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Stream Buffer Revegetation/Mitigation Guide

The following mitigation standards shall be applied to revegetation of the 50-foot undisturbed stream buffer and the additional 25-foot impervious setback (Combined buffers total 75-feet from wretched vegetation). Revegetated area must be at least as large as the square footage of buffer encroachment. Areas within these buffers must be replanted with native vegetation and installed in the following proportions:

- 25% Large Trees (Only 20% of these may be pine)
- 25% Small Tress
- 25% Shrubs
- 25% Ground Cover/Perennials

Plants in each category have the following square-foot value:

- Large Trees: 200 sq. ft. each
- Small Trees: 100 sq. ft each
- Shrubs: 16 sq. ft. each
- Ground Cover: 4 sq. ft. each

Note: Generally, no more than 25% of the trees and shrubs required may be one species. For example, if coverage requires 12 large trees, at least four species, 3 trees each, must be used. If the area requiring revegetation is less than 800 square feet, then only Small Trees, Shrubs, and Ground Cover/Perennials shall be used.

Plant species used for revegetation should be chosen from the attached list. Species not on the list are subject to the approval of the City Arborist. Examples of possible buffer revegetation plans for different areas are also attached.

Example: A 400 square foot encroachment must be revegetated.

- 400 sq. ft. x 25% = 100 sq. ft. of plants from Small Trees, Shrubs, and Ground Cover categories
- Small Trees = 100 sq. ft. / 100 sq. ft. each = 1 Small Tree required
- Shrubs = 100 sq. ft. / 16 sq. ft. each = 6 Shrubs required
- Ground Cover = 100 sq. ft. / 4 sq. ft. each = 25 Ground Cover plants required

Key		
○ Full Sun (6+ hrs of direct sunlight, including afternoon sun)	■ Partial Sun (morning sun/afternoon shade)	● Shade (full shade from trees, buildings, or north face of slope)
U Upland (dry, well-drained)	M Mesic (moist, well-drained)	W Wet (periodically flooded or standing water)

Stream Buffer Revegetation/Mitigation Standards

LARGE TREES (25%)	
Red Maple ○ ◻ ● U M W	<i>Acer rubrum</i>
River Birch ○ ◻ U M W	<i>Betula nigra</i>
Shagbark Hickory ◻ ● M	<i>Carya ovata</i>
Sugarberry ○ ◻ U M W	<i>Celtis laevigata</i>
Persimmon ○ ◻ U M W	<i>Diospyros virginiana</i>
American Beech ◻ ● M	<i>Fagus grandifolia</i>
White Ash ○ ◻ M	<i>Fraxinus americana</i>
Green Ash ○ U M W	<i>Fraxinus pennsylvanica</i>
Sweetgum ○ ◻ U M	<i>Liquidambar styraciflua</i>
Tulip Poplar ○ M	<i>Liriodendron tulipifera</i>
Southern Magnolia ○ ◻ M W	<i>Magnolia grandiflora</i>
Black Gum ○ ◻ U M	<i>Nyssa sylvatica</i>
Loblolly Pine ○ U M	<i>Pinus taeda</i>
Sycamore ○ ◻ ● U M	<i>Platanus occidentalis</i>
White Oak ○ ◻ ● U M	<i>Quercus alba</i>
Laurel Oak ○ ◻ ● U M W	<i>Quercus laurifolia</i>
Overcup Oak ○ ◻ ● U M W	<i>Quercus lyrata</i>
Water Oak ○ ◻ ● U M W	<i>Quercus nigra</i>
Pin Oak ○ ◻ ● U M W	<i>Quercus palustris</i>
Willow Oak ○ ◻ ● U M W	<i>Quercus phellos</i>
Black Willow ○ W	<i>Salix nigra</i>
Bald Cypress ○ ◻ U M W	<i>Taxodium distichum</i>

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SMALL TREES (25%)	
Florida Maple ○ ◻ ● M W	<i>Acer barbatum</i>
Red Buckeye ○ ◻ ● M	<i>Aesculus pavia</i>
Ironwood ◻ ● M W	<i>Carpinus caroliniana</i>
Redbud ○ ◻ U M	<i>Cercis canadensis</i>
Dogwood ○ ◻ U M	<i>Cornus florida</i>
Native Hawthorne ○ ◻ M	<i>Crataegus spp.</i>
Carolina Silverbell ○ ◻ M W	<i>Halesia carolina</i>
American Holly ○ ◻ M	<i>Ilex opaca</i>
Yaupon Holly ○ ◻ U M W	<i>Ilex vomitoria</i>
Sweetbay ○ ◻ M W	<i>Magnolia virginiana</i>
Hophornbeam ○ ◻ U M	<i>Ostrya virginiana</i>
Sourwood ○ ◻ U M	<i>Oxydendron arboreum</i>

