Appendix B
General List of Acceptable Plants

Recommended Plants for Lake Calumet Landscaping

Community Definitions

DE = Deep Emergent/Aquatic Bed	RD = Roadside/Ditch	SE = Shallow Emergent	WMP = Wet Mesic Prairie
LMP = Low-profile Mesic Prairie	RI = Riparian/Wet-Mesic Woods	TMP = Tall Mesic Prairie	WD = Woodland
O = Other*	SA = Savanna	WP = Wet Prairie/Sedge Meadow	DP = Dry Prairie

Common Name	Scientific Name	Community												NATIVE Spp.	Plant Tolerances					Notes
Species are listed alphabetically by their scientific name.		O	DP	LMP	TMP	SA	WD	RI	RD	WMP	WP	SE	DE		Salt	Clay	Drought	Stormwater Facility Conditions		
OVERSTORY TREES																				
Marmo maple	*Acer x freemanii*	x							x						x	x				3
Black maple	*Acer nigrum*	x				x	x							x			x			
Silver maple	*Acer saccharinum*							x						x	x	x	x			
Sugar maple	*Acer saccharum*	x					x		x					x		x	x			
"Green Mountain" sugar maple	*Acer saccharum* " Green Mountain"	x							x						x	x				
Ohio buckeye	*Aesculus glabra*	x				x	x	x						x						
Bitternut hickory	*Carya cordiformis*	x				x	x	x						x			x			
Shagbark hickory	*Carya ovata*	x				x	x	x						x		x	x			
Hardy catalpa	*Catalpa speciosa*	x													x		x			
Hackberry	*Celtis occidentalis*	x				x	x	x	x	x				x	x		x	x		
White ash	*Fraxinus americana*	x				x	x	x	x					x	x		x			3
Black ash	*Fraxinus nigra*	x					x	x						x						3
Green ash	*Fraxinus pennsylvanica*						x	x						x	x		x	x		3
Blue ash	*Fraxinus quadrangulata*	x				x	x	x						x						
Kentucky coffee tree	*Gymnocladus dioica*	x				x	x	x	x					x	x	x	x			
Butternut	*Juglans cinerea*					x	x	x						x						
Black walnut	*Juglans nigra*					x	x	x						x	x					
American larch	*Larix laricina*	x				x	x			x				x	x	x	x			5
Sycamore	*Platanus occidentalis*					x	x	x						x			x			
Eastern cottonwood	*Populus deltoides*							x						x	x	x	x	x		
Wild black cherry	*Prunus serotina*						x	x						x	x		x			3
White oak	*Quercus alba*	x				x	x							x	x	x				5
Swamp white oak	*Quercus bicolor*	x				x	x	x	x	x	x			x	x	x	x			
Shingle oak	*Quercus imbricaria*	x				x	x	x						x	x		x			
Bur oak	*Quercus macrocarpa*	x				x	x	x						x		x	x			
Black oak	*Quercus velutina*	x				x	x							x						5
Black willow	*Salix nigra*							x		x	x			x	x	x	x	x		
Basswood	*Tilia americana*	x				x	x	x	x	x				x	x		x			
Slippery elm	*Ulmus rubra*						x	x						x						
INTERMEDIATE TREES																				
Shadblow serviceberry	*Amelanchier arborea/canadensis*	x					x	x						x			x			
Round-leaved serviceberry	*Amelanchier sanguinea*	x					x	x						x						
River birch	*Betula nigra*	x				x	x	x						x		x	x			5
Hophornbeam	*Carpinus caroliniana*	x				x	x	x						x		x	x			
Northern redbud	*Cercis canadensis*	x								x				x	x		x			
Fringe tree	*Chionanthus virginicus*	x																		
Pagoda dogwood	*Cornus alternifolia*	x				x	x	x						x						

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Cockspur hawthorn	*Crataegus crus-galli*	x				x	x	x		x				x	x	x	x		
Thornless hawthorn	*Crataegus crus-galli inermis*	x				x	x	x		x				x	x	x	x		
Downy hawthorn	*Crataegus mollis*	x				x	x	x						x					
Eastern wahoo	*Euonymus atropurpureus*	x				x	x	x						x		x	x		
Witch hazel	*Hamamelis virginiana*	x				x	x							x					
Iowa crab	*Malus ioensis*	x				x	x							x					
"Adams" crabapple	*Malus* "Adams"	x																	2
"Beverly" crabapple	*Malus* "Beverly"	x																	
"Prairifire" crabapple	*Malus* "Prairifire"	x																	
"Sagentii" crabapple	*Malus* "Sargentii"	x																	
Eastern hophornbeam	*Ostrya virginiana*	x					x	x						x		x	x		
Wild plum	*Prunus americana*	x					x	x						x					
Wafer ash	*Ptelea trifoliata*	x			x	x	x			x				x	x		x		
Nannyberry	*Viburnum lentago*	x				x	x	x	x	x				x			x		
Blackhaw	*Viburnum prunifolium*	x				x	x	x	x					x			x		
EVERGREEN TREE																			
White fir	*Abies concolor*	x																	
Eastern red cedar	*Juniperus virginiana*	x		x	x	x	x							x	x	x	x		
White pine	*Pinus strobus*	x												x		x			5
Douglas fir	*Pseudotsuga menziesii*	x																	
White cedar	*Thuja occidentalis*	x			x	x				x				x	x	x	x		
Hemlock	*Tsuga canadensis*	x												x					5
DECIDUOUS SHRUBS																			
Leadplant	*Amorpha canescens*	x	x	x	x	x			x	x				x			x		
False indigo	*Amorpha fruticosa*	x			x	x		x						x	x		x		
Red chokeberry	*Aronia arbutifolia*	x				x		x	x	x				x	x		x		
Black chokeberry	*Aronia melanocarpa*	x				x	x	x	x					x	x		x		
New Jersey tea	*Ceanothus americanus*	x	x	x	x	x								x		x	x		
Buttonbush	*Cephalanthus occidentalis*	x						x	x		x	x		x	x		x	x	
Silky dogwood	*Cornus amomum/obliqua*	x				x	x	x		x				x			x		
Red-osier dogwood	*Cornus sericea/stolonifera*	x				x	x	x	x	x	x			x			x	x	
"Bailey's" redtwig dogwood	*Cornus sericea* "Bailey's"	x								x	x						x	x	
"Cardinal" redtwig dogwood	*Cornus sericea* "Cardinal"	x								x	x						x	x	
"Isanti" redtwig dogwood	*Cornus sericea* "Isanti"	x							x	x	x				x		x	x	
American hazelnut	*Corylus americana*	x				x	x	x						x					
Dwarf honeysuckle	*Diervilla lonicera*	x				x	x							x	x				
Leatherwood	*Dirca palustris*	x				x	x							x					
Smooth hydrangea	*Hydrangea arborescens*	x					x							x					

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Kalm's St. Johnswort	*Hypericum kalmianum*	x							x	x				x		x			
Shrubby St. Johnswort	*Hypericum prolificum*	x			x			x						x					
Winterberry	*Ilex verticillata*	x				x	x	x	x	x				x	x		x		
Spicebush	*Lindera benzoin*	x				x	x	x		x				x	x		x		
Red honeysuckle	*Lonicera dioica*	x				x	x							x					
Ninebark	*Physocarpus opulifolius*	x				x	x	x	x	x				x			x		
Fragrant sumac	*Rhus aromatica*	x		x		x	x							x	x		x		3
Dwarf fragrant sumac	*Rhus aromatica* "Gro-low"	x		x					x						x		x		3
Shining sumac	*Rhus copallina*	x		x	x	x	x		x					x	x	x	x		
Smooth sumac	*Rhus glabra*	x			x	x	x		x					x	x	x	x		3
Staghorn sumac	*Rhus typhina*	x			x	x	x		x					x	x	x	x		
Alpine currant	*Ribes alpinum*	x																	3
"Green Mount"Alpine currant	*Ribes alpinum* "Green Mound"	x																	
Amer. black currant	*Ribes americanum*	x				x	x	x		x				x					
Prickly wild gooseberry	*Ribes cynobasti*	x				x	x	x						x					
Wild gooseberry	*Ribes missouriense*	x				x	x	x		x				x					
Early wild rose	*Rosa blanda*	x			x	x	x	x						x					
"Carefree Beauty" shrub rose	*Rosa* "Carefree Beauty"	x															x		2
"Knockout" shrub rose	*Rosa* "Knockout"	x																	
"Pink Meidiland" shrub rose	*Rosa* "Pink Meidiland"	x																	
"Red Meidiland" shrub rose	*Rosa* "Red Meidiland"	x																	
"Scarlet Meidiland" shrub rose	*Rosa* "Scarlet Meidiland"	x																	
"The Fairy" shurb rose	*Rosa* "The Fairy"	x																	
"Nearly Wild" shrub rose	*Rosa* "Nearly Wild"	x																	
Pasture rose	*Rosa carolina*	x	x	x	x	x								x			x		
Swamp rose	*Rosa palustris*							x		x	x			x					
Illinois rose	*Rosa setigera*	x				x	x							x					
Purple flowering raspberry	*Rubus odoratus*	x						x						x					
Peachleaf willow	*Salix amygdaloides*							x		x	x			x	x	x	x		
Pussy willow	*Salix discolor*							x		x	x			x	x	x	x		
Elderberry	*Sambucus canadensis*	x				x	x	x	x	x	x			x	x		x		
Meadowsweet	*Spirea alba*	x				x	x	x		x				x			x		
Bladdernut	*Staphylea trifolia*	x				x	x	x						x					
Snowbell	*Stryax americana*	x						x						x					
Snowberry	*Symphoricarpos albus*	x				x	x	x						x					
Wolfberry	*Symphoricarpos occidentalis*	x				x	x							x					
Maple-leaved arrowwood	*Viburnum acerifolium*	x				x	x							x					
Withe rod	*Viburnum cassinoides*	x				x		x						x					
Arrowwood viburnum	*Viburnum dentatum*	x							x						x		x		
"Autumn jazz" arrowwood viburnum	*Viburnum dentatum* "Autumn Jazz"	x							x										4

