E. Replacement of Trees

When protected trees are removed from a development site, a certain percentage of these tree "inches" must be replaced in accordance with Table 11-2 of the LDC, which provides the number and size of replacement trees that must be planted throughout the development site. Tree Mitigation Worksheets and the submittal form have been provided in Appendix A of this manual. The following tables identify replacement trees and plants recommended by the City:

1. Recommended Replacement Canopy/Shade Trees

COMMON NAME	BOTANICAL NAME
Cypress	Taxodium spp.
Elm	Ulmus spp.
Hickory	C.galbra
Magnolia	Magnolia grandiflora
Florida Red Maple	Acer rubrum.
Shumard Oak	Quercus shumardii
Live Oak	Quercus virginiana
Red Bay	Persea borbonia
Red Cedar	Juniperus silicicola
Sweetgum	Liquidambar styraciflua
Sycamore	Platanus occidentalis
Turkey Oak	Quercus laevis
Date Palms*	Phoenix spp.
Sabal Palms* (groups of 3)	Sabal palmetto
River Birch	Betula nigra 'Dura Heat'

* Due to existing site conditions or architectural themes, palms may be substituted for canopy/shade trees but shall comprise no more than fifty (50) percent of the tree requirement. Sabal palms shall be used in groups of three (3).

2. Recommended Replacement Understory Trees

COMMON NAME	BOTANICAL NAME
Palm Trees*	Butia capitata, Livistonia chinensis
Chickasaw Plum	Prunus angustiflolia
Crape Myrtle	Lagerstroemia indica
Holly	Ilex (East Palatka, dahoon, eagleston, Savannah)
Indian Hawthorn (standard)	Raphiolepis indica-'Majestic Beauty'
Japanese Blueberry	Elaeocarpus decipiens
Jerusalem Thorn	Parkinsonia aculeate
Redbud	Cercis Canadensis
Ligustrum	Ligustrum-lucidum, japonica
Loquat	Eriobotyra japonica
Magnolia	Magnolia grandiflora-'Little Gem', 'Mgtig'
Scrub Oak	Quercus geminata
Viburnum (std.)	Viburnum spp.

* One (1) palm is needed to be a minimum of three (3) feet of clear trunk to qualify as an understory tree with no more than fifty (50) percent of the total tree requirement being palms.

3. Recommended Replacement Trees, Shrubs, & Groundcovers

These trees and plants are proven to be hardy and drought resistant, therefore, able to survive without supplemental irrigation after establishment. For more information on plants listed in this section may be found in the Waterwise Florida Landscapes from Florida's water management districts. This list section may be amended from time to time by the Land Use Administrator. *Xeric plants

NATIVE TREES	BOTANICAL NAME	NON-NATIVE CULTIVATED TREE NAME	BOTANICAL NAME
Oak, live	Quercus virginiana	Crape Myrtle	Lagerstroemia indica
Oak, sand live	Quercus geminata	Bottlebrush	Callistemon rigidus
Oak, myrtle	Quercus myrtifolia	Jerusalem Thorn	Parkinsonia aculeata
East Palatka Holly	Ilex X attenuata	Loquat	Eriobotrya japonica
American Holly	Ilex opaca	Drake Elm	Ulmus parvofolia
Dahoon Holly	Ilex cassine		
Yaupon Holly	Ilex vomitoria		
Chicksaw Plum	Prunus angustifolia		
Southern Red Cedar	Juniperus silicicola		
Magnolia	Magnolia grandiflora		
River Birch	Betula nigra		

NATIVE SHRUBS	BOTANICAL NAME	NON-NATIVE CULTIVATED SHRUB	BOTANICAL NAME
Blueberry, shiny	Vaccinium myrsinites	Century plant	Agave americana
American beautyberry	Callicarpa americana	Azalea hybirds	Rhododendron spp.
Florida flame Azalea	Rhododendron austrinum	Camellia, sasanqua	Camellia sasanqua
Fakahatchee grass	Tripsacum dactyloides	Chaste-tree	Vitex agnus-castus
Coontie	Zamia floridana	Eleagnus (Silverthorn)	Elaeagnus pungens
Hydrangea, oakleaf	Hydrangea quercifolia		
Sparkleberry	Vaccinium arboreum	Chinese Juniper	Juniperus chinensis
Sweet shrub	Calycanthus floridus	Viburnums	Viburnum spp.
Fetterbush	Leucothoe racemosa	Indian Hawthorn	Rhaphiolepsis indica
Gallberry	Ilex glabra	Gardenia	Gardenia augusta
Florida Anise	Illicium foridanum	Cornuta Hollies	Ilex cornuta
Prickly Pear Cactus	Opuntia sp.	Pittosporum	Pittosporum tobira
St. John's Wort	Hypericum reductum	Rosemary	Rosmarinus officinalis
Yaupon Holly	Ilex vomitoria	Texas Sage	Leucophyllum frutescens
Yellow Necklace Pod	Sophora tomentosa	Boxthorn	Severinia buxifolia
Wax Myrtle (may not be used as credit for a tree)	Myrica cerifera		
Rusty Lyonia	Lyonia ferruginea	Pineapple Guava	Feijoa sellowiana
Sweetspire	Itea virginica	Plumbago	Plumbago auriculata

