



Orange City Development Services Department

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MEMORANDUM

Public Hearing: October 3, 2018 Planning Commission

Report Date: September 25, 2018

Subject: Second discussion on Land Development Code text amendment regarding tree preservation and landscaping requirements.

Applicant: Development Services Department

Staff: Becky Mendez, AICP, Development Services Director

PUPOSE OF DISCUSSION

Trees are a declared beneficial public resource pursuant the City's Tree Protection ordinance (Chapter 11, Land Development Code) and landscaping fosters a strong community image with enhanced property values (Chapter 10, Land Development Code).

BACKGROUND

On May 22, 2018, the City Council discussed the current tree protection and landscaping requirements and directed staff to schedule this item with the Planning Commission for review and recommendation. A summary of the City's existing Land Development Code follows:

Existing single-family residences are exempt from tree protection requirements, which means that homeowners can remove any tree on their lot without a tree removal permit, regardless of size. All other property must comply with the city's tree protection ordinance. Tree removal permits cost \$20, plus \$3 for every tree removed.

The Code defines a "tree" as any self-supporting woody plant of a species that measures no less than six inches diameter at breast height (DBH). The Code also provides a list of "specimen trees", which requires replacement stock if removed.

Generally, the City's tree protection standards include:

- Minimum 15% of lot area must be designated for the protection of trees
- Minimum of 6" DBH per 2,500 square feet of lot area required
- Removal of specimen trees requires replacement at three inches for every six inches of specimen tree removed (Example: If an 18" DBH Live Oak is removed, the applicant is required to provide an additional 9 inches of trees or pay \$599 into Tree Bank.)

The City's landscape requirements apply to new commercial or multifamily projects only (does not apply to residential subdivisions):

- 5' width in side and rear yards, unless next to residential than 15 feet width
- 20' width along a thoroughfare, 10' width along all other roads
- Front buffers must have one 4" DBH Live Oak every 40 feet, four 2"DBH understory trees per 100 feet, and 15% of the landscape buffer area must have shrubs.
- Side and rear buffers must have "one tree" planted every 50 feet and 15% area for shrubs

The Code does not specify the minimum DBH size of new trees (other than for *front* landscape buffers), only that they are eight feet in height at planting. This is an anomaly in our Code and should be corrected. The Code does not require perimeter landscape buffers in residential subdivisions. The Planning Commission has voiced concern regarding this issue in the past.

On July 11, 2018, the Planning Commission generally discussed the City's LDC requirements and compared them to other west Volusia cities. Specific questions/comments included:

- 1. Convert minimum tree planting requirements from Diameter at Breast Height (DBH) to caliper inches.** In most cases, DBH, which is the diameter of the trunk measured 4.5 feet from the ground, is used when identifying mature/existing trees. Caliper, which is the diameter of the trunk measured 12 inches from the ground, is used when purchasing/planting new trees. This is an industry standard, and staff made the text change as suggested.
- 2. Is the Tree Bank Formula used to calculate the fees owed for removal of trees up-to-date, because it seems low?** No, the costs used in the existing LDC formula are from at least the 2004 LDC rewrite, and may be a carry-over from the Code of Ordinances as far back as 1991. At that time (either 2004 or 1991) a 2.5 caliper inch tree cost \$133 to plant. According to the Central Florida Community Tree Guide from the United States Department of Agriculture, General Technical Report dated September 2010, that same tree costs \$230, which includes planting, staking, mulching and irrigating. This cost aligns with Volusia County's replacement cost formula, which is \$48 per cross sectional square inch of each tree to be removed, or \$236.64. Staff amended the Tree Bank Formula calculation based on current industry replacement costs.
- 3. Can the tree removal requirements apply to existing single family residential lots?** The City Attorney's office has informed staff that the City can apply the tree protection ordinance standards to existing single family residences. Staff recommends a modification to the exemption, in that the residence must be "owner-occupied", and the tree protection requirements will apply to any new building permit application.
- 4. Perimeter landscape buffers should apply to new residential subdivisions.** Staff included this requirement as suggested.
- 5. Define historic tree and require City Council approval to remove.** Staff included this requirement as suggested.
- 6. Define minimum tree replacement size at a minimum of 2.5 inch caliper.** Staff included this requirement as suggested for canopy trees, and provided a 1.5 caliper

inch minimum for understory trees.

7. **Is there a “benefit” program that the City could create to encourage existing homeowners to keep their historic trees?** That was a really great question, but unfortunately, staff could not find any viable solution. A few jurisdictions do allow reduced setbacks for the preservation of trees, but this approach is not applicable in our case.
8. **Require Class 1 plant materials.** Section 10.5.5, LDC requires that all plant material shall meet or exceed standards for Florida No. 1, as determined by the state department of agriculture and consumer services. No text amendment was necessary.

The Planning Commission also reviewed a table of local jurisdiction standards. Staff amended the table presented at the July meeting to include existing and proposed Orange City standards. It is presented below.

Jurisdiction	Historic Tree	Requires Council Approval	Tree Pres Area	Min # of trees	Specimen Tree Prot.	Replacement Stock	Min tree size	Buffer widths
Volusia County	36" Live Oak or Bald Cypress	Yes	15%	1 per 2,500 sq ft	3/acre=80% 3-5/acre=65% 3.1-8/acre=50% 8+ = 4 per acre	15% of DBH" of every tree removed	1 ½ caliper, 6' tall	10' side/rear, unless adj res=30' 20' front
DeBary	30" Live Oak	Yes	15%	1 per 2,500 sq ft	Same as Volusia County	15% cross sectional area of every tree	2.5" caliper, 10' tall	30' side/rear if adj to res. 10' front
Deltona	36" Live Oak or Bald Cypress	Yes	15%	1 per 2,500 sq ft	Same as Volusia County	1/10 cross sectional area of every tree removed	1 ½ DBH, 6' tall	5' side/rear, 20' btwn com/res (generally) 25' thoroughfares 15' front all other 5' perimeter for subs
DeLand	20" Bald Cypress, 25" Live Oak or Cedar	Yes	15%	1 per 2,500 sq ft	<3/acre=100% 3-5/acre=3 per acre >5-8/acre= 4 per acre >8= 50%	1/3 DBH" of every tree removed	Couldn't located	35'-20', best that we can determine
EXISTING Orange City	None	NA	15%	6" DBH per 2,500 sq ft	None	50% of specimen trees removed	4"DBH, 15' tall in front yard	5' side/rear, if adj to res=15'. 20' front thoroughfare 10' front local road
PROPOSED Orange City	36" live oak or bald cypress	Yes	Same	Same	Less 3/acre= 80% 3-8/acre= 50% +8/acre- 4 per acre	15% DBH of all trees, plus 50% specimen	2.5" caliper, 14' tall	10' side/rear, if adj to res=20' 20' front along all ROW