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"Chicago Lustre" arrowwood viburnum	*Viburnum dentatum* "Chicago Lustre"	x							x										
Downy arrowwood	*Viburnum rafinesquianum*	x				x	x							x					
Highbush cranberry viburnum	*Viburnum trilobum*	x				x	x	x	x	x				x			x		
"Compactum" Highbush cranberry viburnum	*Viburnum trilobum* "Compactum"	x																	
"Hahs" highbush cranberry viburnum	*Viburnum trilobum* "Hahs"	x																	
"Wentworth" Highbush cranberry viburnum	*Viburnum trilobum* "Wentworth"	x																	
EVERGREEN SHRUB																			
Trailing juniper	*Juniperus horizontalis*	x				x								x			x		
VINES																			
Climbing bittersweet	*Celastrus scandens*	x				x	x							x					
Virgin's bower	*Clematis virginiana*	x					x	x		x							x		
Virginia creeper	*Parthenocissus quinquefolia*	x					x	x		x				x	x				
Riverbank grape	*Vitis riparia*	x					x	x		x				x					
COVER CROP																			
Redtop	*Agrostis alba*	x		x				x	x	x	x	x			x		x	x	
Bentgrass	*Agrostis alba palustris*	x				x		x	x	x	x	x		x	x		x	x	
Seed oats	*Avena sativa*		x	x	x	x	x	x	x	x	x	x						x	
Chufa	*Cyperus esculentus*							x	x		x	x					x	x	
Barnyard grass	*Echinochloa crus-galli*							x	x	x	x			x			x	x	
Annual ryegrass	*Lolium multiflorum*		x	x	x	x	x	x	x	x	x							x	
Timothy	*Phleum pratense*			x	x	x	x	x	x	x								x	
GRASSES																			
Slender wheatgrass	*Agropyron trachycaulum*	x		x	x	x		x	x	x	x			x	x		x	x	
Big bluestem	*Andropogon gerardii*	x	x		x	x		x	x	x	x			x	x	x	x		
"Pawnee" big bluestem	*Andropogon gerardii* "Pawnee"	x																	
Little bluestem	*Andropogon scoparius*	x	x	x	x	x			x					x	x		x	x	
Side-oats grama	*Bouteloua curtipendula*	x	x	x	x	x			x					x			x	x	
Blue grama	*Bouteloua gracilis*	x	x						x						x		x		
Fringed brome	*Bromus ciliatus*	x							x	x	x			x	x		x		
Prairie brome	*Bromus kalmii*	x		x	x	x		x						x					
Ear-leaved brome	*Bromus latiglumis*	x				x	x	x						x					
Woodland brome	*Bromus pubescens*	x				x	x							x					
Buffalograss	*Buchloe dactyloides*	x	x	x					x						x		x		
Feather reed grass	*Calamagrostis acutifolia* "Karl Foerster"	x (or use *Koeleria cristata* as a native alternative)															x		3
Bluejoint reedgrass	*Calmagrostis canadensis*							x			x	x		x			x	x	
Common wood reed	*Cinna arundinacea*	x					x	x						x					

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Tufted hairgrass	*Deschampsia caespitosa glauca*	x						x		x	x			x					
"Goldschleier" tufted hairgrass	*Deschampsia caespitosa* "Goldschleier"	x																	
"Northern Lights" tufted hairgrass	*Deschampsia caespitosa* "Northern Lights"	x																	
"Schottland" tufted hairgrass	*Deschampsia caespitosa* "Schottland"	x																	
"Fairy's Joke" viviparous hairgrass	*Deschampsia caespitosa* var. syn. "Fairy's Joke"	x																	
Beak grass	*Diarrhenia americana*	x				x	x	x						x					
Canada wildrye	*Elymus canadensis*	x			x	x		x	x	x	x			x	x	x	x	x	
Streambank rye	*Elymus riparius*	x					x	x		x				x					
Silky wildrye	*Elymus villosus*	x				x	x	x		x				x					
Virginia wildrye	*Elymus virginicus*	x			x	x	x	x	x	x	x			x	x			x	
Nodding fescue	*Festuca obtusa*	x				x	x	x						x					
Blue fescue	*Festuca ovina* "Elijah Blue"	x															x		
Fowl mannagrass	*Glyceria striata*					x		x	x	x	x	x		x			x	x	
Blue oat grass	*Helictotrichon sempervirens*	x													x		x		
Sweet grass	*Hierochloe odorata*										x			x			x		
Foxtail barley	*Hordeum jubatum*								x						x		x		
Little barley	*Hordeum pusillum*								x						x				
Bottlebrush grass	*Hystrix patula*	x				x	x	x						x			x		
Prairie junegrass	*Koeleria cristata*	x	x	x										x			x		
Rice cutgrass	*Leersia oryzoides*							x	x		x	x		x			x	x	
Giant Chinese silver grass	*Miscanthus giganteus*	x (or use *Sorghastrum nutans* or *Koeleria cristata* as native alternatives)															x		
"Adaigo" Japanese silver grass	*Miscanthus sinensis* "Adaigo"	x (or use *Sorghastrum nutans* or *Koeleria cristata* as native alternatives)													x		x		
Narrow-leaved Japanese silver grass	*Miscanthus sinensis* "Gracillimus"	x (or use *Sorghastrum nutans* or *Koeleria cristata* as native alternatives)													x		x		
"Morning Light" Japanese silver grass	*Miscanthus sinensis* "Morning Light"	x (or use *Sorghastrum nutans* or *Koeleria cristata* as native alternatives)															x		3
Flame grass	*Miscanthus sinensis* "Purpurascens"	x (or use *Sorghastrum nutans* or *Koeleria cristata* as native alternatives)															x		
"Silver Spider" Japanese silver grass	*Miscanthus sinensis* "Silberspinne"	x (or use *Sorghastrum nutans* or *Koeleria cristata* as native alternatives)															x		
Porcupine grass	*Miscanthus sinensis* "Strictus"	x (or use *Sorghastrum nutans* or *Koeleria cristata* as native alternatives)															x		
Knee grass	*Panicum dichotomiflorum*							x	x	x	x			x					
Prairie switchgrass	*Panicum virgatum*	x			x	x		x	x	x	x			x	x	x	x	x	
"Cloud Nine" switch grass	*Panicum virgatum* "Cloud Nine"	x															x		
"Dallas Blues" switch grass	*Panicum virgatum* "Dallas Blues"	x																	
"Heavy Metal" switch grass	*Panicum virgatum* "Heavy Metal"	x													x		x		
"North Wind" switch grass	*Panicum virgatum* "North Wind"	x																	
"Prairie Sky" switch grass	*Panicum virgatum* "Prairie Sky"	x																	
"Rebraun" switch grass	*Panicum virgatum* "Rebraun"	x																	
Red switch grass	*Panicum virgatum* "Rostrahlbusch"	x													x		x		
Red switch grass	*Panicum virgatum* "Shenandoah"	x																	
Fountain grass	*Pennisetum alopecuroides*	x													x		x		
Dwarf fountain grass	*Pennisetum alopecuroides "Hameln"*	x													x		x		3
"Little Bunny" fountain grass	*Pennisetum alopecuroides* "Little Bunny"	x													x				

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Marsh bluegrass	*Poa palustris*								x	x	x			x					
Alkali grass	*Puccinellia distans*								x						x		x		
"The Blues" little bluestem	*Schizachyrium scoparium* "The Blues"	x																	
Indiangrass	*Sorghastrum nutans*	x			x	x		x	x	x				x	x	x	x	x	
"Sioux Blue" Indiangrass	*Sorghastrum nutans* "Sioux Blue"	x																	
Prairie cordgrass	*Spartina pectinata*							x	x	x	x	x		x	x		x	x	
Silver spiked grass	*Spodiopogon sibiricus*	x																	
Sand dropseed	*Sporobolus cryptandrus*		x						x					x			x		
Prairie dropseed	*Sporobolus heterolepis*	x	x	x	x				x					x	x		x	x	
Porcupine grass	*Stipa spartea*	x	x	x	x	x	x							x			x		
SEDGES, RUSHES, AND REEDS																			
Large yellow fox sedge	*Carex annectans*			x					x	x	x			x			x	x	
Water sedge	*Carex aquatilis*										x			x					
Bebb's sedge	*Carex bebbii*									x	x			x				x	
Copper-shouldered oval sedge	*Carex bicknellii*	x	x	x	x	x				x				x			x		
Common wood sedge	*Carex blanda*	x				x	x	x						x					
Dark scaled sedge	*Carex buxbaumii*	x		x	x	x								x					
Bottlebrush sedge	*Carex comosa*										x	x		x			x	x	
Fringed sedge	*Carex crinita*							x			x			x				x	
Crested oval sedge	*Carex cristatella*							x			x			x			x	x	
Riverbank sedge	*Carex emoryi*							x	x		x			x			x	x	
Bristly cattail sedge	*Carex frankii*							x	x		x			x				x	
Pale sedge	*Carex granularis*	x					x	x	x					x					
Common bur sedge	*Carex grayi*	x					x	x			x			x					
Hairy wood sedge	*Carex hirtifolia*	x					x		x					x					
Porcupine sedge	*Carex hystericina*							x			x	x		x				x	
Grass sedge	*Carex jamesii*	x					x	x						x					1
Lake sedge	*Carex lacustris*							x			x	x		x					
Wooly sedge	*Carex lanuginosa (pellita)*								x		x			x	x		x	x	
Common hop sedge	*Carex lupulina*							x			x			x					
Field oval sedge	*Carex molesta*	x		x	x	x	x							x					
Swamp oval sedge	*Carex muskingumensis*	x						x						x					1
"Ice Fountain" variegated sedge	*Carex muskingumensis* "Ice Fountain"	x																	
Nebraska sedge	*Carex nebrascensis*								x						x				
Spreading oval sedge	*Carex normalis*	x					x	x	x	x	x			x				x	
Penn's sedge	*Carex pensylvanica*	x				x	x	x						x					1
Expressway sedge	*Carex praegracilis*								x						x				
Loose-headed oval sedge	*Carex projecta*	x					x	x						x					
Straight-styled wood sedge	*Carex radiata*	x					x	x						x					1

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Curly-styled wood sedge	*Carex rosea*	x				x	x	x						x					1
Loose-headed bracted sedge	*Carex sparganioides*	x					x	x			x			x			x		
Lance-fruited oval sedge	*Carex scoparia*										x			x				x	
Short's sedge	*Carex shortiana*	x					x	x						x					
Narrow-leaved cattail	*Carex squarrosa*							x			x			x					
Awl-fruited sedge	*Carex stipata*							x	x	x	x	x		x			x	x	
Tussock sedge	*Carex stricta*										x	x		x					
Awl-fruited oval sedge	*Carex tribuloides*							x	x		x			x				x	
Hairy-fruited lake sedge	*Carex trichocarpa*							x			x			x					
Fox sedge	*Carex vulpinoidea*							x	x	x	x	x		x			x	x	
Slender spikerush	*Eleocharis acicularis*							x	x		x	x		x	x			x	
Red-rooted spikerush	*Eleocharis erythropoda*							x	x		x	x		x			x	x	
Blunt spikerush	*Eleocharis obtusa*							x			x	x		x				x	
Marsh spikerush	*Eleocharis palustris*							x	x			x		x	x			x	
Creeping spikerush	*Eleocharis smallii*								x		x	x		x	x				
Baltic rush	*Juncus balticus*								x						x		x		
Toad rush	*Juncus bufonis*	x						x			x			x					
Dudley's rush	*Juncus dudleyi*									x	x	x		x				x	
Soft rush	*Juncus effusus*							x		x	x	x		x				x	
Joint rush	*Juncus nodosus*										x	x		x				x	
Path rush	*Juncus tenuis*	x					x	x		x	x			x				x	1
Torrey's rush	*Juncus torreyi*							x		x	x			x			x	x	
Hardstem bulrush	*Scirpus acutus*								x			x	x	x	x			x	
Dark green rush	*Scirpus atrovirens*							x	x	x	x	x		x			x	x	
Woolgrass	*Scirpus cyperinus*							x	x	x	x			x			x	x	
River bulrush	*Scirpus fluviatilis*										x	x	x	x				x	
Alkali bulrush	*Scirpus paludosus*								x						x				
Red bulrush	*Scirpus pendulus*							x	x	x	x			x			x	x	
Common three-square	*Scirpus pungens*								x			x		x	x		x	x	
Softstem bulrush	*Scirpus validus*								x			x	x	x				x	
Common burreed	*Sparganium eurycarpum*											x		x				x	
PERENNIALS/FORBS																			
Common yarrow	*Achillea millefolium*	x							x						x				2
"Cornation Gold" Yarrow	*Achillea* "Coronation Gold"	x															x		
"Moonshine" Yarrow	*Achillea* "Moonshine"	x															x		
"Paprika" Yarrow	*Achillea* "Paprika"	x															x		
Sweet flag	*Acorus calamus*								x			x		x	x			x	
White baneberry	*Actaea pachypoda*	x					x							x					
Red baneberry	*Actaea rubra*	x					x	x						x					

