requires wider terrace; essentially thornless; hardy to zone 4b			
Maackia amurensis	Amur maackia	Summertime	Summertime is a smaller Amur maackia, maturing at about 20'; other characteristics as described for Amur maackia under Medium Trees; see also Trees for Narrow Spaces			
<i>Malus</i> spp.	flowering crab (crabapple)	see comments	dozens of species & cultivars—most mature at ~20' but some are taller; choose <i>upright, disease resistant</i> cultivars; purple-leaf cultivars are favored by Japanese beetle; basal sprouting is common on many crabs; good white-flowering choices are Adirondack, Golden Raindrops, Harvest Gold, Red Jewel and Sugar Tyme; good pink-flowering choices are Pink Satin and Sentinel; good red-flowering choices are Centurion, Kelsey, Prairifire (wider terrace) and Red Baron; see also Medium Trees and Trees for Narrow Spaces			
Pyrus ussuriensis	Ussurian pear	Prairie Gem ('MorDak')	Prairie Gem is a smaller, more rounded Ussurian pear, maturing at about 25'; untested in western WI; other characteristics as described for Ussurian pear under Medium Trees			
Syringa pekinensis	Pekin lilac	Summer Charm ('DTR 124')	Pekin lilac (Peking lilac) is similar to the more common Japanese tree lilac, though slightly less cold hardy; Summer Charm has more upright, predictable form than the species; Pekin lilac has not been thoroughly tested as a street tree in western WI; should be hardy throughout zone 4; see also Trees for Narrow Spaces			
Syringa reticulata	Japanese tree lilac	several	common beneath power lines; large, white, flower panicles in June; no fall color; grows slowly at first; cultivars have better form for streetside use; see also Trees for Narrow Spaces			
Tilia cordata	littleleaf linden	Summer Sprite ('Halka')				

*Many short trees reach their maximum crown spread low on the stem and need ≥ 6 '-wide terraces to avoid potential clearance problems. Most do well in properly constructed raised planters with accommodation for irrigation and drainage.



Narrow Trees

(crown spread ≤15') recommended terrace width varies*

botanic name	common name	spread	comments
Acer x freemanii 'Armstrong'	Armstrong maple*	15'	40–50'; produces seed; the species is described under Tall Trees
Acer platanoides 'Columnare'	Columnare Norway maple*	10'	matures at ~40'; the species is described under Tall Trees
Acer tataricum 'Summer Splendor'	Summer Splendor Tatarian maple*	15'	15–20' tall; bright red fruit in summer; somewhat less fruit than most Tatarian maple; <i>the species is described under Short Trees</i>
<i>Amelanchier</i> x <i>grandiflora</i> 'Robin Hill'	Robin Hill serviceberry	15'	20–25' tall; other characteristics as described under Short Trees
Crataegus crusgalli 'Cruzam'	Crusader cockspur hawthorn	15'	~15' tall; rounded form; other characteristics as described under Short Trees
Ginkgo biloba 'Mayfield'	Mayfield ginkgo	8–10'	30' tall; habit similar to Lombardy poplar; the species is described under Tall Trees
Maackia amurensis 'Summertime'	Summertime Amur maackia	<15'	a smaller Amur maackia, maturing at about 20' tall; the species is described under Medium
			Trees; see also Short Trees
<i>Malus</i> spp.	flowering crab (crabapple)	10–15'	most flowering crab cultivars spread to ~15'; narrower and wider cultivars are available; <i>the species is described under Short Trees</i>
Quercus palustris 'Pringreen'	Green Pillar (Emerald Pillar) pin oak	15'	a faster-growing oak, tops out at 50'; begins branching low on the stem; <i>the species is described under Tall Trees</i>
Quercus robur 'Wandell'	Attention! English oak	15'	tall, columnar; formal appearance; other characteristics as described under Tall Trees
Quercus x bimundorum 'Crimschmidt'	Crimson Spire oak	15'	tall, columnar; formal appearance; other characteristics as described under Tall Trees
Syringa pekinensis 'DTR 124'	Summer Charm Pekin lilac	15'	somewhat narrower than other Pekin lilac cultivars; the species is described under Short Trees
<i>Syringa reticulata</i> 'Elliot'; 'Ivory Silk'; 'PNI 5723'; 'Willamette'	Snowcap, Ivory Silk, Regent & Ivory Pillar Japanese tree lilac	15'	narrower Japanese tree lilac cultivars; the species is described under Short Trees
Tilia cordata 'Corzam'; 'Halka'	Corinthian & Summer Sprite littleleaf linden	10–15'	Corinthian is columnar, ~45' tall x 15' wide; Summer Sprite is a dwarf form, 15–20' tall x <10' wide; other characteristics as described under Tall Trees

* Some narrow trees need wide terraces due to low branching or surface rooting

Street Trees for Zone 3

(see descriptions on preceding pages)

Tall Trees

- Sienna Glen maple* (*Acer* x *freemanii* 'Sienna Glen') should be hardy throughout zone 3; other Freeman maple cultivars marginally hardy
- common hackberry (Celtis occidentalis) hardy to at least 3b
- ginkgo (Ginkgo biloba) possibly 3b
- Kentucky coffeetree (*Gymnocladus dioica*) probably 3b only
- bicolor oak (Quercus bicolor) marginally hardy in 3b
- Majestic Skies northern pin oak (Quercus ellipsoidalis 'Bailskies') should be hardy throughout zone 3
- American linden (*Tilia americana*) should be hardy throughout zone 3
- Redmond linden (Tilia 'Redmond') probably 3b only
- littleleaf linden (*Tilia cordata*) hardy to zone 3b; Norlin (*Tilia cordata* 'Ronald') should be hardy to 3a
- Glenleven linden (*Tilia* x *flavescens* 'Glenleven')
- Harvest Gold linden (*Tilia* x 'Harvest Gold') should be hardy throughout zone 3
- Prairie Expedition elm (Ulmus americana 'Lewis & Clark') should be hardy throughout zone 3

Medium Trees

- Norway maple* (Acer platanoides) generally zone 4; some cultivars marginally hardy to 3b
- ginkgo (Ginkgo biloba) possibly 3b
- Northern Acclaim honeylocust (*Gleditsia triacanthos* var. *inermis* 'Harve') should be hardy to 3b; other cultivars marginally hardy in 3b
- Amur maackia (Maackia amurensis)
- Macho Amur corktree (*Phellodendron amurense* 'Macho') 3b only
- His Majesty Sakhalin corktree (*Phellodendron sachalinense* 'His Majesty') 3b only
- Amur chokecherry (Prunus maackii)
- Mountain Frost Ussurian pear (*Pyrus ussuriensis* 'Bailfrost')
- Chancellor, Olympic & Shamrock linden (*Tilia cordata* 'Chancole', 'Olympic' & 'Baileyi') 3b only

Short Trees

- Tatarian maple* (Acer tataricum)
- Autumn Brilliance and Robin Hill serviceberry (*Amelanchier* x grandiflora 'Autumn Brilliance' & 'Robin Hill')
- Crusader cockspur hawthorn (Crataegus crusgalli 'Cruzam') 3b only
- Summertime Amur maackia (Maackia amurensis 'Summertime')
- crabapple (*Malus* spp.) hardiness varies by cultivar; many are not reliably hardy in zone 3
- Prairie Gem Ussurian pear (*Pyrus ussuriensis* 'MorDak')
- Japanese tree lilac (*Syringa reticulata*)