COMPREHENSIVE PLAN CONSISTENCY

The following goal, objectives and policies apply to the discussion:

Future Land Use Element

Policy 2.2.7

Require the necessary setbacks and buffers for residential development adjacent to future collector and arterial roadways, as required by the LCD so as to minimize traffic impacts.

Policy 4.1.5

Residential developments shall be consistent with the LDC for the design, maintenance, permitting, landscaping, densities and access requirements.

The landscaping requirements of Chapter 10, LDC do not apply to residential subdivisions. This omission from the LDC appears to conflict with the comprehensive plan policy. Staff recommends that the Planning Commission consider applying the landscape buffer requirements to new residential subdivisions.

Policy 4.1.6

The City shall protect residential neighborhoods from encroachment by incompatible land uses. The type of protection may include landscape buffers, land use buffers or...

Policy 5.1.4

Commercial development shall use landscape buffers, visual screens and setbacks, as required in the LDC when adjacent to residential uses.

Goal 7

Promote the retention of open space in the urban environment and the conservation of significant natural resources.

Conservation Element

Policy 1.1.2

The City shall continue to enforce its LDC tree protection regulations to maintain natural vegetation filters for air pollution.

Policy 1.1.3

The City's LDC shall require landscaping for new development to use native species plant materials that are adapted to the area's soil and water.

The LDC requires the planting of “drought tolerate” vegetation, but does not require native species.

Policy 3.1.1

The City shall continue to seek and support activities directed at preservation of significant historical resources, including public and/or private acquisition.

Goal 4

Promote energy conservation and encourage renewable energy resources and greenhouse gas reductions.

STAFF RECCOMENDATION

Provide input for City Council consideration.

ATTACHMENTS

Proposed text amendment

Section 10.5. - Landscaping.

All multifamily, residential subdivisions that create five or more lots, and nonresidential developments and any exterior multifamily or nonresidential reconstruction shall comply with the following landscape standards unless exempted in accordance with section 10.7 of this chapter.

10.5.1. *Landscaped buffers.* A landscaped buffer shall be established along the entire length of, and contiguous to, any property line, and located within a common area. Buffers along side and rear property lines shall be not less than five-ten feet in width measured at a right angle to the side or rear property line except that when a multifamily or nonresidential zoning district abuts a single-family residential zoning district the buffer width shall be 15-20 feet. Buffers shall be 20 feet in width measured at a right angle to the front property line along arterial and collector street rights-of-way and ten feet in width measured at a right angle to the front property line along all other street rights-of-way. All buffers shall be landscaped and provide visual screening as follows.

- A. The front yard buffer shall be landscaped with live oak trees of a minimum four inch diameter at breast height (DBH) 2.5 inch caliper, and 15-14 feet in height at planting and located along a line that is midway within the buffer. The trees shall be planted every 40 feet. A minimum of four understory trees, of a minimum two inch DBH 1.5 inch caliper and a minimum eight feet in height, per 100 linear feet of street frontage or fraction thereof shall be planted in and about access points and intersections. In addition, a minimum of 15 percent of said buffer area shall be covered with shrubs or groundcover. The trees shall be placed in the groundcover beds where possible. In addition to the shrubs or groundcover requirement, the planting of flowering perennials and/or shrubs within said buffer is required.
- B. If an off-street parking or other vehicular use area abuts the front yard buffer, said area shall not only be landscaped as required by section 10.5.1.A. but also be screened as follows.
 1. A continuous shrub hedge shall be planted within the buffer. The shrub hedge plant materials shall be planted on 24 inch centers, shall be at least 2.5 feet in height at time of planting and obtain a height of three feet within 12 months of planting under normal growing conditions so as to screen a minimum of 75 percent of said parking or vehicular use area to that height, as viewed from the right-of-way.
 2. If a berm is used for screening, said berm shall be at least two feet in height and additional landscaping at least one foot in height shall be planted on top of the berm.
 3. If a decorative wall is used for screening, said wall shall not exceed four feet in height. Shrubs shall be planted abutting the exterior side of the wall facing the street at a planting interval of no greater than five feet. Said shrubs may be planted in groupings on the exterior side of the wall facing the street.
- C. Side and rear yard buffers shall be landscaped with at least one tree trees of a minimum 2.5 inch caliper, and 14 feet in height at planting, -planted for each 50 linear feet or fraction thereof of said buffer. In addition, a minimum of 15 percent of said buffer area shall be covered with shrubs or groundcover. The trees shall be placed in the groundcover beds where possible.
- D. If an off-street parking area or other vehicular use area abuts a side or rear yard buffer and said area is not entirely screened visually from abutting property, said buffer shall contain a hedge, decorative wall or fence not less than four feet in height, and no greater than six feet in height. The visual screen shall be continuous between the off-street parking area or other vehicular use area and the abutting property. If plant materials are used for screening, said materials shall be capable of obtaining a four-foot height in 12 months from the time said materials were planted. An existing continuous structural visual screen on the abutting property shall be considered adequate visual screening for this requirement.