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Wingstem	*Actinomeris alternifolia*	x				x	x	x		x	x			x				x	
Yellow giant hyssop	*Agastache nepetoides*	x				x	x							x					
Purple giant hyssop	*Agastache scrophulariaefolia*	x				x	x							x					
Carpet bugle	*Ajuga reptans*	x																	2
Lady's mantle	*Alchemilla mollis*	x																	
Water plantain	*Alisma subcordatum*								x		x	x		x	x		x	x	
Nodding wild onion	*Allium cernuum*	x	x	x	x	x	x	x		x				x		x		x	
Wild leek	*Allium tricoccum*	x					x	x						x					
Canada anemone	*Anemone canadensis*	x		x	x	x	x		x					x				x	
Thimbleweed	*Anemone cylindrica*	x	x		x									x			x		
Pasque flower	*Anemone patens*	x	x											x			x		
"September Charm" anemone	*Anemone* "September Charm"	x																	
Rue anemone	*Anemonella thalictroides*	x				x	x	x						x					
Great angelica	*Angelica atropurpurea*									x	x			x					
Pussytoes	*Antennaria plantaginifolia*	x	x	x										x			x		
Wild columbine	*Aquilegia canadensis*	x				x	x	x						x					
"Corbett" wild columbine	*Aquilegia canadensis* "Corbett"	x																	
Green dragon	*Arisaema dracontium*	x					x	x						x					
Jack-in-the-pulpit	*Arisaema triphyllum*	x				x	x	x						x			x		
Goatsbeard	*Aruncus dioicus*	x					x	x						x					
Wild ginger	*Asarum canadense*	x					x							x					1
Swamp milkweed	*Asclepias incarnata*							x	x	x	x	x		x			x	x	
"Ice ballet" swamp milkweed	*Asclepias incarnata* "Ice ballet"	x																	
"Soulmate" swamp milkweed	*Asclepias incarnata* "Soulmate"	x																	
Prairie milkweed	*Asclepias sullivantia*	x		x	x									x			x		
Butterflyweed	*Asclepias tuberosa*	x	x	x	x	x								x	x		x	x	
Sky blue aster	*Aster azureus*	x	x	x	x	x	x							x			x		
Rice-buttoned aster	*Aster dumosus*	x	x											x					
"Blue Lagoon" aster	*Aster dumosus* "Blue Lagoon"	x																	
"Starlight" aster	*Aster dumosus* "Starlight"	x																	
Heath aster	*Aster ericoides*	x	x	x	x	x			x					x			x	x	
"Blue Star" heath aster	*Aster ericoides* "Blue Star"	x																	
Smooth blue aster	*Aster laevis*	x	x	x	x	x		x	x	x	x			x		x	x	x	
"Blue Bird" smooth blue aster	*Aster laevis* "Blue Bird"	x																	
Side-flowering aster	*Aster lateriflorus*	x				x	x	x						x					
"Lady in Black" woodland aster	*Aster lateriflorus* "Lady in Black"	x																	
New England aster	*Aster novae-angliae*	x			x	x	x	x	x	x	x			x		x	x	x	
"Alma Potschke" aster	*Aster novae-angliae* "Alma Potschke"	x																	
"Hella Lacy" aster	*Aster novae-angliae* "Hella Lacey"	x																	
"Honeysong Pink" aster	*Aster novae-angliae* "Honeysong Pink"	x																	

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"Purple Dome" aster	*Aster novae-angliae* "Purple Dome"	x																	
"Septemberrubin" aster	*Aster novae-angliae* "Septemberrubin"	x																	
"Treasure" aster	*Aster novae-angliae* "Treasure"	x																	
Crooked aster	*Aster prenanthoides*	x				x	x							x					
White aster	*Aster ptarmicoides*	x	x											x			x	x	
Shining aster	*Aster puniceus*	x									x			x					
Arrowleaf aster	*Aster sagittifolius*	x				x	x	x						x					
Silky aster	*Aster sericeus*	x	x											x			x		
Short's aster	*Aster shortii*	x				x	x							x					
Panicled aster	*Aster simplex*	x						x		x	x			x				x	
Flat-top aster	*Aster umbellatus*	x								x	x			x	x				
"Fanal" astilbe	*Astilbe x arendsii* "Fanal"	x (or use *Galium odoratum* as native alternative)																	
"Snowdrift" astilbe	*Astilbe x arendsii* "Snowdrift"	x (or use *Galium odoratum* as native alternative)																	
"White Gloria" astilbe	*Astilbe x arendsii* "White Gloria"	x (or use *Galium odoratum* as native alternative)																	
Dwarf Chinese astilbe	*Astilbe chinensis* "Pumila"	x (or use *Galium odoratum* as native alternative)																	1,3
"Visions" astilbe	*Astilbe chinensis* "Visions"	x (or use *Galium odoratum* as native alternative)																	
"Peach Blossom" astilbe	*Astilbe x japonica* "Peach Blossom"	x (or use *Galium odoratum* as native alternative)																	
"Hennie Graafland" astilbe	*Astilbe x simplicifolia* "Hennie Graafland"	x (or use *Galium odoratum* as native alternative)																	
Canada milkvetch	*Astragalus canadensis*	x	x	x					x					x		x	x	x	
Wild white indigo	*Baptisia leucantha*	x	x	x	x	x				x				x		x	x		
Nodding bur marigold	*Bidens cernua*							x	x	x	x	x		x				x	
Tall swamp marigold	*Bidens coronata*								x	x	x	x		x				x	
Common beggar's-tick	*Bidens frondosa*								x	x	x			x	x			x	
Tall beggar's-tick	*Bidens vulgata*								x	x	x			x	x			x	
False wood nettle	*Boehmeria cylindrica*	x					x	x			x			x					
False aster	*Boltonia latisquama*							x			x	x		x			x	x	
Marsh marigold	*Caltha palustris*							x			x	x		x				x	
Tall bellflower	*Campanula americana*	x				x	x							x			x		
Wild hyacinth	*Camassia scilloides*	x								x	x			x					
Partridge pea	*Cassia fasciculata*	x	x	x	x			x	x					x		x	x	x	
Wild senna	*Cassia hebecarpa*	x						x		x				x					
Blue cohosh	*Caulophyllum thalictroides*	x					x	x						x					
Coontail	*Ceratophyllum demersum*											x	x	x				x	
Turtlehead	*Chelone glabra*										x			x					
Ox-eye daisy	*Chrysanthemum leucanthemum*	x		x	x	x													
Shasta daisy	*Chrysanthemum maximum*	x																	
Black snakeroot	*Cimifuga racemosa*	x					x								x				1
"Atropururea" bugbane	*Cimifuga racemosa* "Atropurpurea"	x																	
"Brunette" bugbane	*Cimifuga racemosa* "Brunette"	x																	
"Hillside Black Beauty" bugbane	*Cimifuga racemosa* "Hillside Black Beauty"	x																	

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Spring beauty	*Claytonia virginiana*	x				x	x							x					
Sand coreopsis	*Coreopsis lanceolata*	x	x	x	x	x				x				x		x	x	x	
Prairie coreopsis	*Coreopsis palmata*	x	x		x	x		x		x				x			x	x	
Tall coreopsis	*Coreopsis tripteris*	x	x	x	x	x		x		x	x			x			x		
Large flowered threadleaf coreopsis	*Coreopsis verticillata "Grandiflora"*	x															x		
"Moonbeam" threadleaf coreopsis	*Coreopsis verticillata* "Moonbeam"	x															x		2
"Zagreb" threadleaf coreopsis	*Coreopsis verticillata* "Zagreb"	x															x		
Yellow corydalis	*Corydalis flavula/lutea*	x					x	x						x					
Toothwsort	*Dentaria laciniata*	x					x							x					1
Illinois bundleflower	*Desmanthus illinoensis*	x	x	x	x	x			x					x			x	x	
Illinois tick trefoil	*Desmodium canadense*	x			x	x								x		x	x		
Squirrel corn	*Dicentra canadensis*	x					x							x				x	
Dutchman's breeches	*Dicentra cucullaria*	x				x	x							x					1
Shooting star	*Dodecatheon meadia*	x		x		x	x							x			x		
Pale purple coneflower	*Echinacea pallida*	x	x	x	x	x			x	x				x		x	x	x	
Purple coneflower	*Echinacea purpurea*	x	x	x	x	x	x			x				x		x	x	x	
"Bravado" purple coneflower	*Echinacea purpurea* "Bravado"	x																	
"Bright Star" purple coneflower	*Echinacea purpurea* "Bright Star"	x																	
Baby white swan purple coneflower	*Echinacea purpurea* "Cygnet White"	x																	
"Kim's Knee High" purple coneflower	*Echinacea purpurea* "Kim's Knee High"	x																	
"Kim's Mop Head" purple coneflower	*Echinacea purpurea* "Kim's Mop Head"	x																	
"Leuchstern" purple coneflower	*Echinacea purpurea* "Leuchtstern"	x																	
"Magnus" purple coneflower	*Echinacea purpurea* "Magnus"	x															x		
White flowered coneflower	*Echinacea purpurea* "White Swan"	x															x		
Common waterweed	*Elodea canadensis*											x	x	x	x				
Cinnamon willow herb	*Epilobium coloratum*									x	x	x		x				x	
Fireweed	*Erechtites hieracifolia*							x		x	x			x				x	
Rattlesnake master	*Eryngium yuccifolium*	x	x	x	x				x	x	x			x		x	x	x	
Yellow trout lily	*Erythonium americanum*	x				x	x							x					
Hollow Joe Pye weed	*Eupatorium fistulosum*	x												x					
"Bartered Bride" Joe Pye weed	*Eupatorium fistulosum* "Bartered Bride"	x												x					
"Selection" Joe Pye weed	*Eupatorium fistulosum* "Selection"	x												x					
Spotted Joe Pye weed	*Eupatorium maculatum*	x						x		x	x	x		x			x	x	
"Atropurpureum" spotted Joe Pye weed	*Eupatorium maculatum* "Atropurpureum"	x																	
"Gateway" spotted Joe Pye weed	*Eupatorium maculatum* "Gateway"	x															x		
Common boneset	*Eupatorium perfoliatum*	x				x	x	x		x	x			x			x	x	
Purple Joe Pye weed	*Eupatorium purpureum*	x				x	x	x						x					
White snakeroot	*Eupatorium rugosum*	x				x	x	x						x					
"Chocolate" snakeroot	*Eupatorium rugosum* "Chocolate"	x																	
Flowering spurge	*Euphorbia corollata*	x	x	x	x									x			x		

