

Chapter 10 LANDSCAPING AND TREE PROTECTION

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CHAPTER 10 - LANDSCAPING AND TREE PROTECTION

ARTICLE 1. PURPOSE AND INTENT

It is the intent of the City to promote the health, safety and welfare of existing and future residents of and visitors to the City by establishing minimum standards for the protection of natural plant communities, and the installation and continued maintenance of landscaping within the City in order to:

Sec. 10.1.1. WATER CONSERVATION.

Promote the conservation of potable and non-potable water by encouraging the preservation of existing plant communities, encouraging the planting of natural or uncultivated areas, encouraging the use of site specific plant materials, and establishing techniques for the installation and maintenance of landscape materials and irrigation systems.

Sec. 10.1.2. AESTHETICS.

Improve the aesthetic appearance of residential, commercial and industrial areas through the incorporation of open space into development in ways to harmonize and enhance the natural and built environment.

Sec. 10.1.3. ENVIRONMENTAL QUALITY.

Improve environmental quality by recognizing the numerous beneficial effects of landscaping upon the environment, including: (a) improving air and water quality through such natural processes as photosynthesis and mineral intake; (b) maintaining permeable land areas essential to surface water management and aquifer recharge; (c) reducing and reversing air, noise, heat, and chemical pollution through the biological filtering capacities of trees and other vegetation; (d) promoting energy conservation through the creation of shade, reducing heat gain in or on building or paved areas, (e) reducing the temperature of the microclimate through the process of evapotranspiration; and (f) encouraging the conservation of limited fresh water resources through the use of site specific plants and various planting and maintenance techniques.

Sec. 10.1.4. LAND VALUES.

Maintain and provide opportunity for increasing the value of land by requiring a minimum amount of landscaping to be incorporated into development.

Sec. 10.1.5. PRESERVATION OF VEGETATION.

Preserve existing native vegetation and the incorporation of native plants, plant communities and ecosystems into landscape design, where possible.

Sec. 10.1.6. REMOVAL OF NUISANCE SPECIES.

Eradicate or control certain exotic plant species which have become nuisances because of their tendency to damage public and private works, to have a negative effect upon public health, or to disrupt or destroy native ecosystems.

Sec. 10.1.7. IMPROVED URBAN DESIGN.

Promote innovative and cost-conscious approaches to design, installation and maintenance of landscaping, encouraging water and energy conservation.

ARTICLE 2. DEFINITIONS

Sec. 10.2.1. GENERAL.

For the purposes of this Chapter, in addition to the following terms or words, the definitions provided for in Chapter 4 of the LDR shall apply. If definitions at any time conflict with definitions provided in other Chapters or ordinances, the more restrictive interpretation shall apply.

10.2.1.1. **BUFFER, PERIMETER LANDSCAPE.** An area of land which is required to be set aside along the perimeter of a lot in which landscaping is used to provide a transition between and to reduce the environmental, aesthetic, and other impacts on one type of land use upon another.

10.2.1.2. **CULTIVATED LANDSCAPE AREA.** Planted areas that are frequently maintained by mowing, irrigation, pruning, fertilizing, and related maintenance.

10.2.1.3. **ECOSYSTEM.** A characteristic assemblage of plant and animal life within a specific physical environment, and all interactions among species, and, between species and their environment.

10.2.1.4. **GROUND COVER.** Plants, other than turfgrass, normally reaching an average maximum height of not more than 24 inches at maturity.

10.2.1.5. **HEDGE.** A landscape barrier consisting of a continuous, dense planting of shrubs.

- 10.2.1.6. IRRIGATION SYSTEM. A permanent, artificial watering system designed to transport and distribute water to plants.
- 10.2.1.7. LANDSCAPING. Any combination of living plants (such as grass, ground cover, shrubs, vines, hedges, or trees) and non-living landscape material (such as rocks, pebbles, sand, mulch, walls fences, or decorative paving materials.).
- 10.2.1.8. MULCH. Non-living organic and synthetic materials customarily used in landscape design to retard erosion and retain moisture.
- 10.2.1.9. OPEN SPACE. Shall be interpreted to mean:
- 10.2.1.9.1. All areas of natural plant communities or areas replanted with vegetation after construction, such as: revegetated natural areas; tree, shrub, hedge or ground cover planting areas; lawns; and
 - 10.2.1.9.2. Other areas to be provided as open space as required in the Development Regulations.
- 10.2.1.10. PLANT COMMUNITY. A natural association of native plants that are dominated by one or more prominent species, or a characteristic physical attribute.
- 10.2.1.11. PLANT SPECIES, PROHIBITED. Those plant species which are demonstrably detrimental to native plants, native wildlife, ecosystems, or human health, safety, and welfare.
- 10.2.1.12. SHRUB. A self supporting woody perennial plant of low to medium height characterized by multiple stems and branches continuous from the base.
- 10.2.1.13. SITE SPECIFIC PLANTING. The selection of plant material that is particularly well suited to withstand the physical growing conditions which are normal for that location.
- 10.2.1.14. SHADE TREE. A self supporting woody plant or species normally growing to a mature height of at least 15 feet and a mature spread of at least 15 feet. Clusters of more than one tree may be used when it is demonstrated to the City that the grouping of trees will, at maturity, surpass the 15 feet diameter requirement and that the grouping of trees is suitable for the proposed location.
- 10.2.1.15. TREE. A self-supporting woody plant of a species normally growing to a mature height of at least 15 feet.