- E. When a side or rear yard buffer abuts or is across the street from any residential zoning district in the city and/or county said buffer shall be planted and screened in the following manner.
 - 1. One tree with a minimum 2.5 inch caliper, and 14 feet in height at planting, shall be planted for each 50 linear feet or fraction thereof of said buffer. In addition, a minimum of 15 percent of said buffer area shall be covered with shrubs or groundcover. The trees shall be placed in the groundcover beds where possible.
 - 2. A visual screen consisting of plant materials, or a decorative wall or fence shall be installed. If plant material is used for screening, said materials shall be selected and located to provide, within two years, a visual barrier that is six feet above the average ground level of the buffer. If a decorative wall or fence is used for screening, said wall or fence shall not exceed four feet in height along the front property line and eight feet in height on side and rear property lines. Shrubs or vines shall be planted abutting the exterior side of the wall facing the adjoining property at a planting interval no greater than five feet.
 - F. Existing vegetation shall be used where possible to meet these requirements. Where plant materials will be planted to meet these requirements, drought tolerant plant materials shall be used in order to minimize water usage for irrigation.
 - G. Landscaping shall be maintained in excellent condition at all times and shall be replaced in the event of disease or death of plant materials. The enforcement official shall notify the property owner which plant material are diseased or dead and then the property owner shall replace said plant material within 30 days of notification.
 - H. Landscape materials shall be pruned only to promote healthy, uniform, natural growth of the vegetation. Trees shall not be pruned severely in order to permanently maintain growth at a reduced height or spread. The owner shall replace severely pruned trees.
- 10.5.2. *Landscaped parking/vehicular use areas.* Landscaped areas shall be provided within the interior of the parking/vehicular use areas to break up continuous parking spaces, reduce surface heat and provide an aesthetically pleasing interior environment. Such landscaping shall cover a minimum of ten percent of the total off-street parking and vehicular use area. If the ten percent requirement cannot be met, architectural planters may be permitted in lieu of landscaped areas. Side and rear yard buffers and five feet of the front yard buffers as required by section 10.5.1. shall not be used as a credit towards meeting the landscape requirements for parking/vehicular use areas. All landscaped areas shall be protected from vehicular damage by a raised concrete curb of at least six inches in height. Interior parking/vehicular use areas that access to a designated corridor shall be designed using the landscaping combinations and criteria of section 10.5.2.A., B. and C. (Preferred combinations are A, B and C or A and C. However, combination B and C or C individually, may be approved through the site plan review and approval process where it is determined that individual site or land usage characteristics necessitate use of such techniques.)
- A. *Landscape strips/divider medians.* Landscaped strips should be used to separate rows of abutting parking. Where landscaped strips are used, such strips shall be a minimum width of six feet. Such strips shall be planted with drought tolerant shrubs, ground cover and/or grass and shall contain a minimum of two canopy trees and two understory trees for every 100 feet of length. The canopy trees shall be a minimum of ~~four inch DBH~~2.5 inch caliper and 14 feet in height at time of planting. The understory trees shall be a minimum of ~~three inch DBH~~1.5 inch caliper and ~~ten-eight~~ feet in height at time of planting. When shrubs are planted, the ground area surrounding the shrubs shall be planted with drought tolerant groundcover plants and mulched.
 - B. *Interior islands.* Interior islands should be used to break up uninterrupted parking spaces. A maximum of ten continuous parking spaces shall be permitted without a landscaped island. Interior islands shall be a minimum of 200 square feet without a landscaped strip for single parking spaces and 400 square feet without a landscaped strip, for double parking

rows. Where interior islands are combined with landscaped strips, the aforementioned square footage requirement shall be in addition to the area required for the landscaped strip interior islands. Islands must be planted with grass and/or shrubs and contain a minimum of one canopy tree, ~~four-inch DBH~~2.5 inch caliper and 14 feet in height for every 200 square feet of area or a minimum of two understory trees of a minimum ~~three-~~1.5 inch DBH-caliper and ~~ten-eight~~ feet in height for every 200 square feet of area. When shrubs are planted, the ground area surrounding the shrubs shall be mulched or planted with drought tolerant groundcover plants and mulched. Each island shall be depicted on the site plan with exact square footage measurement.

- C. *Terminal islands.* Terminal islands should be used to terminate parking bays and to separate parking from adjacent drive aisles. Terminal islands shall be located at the end of each drive aisle and parking bay. A maximum of ten continuous parking spaces shall be permitted between the interior islands and the terminal island. Each terminal island shall be a minimum of 200 square feet without a landscaped strip, for single parking spaces, and 400 square feet without a landscaped strip, for double parking rows. Where terminal islands are combined with landscaped strips, the aforementioned square footage requirement shall be in addition to the area required for the landscaped strip. Terminal islands shall be planted with grass and/or shrubs and contain a minimum of one canopy tree, ~~four-~~2.5 inch DBH-caliper and 14 feet in height at time of planting for every 200 square feet of area or a minimum of two understory trees of a minimum of ~~three-~~1.5 inch DBH-caliper and ~~ten-eight~~ feet in height at time of planting for every 200 square feet of area. When shrubs are planted, the ground area surrounding the shrubs shall be mulched or planted with drought tolerant groundcover plants and mulched. Shrubs shall be required to provide a minimum of 35 percent coverage of terminal islands and not to exceed 30 inches in height. Each island shall be depicted on the site plan with exact square footage measurement.

10.5.3. *Perimeter building landscaping.* Landscaping around the perimeter of buildings enhances site aesthetics, increases green space and increases oxygen output. All projects shall incorporate perimeter landscaping into the project design in accordance with the requirements listed below (see Illustration No. 8).

- A. Perimeter landscape plant materials shall be located adjacent to the primary facade and along any blank facade wall areas that are, or will be, exposed to the general public. Said plant materials shall also be included at entrance areas, plazas and courtyards.
- B. Perimeter landscape plant materials shall consist of a combination of trees, palms, shrubs and ground covers that are drought tolerant. Perimeter planting beds shall be a minimum of five feet wide to provide the space necessary for plant growth. Landscape plant material type, size and spacing shall, at a minimum, be consistent with the requirements of this code. Tree diameter inches provided for perimeter landscaping purposes shall be counted toward the tree diameter inch requirements for any project.
- C. Architectural planters may be permitted by the DSD in fulfillment of pervious area requirements. Such architectural planters shall contain a surface area of not less than ten square feet and shall have a minimum dimension of 15 inches.