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Purple leaf winter creeper	*Euonymus fortunei* "Coloratus"	x															x		3
Queen of the prairie	*Filipendula rubra*									x	x			x					
"Venusta" Queen of the prairie	*Filipendula rubra* "Venusta"	x																	
Alpine strawberry	*Fragaria vesca*	x					x							x		x			
Virginia strawberry	*Fragaria virginiana*	x					x												1
Sweet woodruff	*Galium odoratum*	x						x						x					1
Common gaura	*Gaura biennis*	x				x		x						x		x	x		
Bottle gentian	*Gentiana andrewsii*	x			x	x				x	x			x					
Wild geranium	*Geranium maculatum*	x				x	x							x					1
"Chatto" wild geranium	*Geranium maculatum* "Chatto"	x																	
Prairie smoke	*Geum triflorum*	x	x														x		
Double wild sunflower	*Helianthus decapetalus*	x					x							x					
Woodland sunflower	*Helianthus divaricatus*	x				x	x												
Sawtooth sunflower	*Helianthus grosseserratus*									x	x				x			x	
Western sunflower	*Helianthus occidentalis*	x	x		x	x								x			x		
Woodland sunflower	*Helianthus strumosus*	x				x	x							x					
Common sneezeweed	*Helenium autumnale*	x				x		x	x	x	x			x				x	
Oxeye sunflower	*Heliopsis helianthoides*	x			x	x	x		x	x	x			x		x	x	x	
"Summer Sun" false sunflower	*Heliopsis helianthoides* "Summer Sun"	x														x	x		
"Venus" false sunflower	*Heliopsis helianthoides* "Venus"	x																	
Sharp-lobed hepatica	*Hepatica acutiloba*	x												x					
Round-lobed hepatica	*Hepatica americana*	x												x					
"Ruby Veil" coral bells	*Heuchera americana* "Ruby Veil"	x																	
"Purple Palace" coral bells	*Heuchera micrantha* "Palace Purple"	x															x		
Prairie alum root	*Heuchera richardsonii*	x	x	x	x	x								x			x		
Swamp rose mallow	*Hibiscus palustris*											x		x					
"August Moon" hosta	*Hosta* "August Moon"	x (or use *Galium odoratum*, ferns, bluebells, and Solomon's seal as native alternatives)																	1,3
"Francee" hosta	*Hosta* "Francee"	x (or use *Galium odoratum*, ferns, bluebells, and Solomon's seal as native alternatives)																	
"Halcyon" hosta	*Hosta* "Halcyon"	x (or use *Galium odoratum*, ferns, bluebells, and Solomon's seal as native alternatives)																	
"Royal Standard" hosta	*Hosta* "Royal Standard"	x (or use *Galium odoratum*, ferns, bluebells, and Solomon's seal as native alternatives)																	
"Elegans" siebold plaintain lily	*Hosta sieboldiana* "Elegans"	x (or use *Galium odoratum*, ferns, bluebells, and Solomon's seal as native alternatives)																	
Virginia waterleaf	*Hydrophyllum virginianum*	x				x	x							x					1
Spotted St. John's wart	*Hypericum punctatum*	x				x								x					
Spotted touch-me-not	*Impatiens capensis*							x			x			x					1
Yellow flag iris	*Iris pseudacorus*	x							x										
Blue flag	*Iris virginica shrevei*	x						x	x	x	x	x		x				x	
American twinleaf	*Jeffersonia diphylla*	x												x					
Duckweed	*Lemna* spp.											x	x	x				x	
Round-headed bush clover	*Lespedeza capitata*	x	x	x	x	x		x		x				x		x		x	
Rough blazing star	*Liatris aspera*	x	x	x	x		x		x					x			x	x	

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Prairie blazing star	*Liatris pycnostachya*	x		x	x				x	x	x			x			x	x	
Gayfeather	*Liatris spicata*	x		x	x	x			x	x	x			x			x		
"Floristan Violet" liatris	*Liatris spicata* "Floristan Violet"	x																	
"Floristan White" liatris	*Liatris spicata* "Floristan White"	x																	
"Kobold" liatris	*Liatris spicata* "Kobold"	x							x										
Michigan lily	*Lilium michiganese*	x				x	x			x				x					
Wood lily	*Lilium philadelphicum*	x				x	x							x			x		
Fog fruit	*Lippia lanceolata*										x	x		x			x		
Hoary puccoon	*Lithospermum canescens*	x	x	x										x			x		
Cardinal flower	*Lobelia cardinalis*	x				x		x	x	x	x			x			x		
Great blue lobelia	*Lobelia siphilitica*	x				x	x	x	x	x	x			x				x	
Pale spiked lobelia	*Lobelia spicata*	x									x			x			x		
Marsh purselane	*Ludwigia palustris*								x		x	x		x			x	x	
Water horehound	*Lycopus americanus*									x	x	x		x				x	
Fringed loosestrife	*Lysimachia ciliata*									x	x			x					
"Purpurea" fringed loosestrife	*Lysimachia ciliata* "Purpurea"	x																	
Narrow-leaved loosestrife	*Lysimachia quadriflora*										x			x					
Wild mint	*Mentha arvensis*	x							x	x	x			x				x	
Virginia bluebells	*Mertensia virginica*	x				x	x		x					x					
Monkey flower	*Mimulus ringens*	x						x			x	x		x				x	
Wild bergamot	*Monarda fistulosa*	x	x	x	x	x	x	x	x	x	x			x		x	x	x	
"Blue Wonder" Persian nepeta	*Nepeta mussinii* "Blue Wonder"	x																	
Yellow pond lily	*Nuphar advena*											x	x	x					
Fagrant water lily	*Nymphaea odorata*												x	x					
White water lily	*Nymphaea tuberosa*											x	x	x					
"Fireworks" four angled sundrop	*Oenothera fruitcosa* "Fyrverkeri"	x																	
Sundrop	*Oenothera fruitcosa glauca*	x		x	x									x					
"Siskiyou" evening primrose	*Oenothera speciosa* "Siskiyou"	x																	
Hairy sweet cicely	*Osmorrhiza claytonia*	x				x	x							x					
Pachysandra	*Pachysandra terminalis*	x (or use *Galium odoratum* as native alternative)																	
"Green Carpet" pachysandra	*Pachysandra termanilis* "Green Carpet"	x (or use *Galium odoratum* as native alternative)																	1,3
"Green Sheen" pachysandra	*Pachysandra termanilis* "Green Sheen"	x (or use *Galium odoratum* as native alternative)																	
Wild quinine	*Parthenium integrifolium*	x	x	x	x					x	x			x		x	x	x	
Wood betony	*Pedicularis canadensis*	x			x	x								x					
Arrow arum	*Peltandra virginica*								x			x	x	x	x			x	
Foxglove penstemon	*Penstemon digitalis*	x		x	x	x	x	x	x	x				x		x		x	
"Elfinpink" beard tongue	*Penstemon* "Elfinpink"	x																	
"Husker Red" beard tongue	*Penstemon digitalis* "Husker Red"	x																	
Ditch stonecrop	*Penthorum sedoides*							x			x	x		x			x	x	
White prairie clover	*Petalostemum candidum*	x	x	x	x	x								x		x	x		

Recommended Plants for Lake Calumet Landscaping

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Species are listed alphabetically by their scientific name.		O	DP	LMP	TMP	SA	WD	RI	RD	WMP	WP	SE	DE		Salt	Clay	Drought	Stormwater Facility Conditions	
Purple prairie clover	*Petalostemum purpureum*	x	x	x	x				x	x				x		x		x	
Sweet William phlox	*Phlox divaricata*	x				x	x							x					
"Chattahoochee" woodland phlox	*Phlox divaricata* "Chattahoochee"	x																	
"Clouds of Perfume" woodland phlox	*Phlox divaricata* "Clouds of Perfume"	x																	
"Fuller's White" woodland phlox	*Phlox divaricata* "Fuller's White"	x																	
Wild Sweet William	*Phlox divaricata* ssp. *laphamii*	x																	
"White Perfume" woodland phlox	*Phlox divaricata* "White Perfume"	x																	
Smooth phlox	*Phlox glaberrima*	x				x	x							x					
"Natascha" garden phlox	*Phlox maculata* "Natascha"	x																	
"Rosalinde" garden phlox	*Phlox maculata* "Rosalinde"	x																	
Prairie phlox	*Phlox pilosa*	x												x					
Obedient plant	*Physostegia virginiana*	x				x		x		x	x			x				x	
"Alba" false dragonhead	*Physostegia virginiana* "Alba"	x																	
"Bouquet" false dragonhead	*Physostegia virginiana* "Bouquet"	x																	
"Miss Manners" obedient plant	*Physostegia virginiana* "Miss Manners"	x																	
"Rosea" obedient plant	*Physostegia virginiana* "Rosea"	x																	
"Summer Snow" false dragonhead	*Physostegia virginiana* "Summer Snow"	x																	
"Vivid" false dragonhead	*Physostegia virginiana* "Vivid"	x																	
May apple	*Podophyllum peltatum*	x					x							x					
Jacobs ladder	*Polemonium reptans*	x				x	x	x						x					1
"Blue Pearl" Jacobs ladder	*Polemonium reptans* "Blue Pearl"	x																	1
Great Solomon's seal	*Polygonatum comalicalatum*	x				x	x							x					
Water smartweed	*Polygonum amphibium*									x	x	x		x				x	
Water pepper	*Polygonum hydropiper*								x	x	x			x				x	
Marsh smartweed	*Polygonum hydropiperoides*									x	x			x					
Heartsease	*Polygonum lapathifolium*							x		x	x			x				x	
Pickerelweed	*Pontederia cordata*											x	x	x	x			x	
Common pondweed	*Potamogeton natans*												x	x					
American pondweed	*Potamogeton nodosus*												x	x				x	
Sago pondweed	*Potamogeton pectinatus*								x				x	x	x			x	
Prairie cinquefoil	*Potentilla arguta*	x	x	x	x									x			x	x	
Common cinquefoil	*Potentilla simplex*	x		x	x									x			x		
Mountain mint	*Pycnanthemum virginianum*	x			x	x	x	x		x	x			x			x	x	
Yellow water crowfoot	*Ranunculus flabellaris*											x	x	x					
White water crowfoot	*Ranunculus longirostris*												x	x				x	
Swamp buttercup	*Ranunculus septentrionalis*										x	x		x					
Long-headed coneflower	*Ratibida columnifera*	x		x	x	x											x		
Gray headed coneflower	*Ratibida pinnata*	x	x	x	x	x	x	x	x	x	x			x		x	x	x	
"Goldstrum" orange coneflower	*Rudbeckia fulgida* "Goldstrum"	x															x		
Black-eyed Susan	*Rudbeckia hirta*	x	x	x	x	x	x	x	x	x	x			x		x	x	x	