NATIVE	BOTANICAL NAME	CULTIVATED	BOTANICAL NAME
Cross Vine	Bignonia carpeolata	Creeping Fig	Ficus pumila
Grape Vine	Vitis spp.	Confederate Jasmine	Trachelospermum jasminoides
Yellow Carolina Jasmine	Gelsemium sempervirens	English Ivy	Hedera helix
Coral Honeysuckle	Lonicera sempervirens		
Morning Glory	Ipomoea spp.		
Viriginia Creeper	Parthenocissus quinquefolia		
Trumpet Vine	Campsis radicans		

NATIVE GROUNDCOVERS	BOTANICAL NAME	NON-NATIVE CULTIVATED NAME	BOTANICAL NAME
Adam's Needle	Yucca filamentosa	Aloe	Aloe barbadensis
Beach Morning Glory	Ipomoea imperati	Cast-iron Plant	Aspidistra elatior
Cinnamon Fern	Osmunda cinnamomea	Algerian Ivy	Hedera canariensis
Muhly Grass	Muhlenbergia capillaris	Creeping Fig	Ficus pumila
Purple Love Grass	Eragrostis spectabilis	Mondo Grass	Ophiopogon japonicus
Sand Cord Grass	Spartina bakeri	Ground Cover Rose	Rosa x 'Red Carpet'
Smooth Cord Grass	Spartina alterniflora	Asiatic Jasmine	Trachelospermum asiaticum
Wire Grass	Aristida beyrichiana	Parsons Juniper	Juniperus chinensis 'Parsonii'
Carolina Jessamine	Gelsemium sempervirens	Shore Juniper	Juniperus conferta
Powderpuff	Mimosa strigillosa	Gold Mound	Lantana camara 'Gold Mound'
Porterweed	Stachytarpheta jamaicensis	Liriope	Liriope spp.
Railroad Vine	Ipomoea pes-caprae	Purple Queen	Tradescantia pallida
Sea Purslane	Sesuvium portulacastrum	Vinca	Vinca spp.
Beach Sunflower	Helianthus debilis	Thyme	Thymus vulgaris
Muhly Grass	Muhlenbergia capillaris	Perennial Peanut	Arachis glabrata

NATIVE PALMS/CYCADS	BOTANICAL NAME	CULTIVATED	BOTANICAL NAME
Sabal Palm	Sabal palmetto	Pindo Palm	Butia capitata
Saw Palmetto	Serenoa repens	Canary Island Date Palm	Phoenix canariensis
Coontie Fern	Zamia floridana	Chinese Fan Palm	Livistona chinensis
		Lady Palm	Rhapis excelsa
		King Sago	Cycas revoluta

4. Salt Tolerant Trees, Shrubs, and Groundcovers. For a listing of these types of plants and trees, go to the University of Florida website (http://edis.ifas.ufl.edu) and do a search for Dr. Black's "Salt Tolerance of Landscape Plants for Florida" publication.

F. Tree Bank Fund

1. Allowable Sites

If the applicant demonstrates to the City that the site cannot accommodate the total number of required replacement trees because of insufficient planting area, the applicant shall provide a monetary contribution to the Tree Bank Fund or may plant the tree(s) off-site. If planting occurs at an off-site location, the following criteria shall be followed:

a. Planting and establishing the required replacement tree(s) at a site within the City and approved by the City as long as the site where the mitigation is required does not fall below the minimum required planting densities.

b. The alternative site must be located in the City. Applicants are encouraged to coordinate with and seek input from the City in selecting alternative sites for tree mitigation. A location in the proximity of the applicant's property is preferred

c. The alternative site must be owned or leased by the applicant, or by a govern mental entity that has authorized the installation of the trees, or is privately owned and the owner has consented to the use of his property as an alternative site; provided, however, that governmental entities providing off-site mitigation may do so only on property owned or leased by a governmental entity.

d. The installation of the trees at the alternative site will provide aesthetic benefits to many of the same citizens which would have benefited from the installation of the landscaping on the applicant’s property.

e. The alternative site is determined by the City to be a location where the trees are likely to survive.

f. If the applicant elects to install the required trees at the alternative site, the applicant shall submit plans for the alternative site for review and approval by the City. Any trees planted at the alternative site pursuant to this Section shall be in addition to, and not in lieu of, the requirements of this Article unless the site is an existing non-conforming site.

2. Tree Bank Fund Payment Amounts

Funds paid to the Tree Bank Fund Account held by the City are used exclusively for the following types of expendatures:

a. Labor to plant, stake and mulch.
b. Cost of tree and materials to stake and mulch.
c. Tree re-location onto public lands.
d. Design and installation of irrigation systems to water the new or relocated trees.
e. Delivery costs of trees
f. Hand watering of trees to establish.

Determination of tree costs (including installation, staking, and mulching) is achieved by an annual cost of survey of tree prices from local landscape contracting firms. At least three firms shall be contacted for quotes and averaged out to determine the final cost equivalants.