10.5.4. *Installation of landscaping.* All landscaping shall be installed according to accepted commercial planting procedures as prescribed by the American Society of Landscape Architects. Soil, free of limerock, pebbles, or other construction debris, shall be provided. All landscaped areas shall be protected from vehicular encroachment by wheel stops or curbing. Curbing may be perforated to permit drainage from the paved surface areas onto landscape areas.

10.5.5. *Plant materials.* All plant material shall meet or exceed standards for Florida No. 1, as determined by the state department of agriculture and consumer services. Specified plant material sizes, heights and spreads shall be considered minimum planting requirements. Special consideration should be given to combining solid-colored plant materials with variegated

colored materials to add color and visual interest to the landscape. Plant materials that are known to be intolerant of paving environments or the physical characteristics of which may be injurious to the public shall not be permitted.

- A. All trees shall have a minimum height of eight feet immediately upon planting and have trunks that can be maintained in a clean condition for over six feet of clear wood measured from the ground level. A minimum radius of 2.5 feet of landscaped area must be provided between the trunk of the tree and the edge of the landscaped area. Tree species having a root system that is likely to cause damage to public roadways or other public improvements shall not be planted nearer than 12 feet to such improvements. If palms are used, said trees shall not exceed 50 percent of the required number of diameter inches.
- B. Ground covers, other than grass, shall be planted in such a manner as to present a finished appearance and reasonably complete coverage. Grass shall be planted with a species normally grown as permanent lawns in Central Florida. Grass areas shall be sodded. Synthetic or artificial material in the form of trees, shrubs, ground covers or vines shall not be used in lieu of plant requirements.

10.5.6. *Plant material maintenance.* The owner, or his agent, if any, shall be jointly and severally responsible for the maintenance of all landscaping in good condition so as to present a neat, healthy and orderly appearance, free of refuse and debris. Any dead or severely damaged plant materials, including trees, shall be replaced by the owner, tenant or agent as part of routine maintenance.

10.5.7. *Recommended plant list.* Appendix A is the recommended plant list for use in meeting the landscaping requirements of this code. ~~With the exception of Live Oaks required within the front yard landscaped buffer as referenced in 10.5.1 A., and the requirements related to the types of street trees listed in chapter 11, section 11.14.1., the~~The developer/property owner may use any of the list of recommended plant material to meet landscape requirements of this code.

APPENDIX A
RECOMMENDED PLANT LIST

CANOPY TREES

Common Name	Scientific Name	Mature Height (feet)	Drought Tolerance	Florida Native
American Elm	Ulmus americana	80—100	**	Yes
Bald Cypress	Taxodium distichum	80—100	**	Yes
Laurel Oak	Quercus laurifolia	80	***	Yes
Live Oak	Quercus virginiana	60	***	Yes
Red Bay	Persea borbonia	50—60	**	Yes
Red Maple	Acer rubrum	60	**	Yes

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River Birch	<i>Betula nigra</i>	50—60	** (if planted in moist area)	Yes
Shumard Oak	<i>Quercus shumardii</i>	80	**	Yes
Slash Pine	<i>Pinus elliottii</i>	100	***	Yes
Southern Magnolia	<i>Magnolia grandiflora</i>	80	***	Yes
Southern Red Cedar	<i>Juniperus virginiana</i>	50—60	***	Yes
Sweet Bay Magnolia	<i>Magnolia virginiana</i>	90	**	Yes
Sweetgum	<i>Liquidambar styraciflua</i>	80	**	Yes
Sycamore	<i>Platanus occidentalis</i>	100	***	No
Turkey Oak	<i>Quercus laevis</i>	40—50	***	Yes

UNDER STORY TREES

Common Name	Scientific Name	Mature Height (feet)	Drought Tolerance	Florida Native
American Holly	<i>Ilex opaca</i>	45	***	Yes
Bottlebrush	<i>Callistmon rigidus</i>	15	**	No
Chickasaw Plum	<i>Prunus angustifolia</i>	15	**	No
Crape Myrtle	<i>Lagerstroemia indica</i>	25	***	No
Dahoon Holly	<i>Ilex cassine</i>	25—40	**	Yes
Dogwood	<i>Cornus florida</i>	20—30	**	Yes
Drake Elm	<i>Ulmus parvifolia</i>	40—50	**	No

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East Palatka Holly	<i>Ilex Attenuata</i>	30	**	Native Hybrid
Loquat	<i>Eriobotrya japonica</i>	15—25	**	No
Redbud	<i>Cercis Canadensis</i>	15—25	**	Yes
Wax Myrtle	<i>Myrica cerifera</i>	15—25	***	Yes
Winged Elm	<i>Ulmus alata</i>	40—50	**	Yes
Yaupon Holly	<i>Ilex vomitoria</i>	8	***	Yes

SHRUBS

Common Name	Scientific Name	Mature Height (feet)	Drought Tolerance	Florida Native
American Beautyberry	<i>Callicarpa americana</i>	8	***	Yes
Anise Tree	<i>Illicium anisatum</i>	20	*	No
Azalea	<i>Rhododendron</i> spp.	5—10	*	No
Camellia	<i>Camellia japonica</i>	6—10	**	No
Chinese Fringe Flower	<i>Loropetalum chinense</i>	6—10	***	No
Compact Walter's Viburnum	<i>Viburnum obovatum</i> "compacta"	3—6	***	Yes
Dwarf Burford Holly	<i>Ilex cornuta</i> 'Burfordi'	5—20	**	No
Dwarf Chinese Holly	<i>Ilex cornuta</i> 'Rotunda'	5—20	**	No
Dwarf Pittosporum	<i>Pittosporum tobira</i> 'Wheeler'	3	**	No