- 10.2.1.16. VEGETATION INVENTORY. A document which delineates the location and identifies the vegetation upon a lot, and which meets the standards established in Section 10.4.2. and Section 10.4.3. of this Chapter.
- 10.2.1.17. TURF. Continuous plan coverage consisting of grass species suited to growth in the City.
- 10.2.1.18. UNDERSTORY. Assemblages of natural low-level woody, herbaceous, and ground cover species which exist in the area below the canopy of the trees.
- 10.2.1.19. VEGETATION, NATIVE. As used in this Chapter, plant species with a geographic distribution indigenous to all, or part, of the State of Florida. Unless specified otherwise, when the term vegetation is used in this Chapter, it shall be interpreted to mean native vegetation growing naturally on the site and not planted by man and shall include but not necessarily be limited to the following trees and understory species:

Bald cypress	Sweet bay magnolia
Gordonia	Black gum
Water hickory	Sabal palm
Red maple	Wax myrtle
Slash pine	Live oak
Saw Palmetto	Tar flower
Beauty berry	Blackjack oak
Dogwood	Persimmon
Red bay	Rusty lyonia
Hawthorn	Sand pine
Turkey oak	Long needle pine
Yucca	American holly
Magnolia	Blue beech
Button bush	Red mulberry
Laurel oak	Sweetgum
Blazing star	Chapman oak
Scrub hickory	Pygmy fringe tree
Scrub plum	

ARTICLE 3. APPLICABILITY OF CHAPTER

Sec. 10.3.1. GENERAL.

This Chapter shall apply to any new property development or to the expansion of existing development, except as provided otherwise herein. Individually owned single family detached dwelling units, where the owner meets the "low and moderate income" definition requirements contained in Chapter 4 of the LDR, shall be exempt from the provisions of Articles 4, 5, 6, 8, 10, and 11 of this Chapter. Other single family detached dwellings shall be exempt only as specifically noted. No City department shall issue a permit provided for herein in violation of this Chapter.

ARTICLE 4. LAND CLEARING/VEGETATION PROTECTION AND PRESERVATION

Sec. 10.4.1. GENERAL.

10.4.1.1. CHAPTER OBJECTIVES. The objectives of this Chapter in limiting land clearings are:

10.4.1.1.1. To limit the use of irrigation water in open space areas by promoting the preservation of existing plant communities;

10.4.1.1.2. To limit the removal of valuable existing native vegetation in advance of the approval of land development plans; and

10.4.1.1.3. To limit the removal of valuable existing native vegetation when no comparable vegetation plan has been prepared for the site.

10.4.1.2. PRESERVATION OF EXISTING NATIVE VEGETATION. Existing native vegetation and plant communities shall be protected and incorporated into the site plan wherever feasible.

10.4.1.3. VEGETATION REMOVAL PERMITS.

10.4.1.3.1. *General.* Unless otherwise provided for in this Chapter, no person, corporation, association public agency, or agent or employee thereof, shall effectively destroy or remove native vegetation from any property within the City without first obtaining a vegetation removal permit from the City.

10.4.1.3.2. *Vegetation Removal Permits and Fees.* Permits for the removal, relocation or replacement of native vegetation covered herein shall be obtained by submitting an application to the building department of the City. Permit fees for the removal of vegetation shall be established by the City Commission.

Sec. 10.4.2. APPLICATION PROCEDURE FOR A VEGETATION REMOVAL PERMIT.

10.4.2.1. PRELIMINARY REVIEW. The preliminary review procedures shall assure that the applicant has taken all steps reasonably necessary to preserve existing native vegetation and to otherwise enhance the aesthetic appearance of the development by the incorporation of existing native vegetation into the site design process.