Recommended Plants for Lake Calumet Landscaping

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Common Name	Scientific Name	Community												NATIVE Spp.	Plant Tolerances				Notes
Species are listed alphabetically by their scientific name.		O	DP	LMP	TMP	SA	WD	RI	RD	WMP	WP	SE	DE		Salt	Clay	Drought	Stormwater Facility Conditions	
Wild goldenglow	*Rudbeckia laciniata*	x				x	x	x		x	x			x				x	
Sweet black-eyed Susan	*Rudbeckia subtomentosa*	x			x	x	x	x		x				x		x	x		
Brown-eyed Susan	*Rudbeckia triloba*	x				x	x	x						x					
"Flore-Pleno" Black-eyed Susan	*Rudbeckia triloba* "Flore-Pleno"	x																	
Wild petunia	*Ruellia humilis*	x	x	x	x									x			x		
Swamp dock	*Rumex verticillatus*	x									x			x					
Common arrowhead	*Sagittaria latifolia*								x			x	x	x				x	
Deep water arrowhead	*Sagittaria rigida*								x			x	x	x	x	x			
Bloodroot	*Sanguinaria canadensis*	x					x							x					1
Lizard's tail	*Saururus cernuus*											x		x					
Late figwort	*Scrophularia marilandica*	x					x	x						x					
Autumn joy sedum	*Sedum purpureum* "Autumn Joy"	x (or use *Sedum ternatum* as native alternative)															x		3
"Ruby Glow" sedum	*Sedum spectabile* "Ruby Glow"	x (or use *Sedum ternatum* as native alternative)															x		
Scarlet sedum	*Sedum spurium* "Dragon's Blood"	x (or use *Sedum ternatum* as native alternative)															x		
Stonecrop	*Sedum ternatum*	x												x					
"Larinem Park" stonecrop	*Sedum ternatum* "Larinem Park"	x																	
Golden ragwort	*Senecio aureus*	x						x			x			x					
Round-leaved ragwort	*Senecio obovatus*	x						x						x					
Mad-dog skullcap	*Scutellaria lateriflorus*	x						x			x			x					
Royal catchfly	*Silene regia*	x			x									x					
Rosinweed	*Silphium integrifolium*	x			x	x	x			x				x			x	x	
Compass plant	*Silphium laciniatum*	x		x	x	x				x	x			x		x	x		
Cupplant	*Silphium perfoliatum*	x				x	x	x		x	x			x			x	x	
Prairie dock	*Silphium terebinthinaceum*	x		x	x	x				x	x			x		x	x	x	
Common blue-eyed grass	*Sisyrinchium albidum*	x		x	x	x				x				x					
False Solomon's seal	*Smilacina racemosa*	x				x	x							x					1
Broad-leaved goldenrod	*Solidago flexicaulis*	x						x						x					
Lake goldenrod	*Solidago gigantea*	x							x	x	x			x			x	x	
Narrowleaf goldenrod	*Solidago graminifolia*	x						x	x	x	x			x	x		x		
Old-field goldenrod	*Solidago nemoralis*	x	x	x	x	x	x	x						x			x	x	
Ohio goldenrod	*Solidago ohiensis*	x									x			x					
Riddell's goldenrod	*Solidago riddellii*	x								x	x			x			x		
Stiff goldenrod	*Solidago rigida*	x	x	x	x	x	x	x	x	x				x	x		x	x	
"Fireworks" goldenrod	*Solidago rugosa* "Fireworks"	x																	
Showy goldenrod	*Solidago speciosa*	x	x	x	x	x								x			x	x	
Elm-leaved goldenrod	*Solidago ulmifolia*	x				x	x							x					
Marsh hedge nettle	*Stachys tenuifolia*						x			x	x			x					
Celadine poppy	*Stylophorum diphyllum*	x					x							x					
Germander	*Teucrium canadense*	x				x	x	x	x					x					
Purple meadow rue	*Thalictrum dasycarpum*	x								x				x					

Recommended Plants for Lake Calumet Landscaping

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Early meadow rue	*Thalictrum dioicum*	x					x	x		x				x					
Foamflower	*Tiarella cordifolia*	x					x							x					1
"Eco Red Heart" foamflower	*Tiarella cordifolia* "Eco Red Heart"	x																	
"Eco Running Tapestry" foamflower	*Tiarella cordifolia* "Eco Running Tapestry"	x																	
"Rosalie" foamflower	*Tiarella cordifolia* "Rosalie"	x																	
"Winterglow" foamflower	*Tiarella cordifolia* "Winterglow"	x																	
Ohio spiderwort	*Tradescantia ohiensis*	x	x	x	x	x	x	x	x	x				x			x	x	
Tred trillium	*Trillium erectum*	x					x							x					
Trillium	*Trillium grandiflorum*	x				x	x							x					
Prairie trillium	*Trillium recurvatum*	x					x							x					
Wake robin	*Trillium sessile*	x					x							x					
Horse gentian	*Triosteum aurantiacum*	x				x	x							x					
Bellwort	*Uvularia grandiflora*	x				x	x							x					1
Wild celery	*Vallisneria americana*												x	x	x			x	
Blue vervain	*Verbena hastata*							x	x	x	x			x			x	x	
Hoary vervain	*Verbena stricta*	x	x	x	x	x	x	x	x					x			x	x	
White vervain	*Verbena urticifolia*	x				x	x	x						x					
Tall ironweed	*Vernonia altissima*	x	x	x	x			x		x	x			x			x		
Common ironweed	*Vernonia fasciculata*	x				x		x		x	x			x			x	x	
Culver's root	*Veronicastrum virginicum*	x			x	x	x			x	x			x		x	x	x	
"Apollo" Culver's root	*Veronicastrum virginicum* "Apollo"	x																	
"White Jolanda" Culver's root	*Veronicastrum virginicum* "White Jolanda"	x																	
Prairie violet	*Viola pedatifida*	x	x											x			x		
Myrtle	*Vinca minor*	x (or use *Galium odoratum* as native alternative)																	3
"Bowles" myrtle	*Vinca minor* "Bowlesii"	x (or use *Galium odoratum* as native alternative)																	
Heart-leaf Alexanders	*Zizia aptera*	x	x	x	x	x								x			x		
Golden Alexanders	*Zizia aurea*	x		x	x	x	x	x		x	x			x		x		x	
FERNS AND FERN ALLIES																			
Maidenhair fern	*Adiantum pedatum*	x					x							x					1
Lady fern	*Athyrium filix-femina*	x					x							x					1
Tatting fern	*Athyrium felix-femina* "Frizelliae"	x																	
Bulblet fern	*Cystopteris bulbifera*	x					x							x					
Robust male fern	*Dryopteris filix-mas* 'Undulata Robusta'	x																	
Goldie's fern	*Dryopteris goldiana*	x					x							x					1
Leatherwood fern	*Dryopteris marginalis*	x					x							x					1
Toothed wood fern	*Dryopteris spinulosa*	x					x							x					1
Ostrich fern	*Matteuccia pensylvanica/struthiopteris*	x					x	x											
Sensitive fern	*Onoclea sensibilis*	x					x	x			x	x		x			x		
Cinnamon fern	*Osmunda cinnamomea*	x					x	x			x			x			x		

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Interrupted fern	*Osmunda claytonia*	x												x					
Royal fern	*Osmunda regalis*	x						x			x	x		x					5
Christmas fern	*Polystichum acrostichoides*	x					x							x					

* "Other" includes entrances, building foundations, and parking lot areas.

Note: This list is not intended to indicate all potential species within any given plant community, nor is this list intended to imply an indicated plant is appropriate under all conditions.

1 = Plants suitable for groundcover in shady areas.

2 = Limited use only, as color accent.

3 = Limited use only, to represent no more than five percent of diversity.

4 = Limited use, in massings only.

5 = Sensitive to higher pH levels.

planet1\ecology\99 projects\9841-01 Lake Calumet\draft report\Tables\Plant Mixes\3-03-02

Appendix B
Representative Native Alternatives

Typical Landscape Plant	Native Alternatives
Species are listed alphabetically by their scientific name.	
Acer tataricum ssp. *ginnala* (Amur maple)	*Amelanchier* spp. (Serviceberry) *Cornus alternifolia* (Pagoda dogwood) *Hamamelis virginiana* (Witch hazel)
Astilbe spp. (Astilbe)	*Galium odoratum* (Sweet woodruff) *Carex* spp. (Sedges)
Berberis thunbergii (Japanese barberry)	*Ceanothus americanus* (New Jersey tea) *Diervilla lonicera* (Bush honeysuckle) *Ilex verticillata* (Winterberry)
Calamagrostis acutifolia "Karl Foester" (Feather reed grass)	*Andropogon scoparius* (Little bluestem) *Koeleria cristata* (Prairie Junegrass) *Panicum virgatum* (Switchgrass) *Calamagrostis canadensis* (Canada bluejoint)
Celastrus orbiculatus (Oriental bittersweet)	*Celastrus scandens* (American bittersweet)
Cotoneaster spp. (Cotoneaster)	*Aronia arbutifolia* (Red chokeberry) *Cornus stolonifera* (Red-osier dogwood) *Ilex verticillata* (Winterberry holly) *Lindera benzoin* (Spicebush) *Sambucus canadensis* (Elderberry) *Viburnum dentatum* (Arrowwood)
Euonymus alatus (Winged eunoymus)	*Aronia arbutifolia* (Red chokeberry) *Aronia melanocarpa* (Black chokeberry) *Euonymus atropurpureus* (Eastern wahoo) *Rhus copallina* (Winged sumac)
Euonymus alatus "Compacta"	*Rhus aromatica* *Rhus aromatica* "Gro Low" (Dwarf fragrant sumac)
Gypsophila paniculata (Baby's breath)	*Euphorbia corollata* (Flowering spurge)
Helix spp. (Ivy)	Ferns *Galium odoratum* (Sweet woodruff) *Mertensia virginica* (Virginia bluebells) *Polygonatum conaliculatum* (Great Solomon's seal) *Stylophyllum diphyllum* (Celadine poppy)
Hemerocallis spp. (Day lily)	*Lilium michiganense* (Michigan lily) *Lilium philadelphicum* (Wood lily) *Rhus aromatica* "Gro Low" (Dwarf fragrant sumac)
Hosta spp. (Hosta)	*Ferns* *Galium odoratum* (Sweet woodruff) *Mertensia virginica* (Virginia bluebells) *Polygonatum canaliculatum* (Great Solomon's seal) *Stylophorum diphyllum* (Celadine poppy)
Lavandula angustifolia (Lavender)	*Asclepias incarnata* (Swamp milkweed) *Epilobium angustifolium* (Fireweed) *Eupatorium purpureum* (Sweet Joe-Pye weed) *Filipendula rubra* (Queen-of-the-Prairie) *Liatris pycnostachya, spicata* (Blazing star)