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Dwarf Shore Juniper	Juniperus conferta 'Compacta'	2	***	No
Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	5	**	No
Florida Anise	Illicium floridanum	15	**	Yes
Gardenia	Gardenia jasminoides	8	**	No
Indian Hawthorn	Rhaphiolepis indica	5	***	No
Japanese Privet, Ligustrum	Ligustrum japonicum	15	**	No
Gold Mound Lantana	Lantana camara	3	***	No
Nick's Compact Juniper	Juniperus chinenses 'Pfitzeriana Compacta'	2—3	***	No
Pfitzer Juniper	Juniperus chinensis 'Pfitzeriana'	3—5	***	No
Pineapple Guava	Feijoa sellowiana	14	**	No
Pittosporum	Pittosporum tobira	6	**	No
Plumbago	Plumbago auriculata	5	***	No
Podocarpus	Podocarpus macrophylla	35	***	No
Sandankwa Viburnum	Viburnum suspensum	6	**	No
Sweet Viburnum	Viburnum odoratissimum	8	**	No
Yellow Anise	Illicium parviflorum	15	**	Yes
Fire Bush	Hamelia patens	8	**	Yes

PALMS

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Common Name	Scientific Name	Mature Height (feet)	Drought Tolerance	Florida Native
Cabbage Palm	Sabal palmetto	40	***	Yes
Canary Date Palm	Phoenix canariensis	40	*	No
Chinese Fan Palm	Livistonia chinensis	25	**	No
Dwarf Palmetto	Sabal minor	6	***	Yes
European Fan Palm	Chamaerops humilis	10	**	No
King Sago Palm	Cycas revolute	8	*	No
Lady Palm	Rhapis excelsa	7	*	No
Pindo Palm	Butia capitata	15	**	No
Saw Palmetto	Serenoa repens	6	***	Yes
Washington Palm	Washingtonia robusta	80	**	No

GROUNDCOVERS

Common Name	Scientific Name	Mature Height (feet)	Drought Tolerance	Florida Native
Algerian Ivy	Hedera canariensis	Vine	**	No
Blue Pacific Juniper	Juniperus conferta 'Blue Pacific'	24	**	No
Cast Iron Plant	Aspidistra elatior	24	***	No (heavy shade tolerance)
Confederate Jasmine	Trachelospermum jasminoides	Vine	**	No

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Coontie	Zamia Floridana	12—24	***	Yes (heavy shade tolerance)
English Ivy	Hedera helix	Vine	**	No
Evergreen Giant Liriope	Liriope muscari 'Evergreen Giant'	18	**	No
Holly Fern	Cyrtomium falcatum	24	**	No (heavy shade tolerance)
Trailing lantana	Lantana montevidensis	12—18	***	No
Leatherleaf Fern	Rumohra adiantiformis	24—36	**	No
Mondo Grass	Ophiopogon japonicus	6—12	**	No
Parson's Juniper	Juniperus chinensis 'Parsonil'	24	***	No
Society Garlic	Tulbaghia violacea	18	**	No
Virginia Creeper	Parthenocissus quinquefolia	vine	**	Yes

FLOWERS AND ACCENT PLANTS

Common Name	Scientific Name	Mature Height (feet)	Drought Tolerance	Florida Native
Bee Balm, Horsemint	Monarda punctata	36	***	Yes
Black-eyed Susan	Rudbeckia hirta	24	**	Yes
Blanket flower, Gaillardia	Gaillardia pulchella	24	**	Yes
Bougainvillea	Bougainvillea spectabilis	72	***	No
Butterfly Weed	Asclepias tuberosa	24	**	Yes

Coral Honeysuckle	Lonicera sempervirens	vine	**	Yes
Coreopsis	Coreopsis tinctoria	24	**	Yes
Daylily	Hemerocallis sp.	36	*	No
Dune Sunflower	Helianthus debilis	18	**	Yes
Firecracker Plant	Russelia equiseformis	24	***	No
Muhly Grass	Muhlenbergia capillaris	36	***	Yes
Passion Flower	Passiflora incarnata	vine	**	No
Pentas	Pentas lanceolata	12—24	***	No
Saltmeadow Cordgrass	Spartina patens	24	**	Yes
Scarlet Milkweed	Asclepias curasavica	36—48	*	Naturalized
Spiderwort	Commelina erecta	24	***	Yes
Tropical Sage	Salvia coccinea	24	**	Yes
Texas Sage	Leucophyllum frutescens	48	**	No
Trumpet Vine	Campsis radicans	vine	**	Yes
Vinca or Periwinkle	Vinca Minor	6—12	**	Naturalized

Drought Tolerance

- * Somewhat drought tolerant: May need occasional irrigation year round.
- ** Moderate drought tolerant: May need occasional irrigation during the dry season.
- *** Very drought tolerant: Irrigation not necessary except during prolonged drought (once plants are established).

10.5.8. *Irrigation system.* All landscaped areas shall be provided with an underground irrigation system that delivers 100 percent coverage to plants and trees. Such irrigation system shall be

operated and maintained by the developer/property owner in such a manner as to ensure continued irrigation to the landscaped area. The irrigation system shall be equipped with a rain sensor device to minimize the potential for irrigation during rain events. Irrigation systems shall be required to make use of reclaimed water when such water is made available to the developer/property owner.

CHAPTER 11. - TREE PROTECTION

Section 11.1. - Purpose.

Trees are declared to be beneficial public resources. To that end, it shall be unlawful to cut down, damage, poison or in any other manner destroy or cause to be destroyed any tree except in accordance with the provisions of this chapter.

Section 11.2. - Applicability.

11.2.1. *New development or redevelopment.* All new development or reconstruction shall be in full compliance with the provisions of this chapter, except for ~~existing-owner-occupied~~ single-family residences in single-family and two-family zoning districts, which shall be exempt from the provisions of this chapter unless otherwise indicated herein.

11.2.2. *Emergency conditions.* During emergency conditions caused by a hurricane or other disaster, the provisions of this chapter may be suspended by direction of the city manager until the end of said emergency period. In the event that any tree shall endanger health or safety, and require immediate removal without delay, verbal authorization may be given by the DSD for the removal without obtaining a tree permit as herein required. Such verbal authorization shall be confirmed in writing by the DSD as soon as possible.

11.2.3. *Nurseries, etc.* All city-licensed nurseries shall be exempt from the provisions of this chapter, but only in relation to those trees that are planted and growing for sale or intended sale to the general public in the ordinary course of said licensee's nursery business.