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SHRUBS (25%)	
Buckeye ◻ • M	<i>Aesculus sylvatica</i>
Alder ◦ ◻ W	<i>Alnus serrulata</i>
Red Chokeberry ◦ ◻ U M W	<i>Aronia arbutifolia</i>
Pawpaw ◦ ◻ M	<i>Asimina triloba</i>
Sweetshrub ◦ ◻ • M	<i>Calycanthus floridus</i>
Buttonbush ◦ ◻ W	<i>Cephalanthus occidentalis</i>
Sweet Pepperbush ◦ ◻ M W	<i>Clethra alnifolia</i>
American Strawberry Bush ◦ ◻ • M	<i>Euonymus americanus</i>
Witchhazel ◦ ◻ • M	<i>Hamamelis virginiana</i>
Inkberry ◦ ◻ • M W	<i>Ilex glabra</i>
Oak-leaf Hydrangea ◦ ◻ M	<i>Hydrangea quercifolia</i>
Florida anise ◦ ◻ • M W	<i>Illicium floridanum</i>
Small Anise • M W	<i>Illicium parviflorum</i>
Possumhaw ◦ ◻ M W	<i>Ilex decidua</i>
Winterberry ◦ ◻ M W	<i>Ilex verticillata</i>
Itea, Virginia Sweetspire ◦ ◻ • M W	<i>Itea virginica</i>
Mountain Laurel ◦ ◻ • M	<i>Kalmia latifolia</i>
Dog Hobble ◻ • M	<i>Leucothoe spp.</i>
Southern Crabapple ◦ ◻ U	<i>Malus angustifolia</i>
Wax Myrtle ◦ ◻ U M W	<i>Myrica cerifera</i>
America Devilwood ◦ ◻ • M W	<i>Osmanthus americanus</i>
Chickasaw and Hog Plum ◦ ◻ U	<i>Prunus angustifolia, P. umbellata</i>
Wild Plum ◦ ◻ U M	<i>Prunus americana</i>
Piedmont Azalea, other native ◻ • M	<i>Rhododendron canescens,</i> <i>R. periclymenoides, R. flammeum, etc.</i>
Dwarf Rhododendron ◻ • M	<i>Rhododendron minus</i>
Smooth and Winged Sumac ◦ U	<i>Rhus glabra, R. copallina</i>
Maple-leaf Viburnum ◻ • M	<i>Viburnum acerifolium</i>
Swamphaw Viburnum ◦ ◻ M W	<i>Viburnum nudum, V. cassinoides</i>

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GROUNDCOVERS (25%)	
Ferns	
Sensitive fern ◻ ● M W	<i>Onoclea sensibilis</i>
Cinnamon fern ○ ◻ M W	<i>Osmunda cinnamomea</i>
Royal fern ◻ ● W	<i>Osmunda regalis</i>
Christmas fern ◻ ● U M	<i>Polystichum acrostichoides</i>
Virginia Chain Fern ○ W	<i>Woodwardia virginica</i>
Flowers	
Butterflyweed ○ ◻ U	<i>Asclepias tuberosa</i>
New England Aster ○ ◻ ● M	<i>Hamamelis virginiana</i>
Turtlehead ● M	<i>Chelone lyonii</i>
Lanceleaved Coreopsis ○ U	<i>Coreopsis lanceolata</i>
Bleeding Heart ◻ ● M	<i>Dicentra eximia</i>
Hardy ageratum ○ ◻ U W	<i>Eupatorium coelestinum</i>
Joe-Pye Weed ○ ◻ M	<i>Eupatorium fistulosum</i>
Wild Geranium ◻ ● M	<i>Geranium maculatum</i>
Narrow-leaved sunflower ○ U M	<i>Helianthus angustifolius</i>
Hibiscus ○ W	<i>Hibiscus coccineus, H. moscheutos</i>
Gayfeather ○ ◻ U	<i>Liatris spicata, L. aspera</i>
Cardinal Flower ○ ◻ M W	<i>Lobelia cardinalis</i>
Great Lobelia ○ ◻ M	<i>Lobelia siphilitica</i>
Patridgeberry ◻ ● M	<i>Mitchella repens</i>
Evening Rose ○ U	<i>Oenothera speciosa, O. fruticosa</i>
False Dragonhead, Obedient Plant ○ M	<i>Physotegia virginianus</i>
Solomon's Seal ◻ ● M	<i>Polygonatum biflorum</i>
Goldsturm Black-Eyed Susan ○ ◻ M	<i>Rudbeckia fulgida</i>
Black-Eyed Susan ○ ◻ U	<i>Rudbeckia hirta</i>
False Solomon's Seal ◻ ● M	<i>Smilacina racemosa</i>
Goldenrod ○ U	<i>Solidago spp.</i>
Stoke's Aster ○ ◻ M W	<i>Stokesia laevis</i>
Foamflower ◻ ● M	<i>Tiarella cordifolia</i>
Spiderwort ○ U	<i>Tradescantia virginiana, T. ohioensis</i>
Ironweed ○ M	<i>Vernonia noveboracensis</i>
Yellow-root (woody vine) ◻ ● M W	<i>Woodwardia virginica</i>

Stream Buffer Revegetation/Mitigation Standards

Emergents	(GROUNDCOVERS CONT'D)
Soft Rush, native rushes ○ ■ M W	Juncus effuesus
Blue-flag Iris ○ W	Iris virginica, I. versicolor
Goldenclub ○ W	Orontium aquatica
Pickerelweed ○ W	Pontederia cordata
Arrowhead ○ W	Sagittaria latifolia
Lizardtail ○ W	Saururus cernuus
Cattail ○ W	Typha angustifolia, T. latifolia