Appendix B Representative Native Alternatives	
Typical Landscape Plant	**Native Alternatives**
Species are listed alphabetically by their scientific name.	
Perovskia atriplcifolia "Filigran" ("Filigran" Russian sage)	*Asclepias incarnata* (Swamp milkweed) *Epilobium angustifolium* (Fireweed) *Eupatorium purpureum* (Sweet Joe-Pye weed) *Filipendula rubra* (Queen-of-the-Prairie) *Liatris pycnostachya, spicata* (Blazing star)
Malus spp. (Flowering crab)	*Amelanchier* spp. (Serviceberry) *Cornus mas* (Dogwood) *Crataegus* spp. (Hawthorn)
Miscanthus spp. (Silver grass)	*Koeleria cristata* (Prairie Junegrass) *Panicum virgatum* (Switchgrass) *Sorghastrum nutans* (Indiangrass)
Nepeta mussinii "Blue Wonder" ("Blue Wonder" Persian nepeta) *Perovskia atripliafolial* "Filigran" ("Filigran" Russian sage)	*Phlox carolina* (Carolina phlox) *Phlox paniculata* (Garden phlox)
Pachysandra (Pachysandra)	*Galium odoratum* (Sweet woodruff)
Salvia spp. (Sage)	*Asclepias incarnata* (Swamp milkweed) *Epilobium angustifolium* (Fireweed) *Eupatorium purpureum* (Sweet Joe-Pye weed) *Filipendula rubra* (Queen-of-the-Prairie) *Liatris pycnostachya, spicata* (Blazing star)
Sedum purpureum, spectabile (Sedums)	*Sedum ternatum* (Stonecrop)
Syringia spp. (Lilac)	*Amelanchier* spp. (Serviceberry) *Cornus mas* (Dogwood) *Crataegus* spp. (Hawthorn)
Viburnum dilitatum (Linden viburnum)	*Aronia arbutifolia (*Red chokeberry) *Ilex verticillata* (Winterberry) *Viburnum acerifolium* (Maple-leaf viburnum) *Viburnum trilobum* (Highbush cranberry)
Vinca spp.	*Asarum canadense* (Wild ginger) *Galium odoratum* (Sweet woodruff)

Appendix C
Source List for Native Plant Materials

Appendix C
Information Sources for Native Landscaping

American Society of Landscape Architects
Illinois Chapter - 1N141 County Farm Road
Winfield, Illinois 61090
(630) 752-0197

Calumet Environmental Resource Center
(773) 995-2964
www.csu.edu/cerc

Chicago Botanic Garden
1000 Lake Cook Road
P. O. Box 400
Glencoe, Illinois 60022-0400

Chicagoland Environmental Network
Brookfield Zoo
3300 Golf Road
Brookfield, Illinois 60513
(708) 485-0263, ext. 396

EPA Fact Sheets
March 1998:
Natural Landscaping, Illinois Resources
Natural Landscaping for Corporations, Developers, Businesses, Schools, and Public Agencies
March 1999:
Landscaping with Native Plants
October 1999:
Natural Landscaping Resource List
(www.epa.gov/glnpo/ecopage/springfieldtwp/index.html)
(www.epa.gov/glnpo/greenacres/nativeplants)

Friends of Wolf Lake
(773) 646-6373

Grand Calumet Task Force
(219) 473-4246
www.grandcal.org

Great Lakes Information Network
www.great-lakes.net

Illinois Department of Natural Resources
Silver Springs State Park
13608 Fox Road
Yorkville, Illinois 60560
(630) 553-1372
www.dnr.state.il.us/flora/prairie/appen2.htm

Illinois Native Plant Society
Forest Glen Preserve
20301 E. 900 North Road
Westville, Illinois 61883
(217) 662-2142

Landscaping with Native Plants
www.epa.gov/greenacres/native plants
800-621-8431 (for IL, IN, MI, MN, OH, WI)

The Morton Arboretum Library
Illinois Route 53
Lisle, Illinois 60532
(630) 719-2427

Appendix C
Information Sources for Native Landscaping

The Nature Conservancy
Illinois Field Office
8 South Michigan Ave., Ste. 900
Chicago, Illinois 60603
(312) 346-8166

National Park Service
(312) 353-1613
www.nps.gov/rtca

National Wildlife Federation
(703) 790-4434
www.nwf.org/education
Backyard Wildlife Habitat Program

Northeastern Illinois Planning Commission (NIPC)
Natural Resources Department
222 S. Riverside Plaza, Ste. 1800
Chicago, Illinois 60606
(312) 454-0400
Natural Landscaping for Public Officals: A Source Book
(www.epa.gov/glnpo/greenacres/toolkit)
Poster illustrating benefits of natural landscaping
Annotated slide show

Prairie Nursery
www.prairienursery.com

Sierra Club, Illinois Chapter
(312) 251-1680
www.sierraclub.org/il

U.S. Army Corps of Engineers
Permit Evaluation Section Chief
Regulatory Branch
111 N. Canal Street
Chicago, Illinois 60606
(312) 353-6400, ext. 4028

U. S. Environmental Protection Agency
Region 5
77 W. Jackson Blvd.
Chicago, Illinois 60604
(800) 621-8431 (for IL, IN, MI, MN, OH, WI)

USDA: Natural Resources Conservation Service and Kane-DuPage Soil & Water Conservation District
St. Charles Field Office
545 Randall Road
St. Charles, Illinois 60174
(630) 584-7961

*Disclaimer: This list is not exhaustive and additional companies providing these services can be obtained from the information sources listed on these pages and local business directories. This sheet is provided for informational purposes only. No endorsement or recommendation is intended. It is provided as an aid to those seeking initial guidance on native landscaping.

Appendix D
Sample List of Vendors

Appendix D
Represenative Source List for Native Material Suppliers for the Chicagoland Region

Company/Address/Phone*
Country Road Greenhouses, Inc. 19561 East Twombly Rochelle, Illinois 61068-9697 (815) 384-3311 Fax: (815) 384-5015 www.prairieplugs.com
Genesis Nursery 23200 Hurd Road Tampico, Illinois 61283 (815) 438-2220 Fax: (815) 438-2222
JFNew Native Plant Nursery 128 Sunset Drive Walkerton, Indiana 46574 (574) 586-2412 Fax: (574) 586-2718 www.jfnewnursery.com
J&J Tranzplant Aquatic Nursery, LLC P. O. Box 227 Wild Rose, Wisconsin 54984-0227 For Orders: 1-800-622-5055 (715) 256-0059 Fax: (715) 256-0039 www.tranzplant.com
LaFayette Home Nursery R.R. #1 Box A LaFayette, Illinois 61449 (309) 995-3311 Fax: (309) 995-3909
Murn Environmental Inc. 2707 E. Philhower Rd. Beloit, Wisconsin 53511 (608) 362-6449 Fax: (608) 362-6455 www.murn.com
Possibility Place Nursery 7548 W. Monee-Manhattan Road Monee, Illinois 60449 (708) 534-3988 Fax: (708) 534-6272 www.possibilityplace.com
Prairie Ridge Nursery RR2 9738 Overland Road Mt. Horeb, Wisconsin 53572-2832 (608) 437-5245
Prairie Nursery P. O. Box 306 Westfield, Wisconsin 53964 800-476-2741 Fax: (608) 296-2741 www.prairienursery.com

Appendix D
Represenative Source List for Native Material Suppliers for the Chicagoland Region

Company/Address/Phone*
Spence Restoration Nursery P. O. Box 546 2220 E. Fuson Road Muncie, Indiana 47308 (765) 286-7154 Fax: (765) 286-0264
Taylor Creek Restoration Nurseries 17921 Smith Road Brodhead, Wisconsin 53520 (608) 897-8641 Fax: (608) 897-8486
The Natural Garden 38W443 Highway 64 St. Charles, Illinois 60175 (630) 584-0150 x224 Fax: (630) 584-0185

*Disclaimer: This list is not exhaustive and additional companies providing these services can be obtained from the information sources listed on these pages and local business directories. These sheets are provided for informational purposes only. No endorsement or recommendation is intended. It is provided as an aid to those seeking initial guidance on native landscaping.

Appendix E
Overview of Best Management Practices

Planning Resources

Table 1
Lake Calumet Design Guidelines

Infiltration Practices			
	Bioretention	**Infiltration Trench**	**Infiltration Basin**
Space Required	Moderate Min. surface area = 50-200 SF Min. width = 5-10' Min. length = 10-20' Min depth = 2-4'	Min surface area = 8-20 SF Min. width = 2-4' Min. length = 4-8' Depth = 3-10' depending on soil type	Depth = 3'
Site Requirements	Greater than 2' to seasonal high water table Slope #6% 2-4' clearance above bedrock	2' min. to seasonal high water table 2-4' clearance above seasonal high water table or bedrock Slope #6% Useful only on 3-5 acre sites	Sufficient depth to rock and water table Side slopes 3:1 or flatter Slope #6%, close to 0% as possible Less than 2' to seasonal high water table
Size of Drainage Area	#5 ac (can be larger in some instances) ; best if 1-2 ac for individual cells	0-10 ac (pref. <5 ac) or where ponds cannot be applied	2-50 ac
Percent Draining Impervious Area	5%	--	--
Soils	Made soil: mixes include sand, loamy sand, and sandy loam Permeable w/ infiltration rates >0.27"/hr. Limitations overcome w/ underdrains Clay content #10%	Deep permeable soils (best w/ sand, loamy sand, sandy loam, and loam) Infiltration rates >0.27 - 0.52"/hr (1"/hr best for cold climates) Clay content <30% and silt/clay content <40%	Deep permeable soils (best w/ sand, loamy sand, sandy loam, and loam) Clay content <30% and silt/clay content <40% Infiltration rate >0.5"/hr (3"/hr best for cold climates); 1.5-2"/hr for facilities draining over 10 ac
Head Required for Gravity Operation	5-7'	1'	3'
Slows runoff	Infiltration rate Less than 0.5"/hr w/o underdrain Infiltration rate #0.5"/hr w/ underdrain	Peak discharge control for 2 yr and 5 yr storms can be provided with careful design Peak discharge control for 100 yr storm seldom or never provided	Peak discharge control for 2 yr and 5 yr storms can be provided with careful design Peak discharge control for 100 yr storm seldom or never provided
Detention	Yes	Empties within 3 days	Dewater w/i 48-72 hr
Retention	High; Shallow depressions	Moderate	—
Conveyance	Yes, serves as pretreatment	Overflow system leading to a stabilized channel or watercourse w/ measures to provide non-erosive flow conditions	—