11.2.4. *Plants in easements and rights-of-way.* State, county, city and franchised utilities may remove trees that endanger public safety and welfare, which are located within utility easements and public rights-of-way or are interfering with utility service without obtaining a tree permit. In such instances state, county, city or franchised utilities shall produce written notification to the DSD ten days prior to such removal and cooperate with the city to preserve such trees by relocation or replacement in the same vicinity or as determined by the DSD for the best public benefit. Under emergency conditions, such utilities and companies may effect removal without prior written notification and without permit as may be necessary to restore interrupted services.

11.2.5. *Land clearing.* On any platted, unplatted or undeveloped land, except as stated in section 11.2.2. of this chapter, it shall be unlawful for any person to remove, cause to be removed, or transplant any tree with a trunk diameter of six inches DBH or more without first having obtained a permit to do so as provided herein.

11.2.6. *Specimen trees.* Except as stated herein, specimen trees as designated in ~~s~~section 11.19 shall be maintained in a living condition. It shall be unlawful for any person to remove such trees except for those designated by the DSD upon review of the property, site plan or subdivision construction plan, as trees located in a proposed construction or reconstruction area that ~~can not~~cannot be saved or transplanted. Furthermore, it shall be unlawful for any person in the construction of any structures or other improvements to place solvents, material, construction machinery or temporary soil deposits within six feet or two-thirds of the dripline, whichever is greater, of any specimen tree.

11.2.7. *Historic trees.* Except as stated herein, historic trees as designated in section 11.20 shall be maintained in living condition. It shall be unlawful for any person to remove such tree except those designated by the City Council upon review of the property, site plan or subdivision construction

plan, as trees located in proposed construction or reconstruction area that cannot be saved or translated. Furthermore, it shall be unlawful for any person in the construction of any structures or other improvements to place solvents, material, construction machinery or temporary soil deposits within six feet or two-thirds of the dripline, whichever is greater, of any historic tree.

Section 11.3. - Exemptions.

The following species are exempted from the provisions of this chapter.

Common Name	Botanical Name
Australian Pine	Casuarina equisetifolia
Brazilian Pepper	Schinus terebinthefolius
Camphor	Cinnamomum camphora
Chinaberry	Melia azedarach
Chinese Tallow	Sapium sebiferum
Citrus	Citrus species
Ear Tree	Enterolobium cyclocarpum
Eucalyptus	Eucalyptus species
Punk Tree	Melaleuca leucadendion
Silk Oak	Grevillea robusta
Woman's Tongue	Albizia lebbeck
<u>Sand Pine</u>	<u>Pinus clausa</u>

Section 11.4. - Tree removal permit.

11.4.1. *Tree removal permit application.* Permission for removal, relocation or replacement of trees shall be made on an application form provided by the development services department, together

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with all information and required exhibits and accompanied by the tree removal fee as adopted by resolution of the city council.

11.4.2. *Time of permit.* Any and all permits issued by the DSD shall be declared null and void if commencement of work so permitted is not begun within six months from date of issuance.

11.4.3. *Display of permit and site inspection.* The applicant shall prominently display the tree removal permit on the site. Said permit shall be displayed continuously while trees are being removed or replaced, or work done, as authorized on the permit and for ten days thereafter. As a condition for the issuance of the permit, the applicant shall agree in writing to entry onto his premises by representatives of the city and all law enforcement officers.

Section 11.5. - Tree removal permit requirements.

An application for a tree removal permit shall be filed, processed and approved as follows.

11.5.1. *Concurrent application.* An application for a tree removal permit shall be filed concurrently with a site plan or preliminary subdivision plat application as required by this code. No trees shall be removed until the site plan or preliminary plat is approved and the tree permit issued. The application for a tree permit shall include, in addition to the requirements of the site plan or subdivision application, the following information.

- A. A tree survey to scale no greater than one inch equals 50 feet that identifies trees by location, scientific and common name and diameter at breast height (DBH). The tree survey should be part of the site development plan or subdivision plat unless, in the judgment of the DSD, the plans are illegible when combined.
- B. The survey shall denote the following information
 1. Existing trees to be removed, relocated or retained.
 2. Replacement stock to be planted.
 3. Existing trees to be removed and trees to be retained requiring protection shall be clearly designated on site. Method of designation shall be included on the plans submitted for review.
 4. Existing and proposed utility easements.
 5. Existing and proposed improvements on the site.

11.5.2. *Nonconcurrent application.* Except as otherwise provided in section 11.5.1. of this chapter, an application for a tree permit shall be filed, processed and approved as follows.

- A. An application and two sets of plans shall be filed with the development services department along with the tree permit fee as adopted by resolution of the city council.
- B. The application and plans shall include the following information and exhibits.
 1. A diagram of the property at a scale no greater than one inch equals 50 feet that identifies any tree to be removed, its location, common name, DBH, any existing or proposed development on the site, details of replacement stock to be planted including location, size and species. The applicant shall submit two copies of the diagram with the application.
 2. Name, signature, address, telephone and fax numbers and email address of the property owner.
 3. Legal description of the property and property appraiser's parcel number.
 4. North arrow, scale and identification of streets abutting the property.
 5. Reason for removal of trees.

- 6. Existing trees to be removed and trees to be retained requiring protection shall be clearly designated on the site. The designation method used shall be indicated on the plan submitted for review.
- C. If the DSD determines that the application is complete, said application shall be reviewed for compliance with the requirements of this code. The DSD shall have 15 days from the date of receipt of a complete application to approve or disapprove the permit. If no action has been taken after 15 days, the permit shall be deemed approved.

11.5.3. *Application option.* For any application in which the proposed site is five acres or more in land area, the applicant may, subject to approval of the DSD, identify trees by major tree groupings. The plan shall show existing tree groupings with tree types identified by approximate tree type and size percentages in those areas where no trees are proposed to be removed and no soil is to be disturbed in any manner. In all cases, trees to be removed and trees directly adjacent to the clearing area that are to be protected shall be identified on the plan by type and location clearly designated on site. The designation method used shall be indicated on the plan submitted for review.

Section 11.6. - Removal of trees.