Infiltration Practices			
	Bioretention	**Infiltration Trench**	**Infiltration Basin**
Water Quality	High Filters and absorbs runoff	High	High
Pollutant Removal	TSS = none Sediments = N/A Phosphorous = 81% Nitrogen = 43% Zinc/Lead = 99% BOD = low Oil & grease = N/A Bacteria = N/A	TSS = 80-100% (75%) Sediments = 100% Phosphorous/Nitrogen = 40-60% Zinc/Lead = 80-100% (65%) Trace metals = 95% BOD = 60-80% COD = 65% Oil & grease = high Bacteria = 60-80%	TSS = 75-80% Sediments = 99% Phosphorous = 65% Nitrogen = 60% Zinc/Lead = 65% Trace metals = 95-99% BOD = very high COD = 65% Oil & grease = high Bacteria = very high
Maintenance	Low Routine landscape management, may require erosion control and provision of overflow	Moderate to high Periodic monitoring: quarterly first yr., annual thereafter Must provide observation well w/ 4" PVC on footplate, constructed flush w/ground surface, cap and lock	High Rapid clogging even with regular maintenance
Longevity		Low; high failure rates w/in first 5 yrs	Low; high failure rates w/in first 5 yrs
Setbacks	1' min. down-gradient from buildings & foundations 100' min. from water supply well 50' min. from onsite wastewater system	10' min. down-gradient from buildings 100' min. up-gradient from buildings 20' min. from road subgrade	10' min. down-gradient from buildings 20' min. from road subgrade
Constrained By		Slope, high water table, shallow bedrock, proximity to foundations, maximum depth limitations, & high sediment input	Slope, high water table, shallow bedrock, proximity to foundations, maximum depth limitations, & high sediment input
Recommended Landscaping			
Cold Climate	Incorporate mulch into soil to mitigate lower fertility due to salt-based de-icers Discourage infiltration of chlorides by using diversion structures Incorporate features to minimize risk of frost heave Use under drain to increase cold weather soil infiltration (8" min. under drain encased in gravel)		
Advantages	Grass buffer strips or vegetated swales are commonly used as pretreatment Enhances aesthetics	Ground water recharge Serve small drainage areas Fit into medians, perimeters, unused areas of a developed site	Ground water recharge Useful for snow storage Serve large developments Can replicate predevelopment

Infiltration Practices			
	Bioretention	**Infiltration Trench**	**Infiltration Basin**
		Helps replicate predevelopment hydrology Increases dry weather base flow and reduces bankfull flooding frequency	hydrology more closely than other BMP options High removal of particulate pollutants Moderate removal for soluble pollutants Provides greater habitat value than other infiltration systems
Disadvantages	Not applicable where impervious surfaces comprise >95%	Useful only on 3-5 ac sites Do not direct road or parking lot runoff to this practice if groundwater contamination is concern Grass filter clogging Restricted by depth to bedrock and seasonal high water table Restricted use for hotspots Requires significant maintenance	Risk of groundwater contamination; chlorides not removed Restricted use for hotspots Restricted by depth to bedrock and seasonal high water table Fairly high failure rate Rapid clogging even with regular maintenance
Estimated Cost	Varies with application	Cost effective on smaller sites High rehabilitation costs	Moderate construction costs; High rehabilitation costs

Planning Resources

Table 2
Lake Calumet Design Guidelines

Basins				
	Wet Pond	**Extended Detention Wet Pond**	**Extended Detention Dry Basin**	**Stormwater Wetland**
Space Required	Moderate to large Side slopes 3:1 or flatter 4 ac of drainage area for each ac-ft storage	Moderate to large Side slopes 3:1 or flatter	Moderate to large Side slopes 3:1 or flatter	Moderate to large (approx. 1% drainage area) Side slopes 5:1 to 12:1 preferred, min. of 3:1 Effective length:width ratio 5:1 preferred, no less than 3:1
Site Requirements	Deep soils Min. 2' to seasonal high water table if hotspot or aquifer Can intersect ground water except if receiving hotspot runoff Overall site slope #15%, but relatively flat local slope	Deep soils Less than 2' to seasonal high water table if hotspot or aquifer Can intersect ground water except if receiving hotspot runoff Overall site slope #15%, but relatively flat local slope	Deep soils Overall site slope #15%, but relatively flat local slope ∃2' to seasonal high water table if hotspot or aquifer	Poorly drained soils Min. 2' to seasonal high water table if hotspot or aquifer Can intersect ground water except if receiving hotspot runoff Space may be limiting Site slope <15%, with relatively flat local slope
Size of Drainage Area	Generally min. 10 ac and <1sq.mi., <10 ac if sufficient groundwater available	Generally 10 ac to 95 ac, <10 ac if sufficient groundwater available	Typically ∃10 ac	Widely applicable, larger drainage areas Depends on design: Shallow marsh: Min. 25 ac Pond/wetland: Min.25 ac ED Wetland: Min.10 ac Pocket Wetland: 1-10 ac
Space (Percent Draining Impervious Area)	N/a	<3%	<3%	3-5%
Head Required for Gravity Operation	5-8'	4-10'	3-8'	Pocket: 2-3' Other: 3-8'
Soils	Most soils acceptable, needs well-drained soils, not suitable for hydrological soil groups "A" and "B"	Not suitable for hydrological soil groups "A" and "B"	All soils except sand, silty clay and clay	All soils except sand and loamy sand; loams and silt loams best for plant establishment Certain soils may require a liner

Basins				
	Wet Pond	Extended Detention Wet Pond	Extended Detention Dry Basin	Stormwater Wetland
Slows runoff	Peak flow control for 2 yr and 10 yr storms Peak flow control for 100 y. storm can be provided for with careful design	Peak flow control Low release rates downstream	Peak flow control Excellent downstream channel erosion protection Debris and litter remain onsite	Peak flow control
Detention	—	—	24 hr detention after storms	—
Retention	Permanent pools	Permanent pools	—	Permanent pools
Conveyance	—	—	—	—
Water Quality	Water quality enhancement can be provided though appropriate design	Water quality enhancement can be provided though appropriate design	Low to Moderate	
Pollutant Removal	TSS = high (60-80%) Sediments = 85-90% Phosphorous = 45-50% Nitrogen = 35-40% Lead = high (75%) Zinc = moderate (60%) Metals = 29% BOD = moderate COD = 40% Oil & grease = high Bacteria = high (70%)	TSS = #80% Sediments = #90%; Phosphorous = 65-70% Nitrogen = 65% Lead = 40% Zinc = 20% Trace metals = 50-90% depending on sediment-bonding BOD = N/A COD = N/A Oil & grease = N/A; Bacteria = N/A	TSS = high (45-80%) Sediments = N/A Phosphorous = 20-25% Nitrogen = 20-40% Lead = moderate-high (20%) Zinc = moderate (20%) Metals = 30% BOD = moderate COD = moderate (20%) Oil & grease = low Bacteria = high (60-80%)	TSS = very high (65-80%) Sediments = 90% Phosphorous = high (25-70%) Nitrogen = moderate (20%) Lead = 65% Zinc = 35% Trace metals (sediment-bound) = high (50-90%) BOD = moderate (15%) COD = 60% Oil & grease = very high Bacteria = high
Maintenance	Moderate-high Improper care can create eyesore, breed mosquitoes, undesirable odors and become safety hazard	Improper care can create eyesore, breed mosquitoes, undesirable odors and become safety hazard	Moderate-High Regular mowing Improper care can create eyesore, breed mosquitoes, undesirable odors and become safety hazard	Low-moderate Establishment period requiring regular inspection Annual harvesting of vegetation Improper care can create eyesore, breed mosquitoes, undesirable odors and become safety hazard
Longevity	20-50 yrs	High	20-50 yrs	20+ yrs

Basins				
	Wet Pond	Extended Detention Wet Pond	Extended Detention Dry Basin	Stormwater Wetland
Setbacks	50' from septic system leach field 25' from septic system tank 50' from private well 10' from property line	50' from septic system leach field 25' from septic system tank 50' from private well 10' from property line	—	50' from septic system leach field 25' from septic system tank 50' from private well 10' from property line
Constrained By	Proximity to bedrock, space consumption, maximum depth limitations, and thermal impacts	Proximity to bedrock, space consumption, thermal impacts, and high sediment input		Proximity to bedrock, space consumption, maximum depth limitations, and thermal impacts
Recommended Landscaping	Wetland safety shelf, native planting on slope	Wetland safety shelf, native planting on slope		Wetland safety shelf, native planting on slope
Cold Climate	Encourage use of salt-tolerant vegetation			
Advantages	Peak flow control Serve large developments Enhances aesthetics and provides recreational benefits Little ground-water discharge Permanent pools aid in preventing scour and resuspension of sediments Moderate to high removal of both particulate and soluble pollutants	Peak flow control Low release rates downstream Serve large developments Enhances aesthetics and provides recreational benefits Permanent pools aid in preventing scour & resuspension of sediments Promotes settling Better nutrient removal than wet pond	Good retrofitting option for existing basins Peak flow control Possible to provide good particulate removal Can serve large development Doesn't generally release warm or anoxic water downstream Excellent downstream channel erosion protection Debris and litter remain onsite Less land area than wet pond or stormwater wetland	Serve large developments Peak flow control Enhances aesthetics and provides recreational benefits Wetland prevents shoreline erosion Permanent pools aid in preventing scour and resuspension of sediments High pollutant removal capacity

Basins				
	Wet Pond	**Extended Detention Wet Pond**	**Extended Detention Dry Basin**	**Stormwater Wetland**
Disadvantages	Needs considerable space Possible thermal discharge and oxygen depletion adversely impact aquatic life downstream Volume control: ground-water recharge seldom or never provided	Needs considerable space Possible thermal discharge and oxygen depletion adversely impact aquatic life downstream Potential safety hazard w/o maintenance	Requires relatively large land area Low soluble pollutant removal rates Inhibits settling Resuspends pollutants during large storms Higher potential to produce mosquitoes than other permanent pool basins Negligible infiltration and groundwater recharge	Needs considerable space Possible thermal discharge and oxygen depletion adversely impacts aquatic life downstream Potential safety hazard w/o maintenance May contribute to nutrient loadings during die-down periods of vegetation
Estimated Cost	Moderate to high compared to conventional stormwater protection More costly than ED Basin Most cost-effective for larger, more intensively developed sites Not economical for drainage areas <10 acres Est. cost $C=24.5V^{0.705}$	Moderate to high compared to conventional stormwater protection Not economical for drainage areas <10 acres	Low to moderate comparative cost Lowest cost alternative in size range 3-5% of construction cost on annual basis Not economical for drainage areas <10 acres Needs less capital cost compared to wet pond $C=12.4V^{0.760}$	Marginally higher than wet ponds Not economical for drainage areas <10 acres 25% higher cost than stormwater ponds of equivalent volume

V = Volume to control 10-yr storm event (cu.ft.)
C = Construction, design, & permitting costs

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Planning Resources

Table 3
Lake Calumet Design Guidelines

Vegetated Practices		
	Vegetated Filter Strips	**Bioswales***
Space Required	Min. width variable, based on slope: 0-10% = 15-20' 10-20% = 20-50' 20-30% = 25-50' Length of filter strip ∃ area being treated Level spreader or gravel trench required between area to be treated and filter strip	Bottom width = 2' min., 8' max. Top width of swale 15-30' Min. length = 100' Side slopes 3:1 or flatter Flow depth = 3-5" for WQ treatment; 1" below top of vegetation Pretreatment system recommended prior to discharge into swale
Site Requirements	Low density areas with low slopes Min. slope = 1% Much less effective on sites with slope >15%, best if slopes <6% Receives sheet flow from pervious or impervious areas	Low density area with <15% slope overall Wet swale may intersect water table; dry swale bottom At least 2' above seasonal high water table Longitudinal slope = 1-2% min., 6% max.; best if <4% If slope = 4-6%, provide check dams approx. every 50-100'
Size of Drainage Area	Small (<2 ac) Max. contributing area limited by the length of surface area to be treated: 150' for pervious surfaces and 100' for impervious surfaces	Small (5 ac max.)
Space (Percent Draining Impervious Area)	50-100%	Dry swale = 10-20%
Soils	Permeable soils perform better but soils generally not a limitation except for sand, sandy clay, silty clay, and clay Soils should have high or moderate infiltration rates and low erosion potential	Permeable soils perform better hydrologic functions, but soils not a limitation For dry swales, infiltration rates of 0.27- 0.5" / hr Dry swale = made soil: 30" deep and 50% sandy loam and 50% loam Grass swale: 10-20% organic matter, #20% clay
Head required for gravity operation	#1'	Wet swale = 1' Dry swale = 3-5' Grass swale = 0.5-1'

Vegetated Practices		
	Vegetated Filter Strips	**Bioswales***
Slows runoff	Up to 40%	Up to 40%
Detention	—	Yes, if use check dams Max. depth of storage = 1.5' Grass swale = water released over 24-48 hr
Retention	High	High
Conveyance	Acts as pretreatment	Length necessary for 10 minutes residence time for pretreatment
Water Quality	High	High 1.0 fps for WQ treatment - 2.0 fps for 2 yr storm, 4-5 fps for 10 yr storm
Pollutant Removal	TSS = 20-100% (60-65%) Sediments = 60-90% Phosphorous = 0-65% (20-40%) Nitrogen = 0-60% (10-40%) Zinc/Lead = 20-100% (45%/60%) BOD = 0-80%; COD = 25-40% Organic matter = low Oil & grease = moderate Bacteria = low	TSS = 30-65% (60%, 30-90%) Sediments = 60-90% Phosphorous = 10-25% (20%, 0-40%) Nitrogen = 0-15% (10%) Zinc/Lead = 20-50% (70%/60%) Metals = 42% BOD = N/A COD = 25% Organic matter = low Oil & grease = moderate Bacteria = 25%
Maintenance	Low, routine landscaping maintenance	Low to moderate, routine landscaping maintenance Requires periodic repair, re-grading, & sediment removal to prevent channelization
Longevity	Low if poorly maintained	High if maintained (20+ years)
Setbacks	Min. distance = 10' down-gradient from buildings foundations	—
Constrained By	High sediment input, slope, high water table, proximity to bedrock, and proximity to foundations	Slope, high water table (dry swale only), proximity to bedrock, and high sediment input
Recommended Landscaping	Tall, erect vegetation is best for water quality benefits; bluegrass is not a good choice	
Cold Climate	Encourage use of salt-tolerant vegetation	Encourage use of salt-tolerant vegetation

Vegetated Practices		
	Vegetated Filter Strips	**Bioswales***
Advantage	Used as part of runoff conveyance for pretreatment Low maintenance requirements Effective at reducing particulate pollutants in low to moderate velocity runoff areas Excellent urban wildlife habitat Economical Enhances aesthetics	Minimal land area needed Used as runoff conveyance for pretreatment Can provide sufficient runoff control to replace curb and gutter on highway medians Economical Enhances aesthetics
Disadvantage	Cannot solely control runoff Often concentrates water, reducing effectiveness Ability to remove soluble pollutants highly variable Low traffic areas only Performs poorly in areas of high velocity and high flow concentration Requires periodic repair, re-grading, & sediment removal to prevent channelization	Cannot solely control runoff Low pollutant removal rates Leaching from culverts and fertilized lawns may increase presence of trace metals and nutrients Requires periodic repair, re-grading, & sediment removal to prevent channelization
Estimated Cost	Low in comparison to ponds or basins	Low compared to curb and gutter, ponds or basins 0.50/sq.ft.

* Swale Types: Dry Swale, Wet Swale, and Grassed Swale

Planning Resources

Table 4
Lake Calumet Design Guidelines

Techniques for Small Areas				
	Sand filter	**Dry Well**	**Green Roof**	**Underground Tank**
Space Required	Widely applicable for small sites 360 SF/ac of drainage area length:width ratio ∃2:1 Min. depth = 3'	Min. surface area = 8-20 SF Min. width = 2-4' Min. length = 4-8' Min. depth = 3-8'	—	—
Site Requirements	Widely applicable for small sites (#5 ac, where % imperviousness & land use is high) Slope <6% 0.5' above seasonal high water table	Permeable w/infiltration rates > 0.27"/hr ∃2' above seasonal high water table/ bedrock	Substrate and vegetated mats Incline of 15-20%	Slope <15%
Size of Drainage Area	Surface filter #5 ac Underground filter #1-2 ac Perimeter filter #1-2 ac	#1 ac	—	<5 ac
Space (Percent Draining Impervious Area)	Surface filter: 2-3% Underground filter: 0%	N/A	N/A	0%
Soils	Not restrictive	Infiltration of 0.50"/hr w/ max. permeability of 5"/hr <30% clay and <40% silt/clay	Sand base required for infiltration	
Hydraulic Head Required for Gravity Operation	Surface filter: 5' Underground filter: 5-7' Perimeter filter: 3-5'	—	—	5-8'
Slows runoff	Peak discharge control for 2 yr storm can be provided with careful design Peak discharge control for 10 yr and 100 yr storms seldom or never provided	Peak discharge control for 2 yr storm can be provided with careful design Peak discharge control for 10 yr and 100 yr storms seldom or never provided	Peak-velocity reduction for wide range of storm events Reduces peak discharge to other areas of development	

Techniques for Small Areas

	Sand filter	Dry Well	Green Roof	Underground Tank
Detention	Drain #24 hr, some designs up to 40 hr	Empties within 3 days	Vegetation captures and holds Root zone absorption and topsoil storage	
Conveyance	—	Overflow system leading to a stabilized channel or watercourse w/measures providing non-erosive flow conditions must be provided	Flow path through vegetation	
Water Quality	High	High	Water is biofiltered through garden into under drain and discharge point	
Pollutant Removal	TSS = 60-80% Sediments = 75-90% Phosphorous = 30-50% Nitrogen = moderate (35%) Lead = 50-60% Zinc = 30-65% Trace metals (sediment-bound) = very high BOD = 30-50% COD = 40-55% Oil & grease = high (18-52%) Bacteria = moderate	TSS = 80-100% Sediments = N/A Phosphorous = 40-60% Nitrogen = 40-60% Zinc = 80-100% Lead = 80-100% BOD= 60-80% Oil & grease = N/A Bacteria = 60-80%	No pollutant removal, aids in pollution prevention	
Maintenance	Moderate to high Relatively simple and inexpensive, often done manually	Low Observation well w/ 4" PVC or foot place constructed flush w/ground surface, cap with lock Grease oil floatable organic materials and settable solids must be removed before entering well	May be designed not to require fertilizers and pesticides	
Longevity	Low to moderate, 20+ years		Limited to size of roof	

Techniques for Small Areas

	Sand filter	Dry Well	Green Roof	Underground Tank
Setbacks	—	At least 10' down gradient from buildings foundations ∃50' from slopes >15% ∃100' from septic system ∃100' from private well	—	
Advantages	Above ground space not required Effective at removing non-dissolved solids and related pollutants Ground water recharge can occur with careful site design Treat runoff from large buildings, access roads & parking lots Above-ground and below-ground design options Mosquito breeding not a problem	Ground water recharge for "good quality" storm water Used at sites where storm drainage unavailable Can decrease size & cost of downstream BMPs or storm drains	Reduces peak discharge to other areas of development Existing structures can be retrofitted to prevent combined sewer system surcharges Mimics predevelopment conditions Thermal shock reduction caused by flash runoff from hot roof surfaces Significant energy conservation	
Disadvantages	Feasible only for small area Above-ground design may be non-aesthetic Frequent maintenance required Possible odor problems	Not for use w/ infiltrating significantly contaminated runoff High failure rate due to clogging	Inlet clogging may occur; Possible roof leakage Probably not possible to get sufficient storage to street ordinance	High cost
Estimated Cost	Relatively costly to build & install Construction cost higher than Infiltration Trench High, frequent maintenance	N/A	High cost	High cost

Planning Resources

Table 5
Lake Calumet Design Guidelines

Water Quality Inlets		
	Oil/Grit Separators	**Water Quality Inlet: Catch Basin w/Sand Filter**
Space Required	Small, highly impervious areas (<2 ac) 400 cu.ft. storage per contributing ac	Small, highly impervious areas (<2 ac)
Site Requirements	Impervious catchments 4' min. depth	Impervious catchments
Size of Drainage Area	Small (#1 ac) Not good for drainage areas >1 ac	Small (#5 ac, best if <2 ac)
Soils	—	—
Slows runoff	Peak discharge control for 2 yr, 10 yr and 100 yr storms seldom or never provided	Peak discharge control for 2 yr, 10 yr and 100 yr storms seldom or never provided
Water Quality	Little to no pollutant removal capability	—
Pollutant Removal	TSS = low (15%) Sediments = 10-25% Phosphorous = 5% Nitrogen = 5% Plant nutrients = none Lead = 15% Zinc = 5% Trace metals = 10-25% BOD = N/A COD = 5% Organic matter = low Oil & grease = high Bacteria = low	TSS = 80% Sediments = N/A Phosphorous = N/A Nitrogen = 35% Lead = 80% Zinc = 65% Trace metals (sediment-bound) = N/A BOD = N/A COD = 55% Oil & grease = N/A Bacteria = N/A
Maintenance	High/difficult maintenance Biannual cleaning	High maintenance Biannual cleaning
Longevity	20+ years	High (20+ years)
Setbacks	100' from septic system 100' from slopes >20% 100' from private well 400' from surface water supply 100' from surface water tributary supply 100' from drinking water source 20' from building foundation	—
Advantages	Captures coarse-grained sediments & some	High removal effectiveness for

Water Quality Inlets		
	Oil/Grit Separators	Water Quality Inlet: Catch Basin w/Sand Filter
	hydrocarbons Minimal land area needed; above ground space not required Can retrofit existing small drainage areas & applicable to most urban areas Inexpensive & easily installed Some capacity to trap trash, debris, & other floatables	particulates Minimal land area needed Can retrofit existing small drainage areas Higher nutrient removal than catch basins and oil/grit separator
Disadvantage	Not good for drainage areas >1 ac Minimal nutrient and organic matter removal Not useful during intense storms Concern over pollutant toxicity of trapped residuals Ground water recharge seldom or never provided High/difficult maintenance	Not good for drainage areas >5 ac Useful only in stabilized & highly impervious areas Not effective during intense storms Ground water recharge seldom or never provided
Estimated Cost	Inexpensive High compared to sand filters and trenches	