A tree may be removed if it is located in an area where a structure or improvements will be placed according to an approved plan and it cannot be relocated on the site because of age, type or size of the tree; or the tree is diseased, injured, in danger of falling too close to existing or proposed structures, interferes with existing utility service, creates unsafe vision clearance or conflicts with other ordinances or regulations.

Section 11.7. - Standards for the location, relocation or replacement of trees.

~~Unless otherwise stated herein~~ This section applies to all new development, including permit applications for single-family dwellings. Trees shall be saved, located, relocated or replaced to ensure a minimum of six inches of DBH for every 2,500 square feet of the total lot area (rounded to the nearest whole number). Trees identified for removal on the tree permit application shall be replaced by replacement stock based on 15 percent of the DBH inches of the trees to be removed.

Specimen trees shall only be removed in accordance with the following requirements:

<u>NUMBER OF SPECIMEN TREES PER ACRE</u>	<u>ON-SITE PROTECTION REQUIRED</u>
<u>Less than 3 per acre or a portion thereof</u>	<u>80 percent of all specimen trees</u>
<u>3.0 to 8.0 per acre</u>	<u>50 percent of all specimen trees</u>
<u>More than 8.0 per acre</u>	<u>4 specimen trees per acre</u>

~~In the event that~~ Any specimen trees must be removed the DSD shall require additional replacement trees must be replaced by replacement stock based on 50 percent of the DBH inches -with a minimum of three inches DBH for every six inches- of the specimen tree removed.

Historic trees shall only be removed upon approval of a permit granted by the City Council. If said trees are deteriorated, dying, or considered to be a hazard, the applicant may provide proof of such by report of a licensed forester. The City Council shall approve, approve with conditions or deny a request to remove a historic tree. Upon receipt of the City Council actions, the Development Services Director shall issue the permit with a concurrent development order, or immediately if no concurrent development permit is associated with the request.

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Section 11.8. - Area tree protection requirements.

Fifteen percent of the square footage of any development shall be designated for the protection of trees. The area required to protect specimen or historic trees may be included to satisfy this requirement. This required area may be constituted as one or more sub areas within the development. Said area may include any landscape buffer or other landscape areas required by this code. Such designated areas shall contain sufficient land area to comply with minimum tree protection standards to adequately protect the trees contained within the areas. A minimum of 50 percent of the required minimum number of trees as required by section 11.6 of this chapter shall consist of existing trees within said area. This requirement may be modified if the development contains an insufficient amount of existing trees to meet this requirement, or the modification of this requirement is warranted by specific on-site conditions.

Section 11.9. - Natural vegetation retention areas.

Areas of a development may be designated as natural vegetation retention areas indicating that all existing vegetation shall remain undisturbed within said designated area. Under this designation, trees that contain at least two inches ~~and up to six inches~~ DBH size may be retained as replacement trees. Replacement trees shall be considered protected trees and shall be spaced sufficiently far apart to allow adequate growth room for the species.

Section 11.10. - Prior to commencement of construction.

Prior to the commencement of construction, the applicant shall clearly mark any tree or tree groups to be maintained as required by section 11.5.1. of this chapter, in the proximity of any area where land-clearing equipment is to be operated. The markings shall remain in place during construction. Said equipment shall be operated in a manner as to not injure or destroy any trees in accordance with this chapter.

Section 11.11. - During construction.

During the construction stage of development, a temporary barrier at least three feet in height shall be formed to create a minimum radius of six feet from the base of the tree or trees. It shall include at least 50 percent of the area under the drip line of the tree. The developer shall not cause or allow the cleaning of equipment or material within the drip line of any tree or groups of trees to be maintained. Neither shall the developer cause or allow the disposal of waste material, such as paint, oil, solvents, asphalt, concrete, mortar or any other material harmful to the life of a tree within the drip line of any tree or groups of trees. No attachment, wire (other than protective guy wires), signs or permits may be fastened to a tree. Nothing contained herein shall be construed to prevent the designation of driveways or parking areas beneath tree branches so long as the impervious surface amounts to no more than 50 percent of the total area under drip line of the tree. In no event shall the impervious area be located closer than six feet from the trunk of the tree. In no event shall motorized equipment be allowed to park on or traverse the area that is to remain in its natural state surrounding a tree that is to be preserved.

Section 11.12. - Natural soil level.

~~Except for palm trees, all~~ All trees and replacement stock shall have their natural soil level maintained. Tree wells and/or planter islands shall be provided, if necessary, to maintain the natural existing soil level. All efforts shall be made to maintain natural drainage to such trees.

Section 11.13. - Tree maintenance and survival.

11.13.1. *Tree maintenance.* All tree planting and replacement shall be of a sound workmanship manner and according to accepted good planting procedures. The owner of the property shall be responsible for the maintenance of all trees required by this code, which shall be maintained in good condition so as to present a healthy and safe appearance.

11.13.2. *Tree survival.* Except for any exemptions contained in this chapter, all trees relocated, replaced or existing as required by this code shall be replaced by the property owner or lessee in the event said trees are not maintained in a healthy condition. If the development otherwise meets the minimum requirements of the code, the DSD may waive the replacement requirements. To ensure survival of trees, the DSD shall also utilize the provisions of the Tree Protection Manual for Builders and Developers published by the state department of agriculture and consumer services, division of forestry, or other comparable protection requirements.

Section 11.14. - Street trees to be planted.

11.14.1. *Official street trees.* The following list constitutes the official street tree species for Orange City, Florida. ~~No species other than those included in this list may be planted as street trees without written permission of the city tree board.~~

Small Trees	Medium Trees	Large Trees
Dahoon Holly	Dogwood	Bald Cypress
Hop Hornbeam	Sable (Cabbage) Palm	Winged Elm
Redbud	Hackberry	Red Maple
Chickasaw Plum	American Holly	Laurel Oak
Bottlebrush	Loblolly Bay	Live Oak
Pindo Palm	Cherry Laurel	Washington Palm
	Pumpkin Ash	Sycamore
	East Palatka Holly	Southern Magnolia
	Wax Myrtle	Sweet Gum
	Crape Myrtle	Date Palm
	Drake Elm	

11.14.2. *Spacing.* The official street tree species, size and classes listed in section 11.14.1. of this chapter shall be planted in according to the following spacing distance: Small trees, 30 feet; medium trees, 40 feet; large trees, 40 feet, except in special plantings designed or approved during the site plan process.

- 11.14.3. *Distance from curb or sidewalk.* The official street tree species size classes listed in section 11.14.1. of this chapter shall not be planted closer to any curb or sidewalk than the following: Small trees, two feet; medium trees, three feet; and large trees, four feet.
- 11.14.4. *Distance from street corners and fire hydrant.* No street tree shall be planted closer than 20 feet from any street corner, measured from the point of nearest intersecting curbs or curb lines. No street tree shall be planted closer than ten feet of any fire hydrant.
- 11.14.5. *Public tree care.* The city shall have the right to plant, prune, maintain and remove trees, plants and shrubs within or extending over right-of-way lines of all streets, alleys, avenues and lanes, squares and public grounds, as may be necessary to insure public safety or to preserve or enhance the symmetry and beauty of such public grounds. The city tree board may remove or cause to be removed, any tree or part thereof that is in an unsafe condition or which, by reason of its nature, is injurious to sewers, electric lines, gas lines, water lines or other public improvements, or is infected with any injurious fungus, insect or pest. This section does not prohibit the planting of street trees by adjacent property owners providing that the selection and location of said trees is in accordance with sections 11.14.1. through 11.14.5. of this chapter.
- 11.14.6. *Tree topping.* It shall be unlawful as a normal practice for any person, firm or city department to top any street tree, park tree or other tree on public property. Topping is defined as the severe cutting back of limbs to stubs larger than three inches in diameter within the tree's crown to such a degree so as to remove the normal canopy and disfigure the tree. Trees severely damaged by storms or other causes, or certain trees under utility wires or other obstructions where other pruning practices are impractical, may be exempt from this article at the determination of the city tree board.
- 11.14.7. *Pruning, corner clearance.* Every owner of any tree overhanging any street right-of-way within the city shall prune the branches so that such branches shall not obstruct the light from any street lamp or obstruct the view of any street intersection and to create a clear space of eight feet above the surface of the street sidewalk. Said owners shall remove all dead, diseased or dangerous trees, or broken or decayed limbs. The city shall have the right to prune any tree or shrub on private property when it interferes with the proper spread of light along the street from a streetlight, or interferes with visibility of any traffic control device or sign. This subsection shall also apply to existing single-family owner-occupied residences in single-family and two-family zoning districts.
- 11.14.8. *Exceptions.* During the period of emergencies such as hurricane, windstorm, flood, freeze or other disasters, the requirements of this chapter may be waived by the city manager. Said waiver must be for a time certain and may not be for an indefinite period.

Section 11.15. - Tree bank.

Should it be physically impossible according to accepted good planning procedures to replace all required replacement trees. The DSD may allow the developer to make a contribution to the city's tree bank based on the banking formula listed here. Contributions to the tree bank shall be reserved to enhance city property and rights-of-way with tree installation, replacement and maintenance.

TREE BANKING FORMULA

~~$4.93 \text{ square inches} \times \text{number of replacement trees} \times \$27.00 = \text{Number of DBH inches of trees to be removed divided by } 2 \times \230~~

Notes:

~~$4.93 \text{ square inches} = \text{cross-sectional area of a } 2\frac{1}{2}\text{" caliper tree measured at } 12\text{" height (A } 2\frac{1}{2}\text{" tree measured at } 12\text{" height (caliper) is equal to a } 2\text{" tree measured at DBH, } 4.5\text{' height).}$~~

~~$4.93 \times \$27.00 \text{ (accepted national value per square inch)} = \$133.00 \text{ for } 2\text{" tree (rounded to the nearest dollar). } \$230 \text{ is the estimated cost to plant, stake, mulch and irrigate a } 2 \text{ inch DBH tree}$~~

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according to the Central Florida Community Tree Guide from the United States Department of Agriculture, General Technical Report dated September 2010.

Example: ~~35~~18" specimen tree to be removed = ~~five~~9 replacement trees at 2" ~~caliper~~ DBH = ~~\$133.00~~230 × ~~5~~9 = ~~\$665.00~~2,070—to be tree banked with the city.

Section 11.16. - Stop work order.

The ~~DSD Enforcement Official~~ shall issue a "stop work order" to any person found in the act of cutting down, destroying, damaging or removing trees in violation of this code.

Section 11.17. - Appeals.

Any person may appeal a decision of the DSD in the enforcement or interpretation of any of the terms or provisions of this chapter as provided for by chapter 3, section 3.11 of this code.

Section 11.18. - Violations and penalties.

Violations shall be processed and penalties levied as provided for by the City Code of Ordinances.

Section 11.19. - Specimen trees.

Common Name COMMON NAME	Botanical Name BOTANICAL NAME	DBH (inches and larger)
Bald Cypress	Taxodium distichum	12 18
Elm	Ulmus spp.	18
Hickory	Carya spp.	18
Laurel Oak species	Quercus laurifolia	18
Live Oak	Quercus virginiana	18
Loblolly Bay	Gordonia lasianthus	12
Red Bay	Persea borbonia	12
Red Maple	Acer rubrum spp.	18
River Birch	Betula nigra	12
Shumard Oak	Quercus shumardii	18
Slash Pine	Pinus elliottii	18

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Southern Magnolia	Magnolia grandiflora	12
Southern Red Cedar	Juniperus virginiana	12
Swamp Bay	Persea palustris	12
Sweet Bay Magnolia	Magnolia virginiana	12
Sweetgum	Liquidambar styraciflua	18
Sycamore	Platanus occidentalis	18
Turkey Oak	Quercus laevis	12
<u>All other Oak Species</u>	<u>Quercus spp.</u>	<u>18</u>

Section 11.20.- Historic trees.

<u>COMMON NAME</u>	<u>BOTANICAL NAME</u>	<u>DBH (inches and larger)</u>
<u>Live Oak</u>	<u>Quercus virginiana</u>	<u>36</u>
<u>Bald Cypress</u>	<u>Taxidium distichum</u>	<u>36</u>