10.4.2.2. NATIVE VEGETATION INVENTORY. Each application for a vegetation removal permit shall be accompanied by 3 copies of a generalized native vegetation inventory which shall consist of the following:

10.4.2.2.1. A generalized vegetation inventory showing the approximate location and extent of native vegetation upon the site for all trees with a 2 inch caliper trunk measured 4 feet from the trunk base and all understory species greater than 3 feet in height. The inventory shall be based upon the most current available information. For non-residential, duplex and multi-family development, the inventory may be in the form of an aerial or a field survey, and shall be accompanied by photographs illustrating typical areas of vegetation. For an individual single family detached unit, the inventory may be in the form of hand drawn sketches accompanied by photographs of existing site conditions. The generalized vegetation inventory shall be prepared at the same scale as the site development plans or in some other manner which clearly illustrates the relationships between the areas of vegetation and the proposed site improvements.

10.4.2.3. PRELIMINARY APPROVAL.

10.4.2.3.1. *Issuance for lots or parcels with minimal native vegetation disruption.* Where the City has verified that no significant native vegetation removal activity is involved in a proposed development, a preliminary approval shall be issued forthwith.

10.4.2.3.2. *Issuance for lots with significant native vegetation disruption.* Preliminary approval for an application involving native vegetation removal activity shall be issued only under the following circumstances:

10.4.2.3.2.1. Where a tree or other native vegetation, due to natural circumstances, is no longer viable, is in danger of falling, is too close to existing structures so as to endanger such structures, interferes with utility services, creates unsafe vision clearance or constitutes a health hazard, or;

10.4.2.3.2.2. Where the affected native vegetation will be relocated, replaced with suitable substitutes or otherwise preserved, or;

10.4.2.3.2.3. Where in consideration of the factors set out in this Chapter, the building department determines that the issuance of the permit is justified.

10.4.2.3.3. *Relocation and replacement.* As a condition to the granting of a vegetation removal permit under this section, the applicant shall be required to:

10.4.2.3.3.1. Relocate vegetation which would otherwise be destroyed to another location upon the site, or;

10.4.2.3.2. To replace vegetation which will be destroyed with suitable replacements elsewhere within this site. In determining the required relocation, replacement or root pruning of vegetation, the building department shall consider the needs of the intended use of the property, including all lands dedicated to public use, together with an evaluation of the following:

10.4.2.3.3.1.1. Existing vegetative coverage on the site and in the immediate surrounding area.

10.4.2.3.3.1.2. Quantity of vegetation to be removed on the entire site.

10.4.2.3.3.1.3. The type, size and condition of the vegetation to be removed.

10.4.2.3.3.1.4. The feasibility of relocating the particular vegetation.

10.4.2.3.3.1.5. Topography and drainage of the site.

10.4.2.3.3.1.6. The nature of the existing and intended use of the property.

Sec. 10.4.3. NATIVE VEGETATION PROTECTION.

10.4.3.1. GENERAL. During construction, all steps necessary to prevent the destruction or damaging of native vegetation shall be taken. Native vegetation destroyed or receiving major damage must be replaced by vegetation of equal environmental value, as specified by the building department, before occupancy or use unless approval for their removal has been granted under permit.

10.4.3.2. FILLING AND CONSTRUCTION DEBRIS. During construction, unless otherwise authorized by the vegetation removal permit, no excess soil, additional fill, equipment, liquids, or construction debris, shall be placed within the drip line of any vegetation that is required to be preserved in its present location.

10.4.3.3. ATTACHMENTS. No attachments or wires other than those of a protective or non-damaging nature shall be attached to any vegetation during construction.

10.4.3.4. EXCAVATION. Unless otherwise authorized by the vegetation removal permit, no soil is to be removed from within the drip line of any tree that is to remain at its original location.

10.4.3.5. PROTECTIVE BARRIERS.

10.4.3.5.1. *Installation of protection barriers.* All protection barriers shall be installed and maintained for the period of time beginning with the commencement of any land clearing or building operations and ending with the completion of the permitted clearing or building construction work on the site.

10.4.3.5.2. *On-site representative required.* The applicant for a vegetation removal permit shall, at the time of application, designate an on-site representative who will be responsible for the installation and the maintenance of all tree protection barriers. The representative shall be responsible for supervising the removal of all existing vegetation permitted to be removed. The representative shall be on-site at all times during the vegetation clearing operations.

10.4.3.5.3. *Protection of large areas of native vegetation.* When the circumference of an area of vegetation to be preserved is more than 200 linear feet, the area shall be protected during land alternation and construction activities by placing 2X2 wood stakes a maximum of 20 feet apart around the perimeter of the area of vegetation, and tying ribbon, survey flagging, rope, or similar material at a minimum height of 3 feet from stake to stake along the perimeter of such areas to be preserved.

10.4.3.5.4. *Protection of small areas of native vegetation.* When the circumference of an area of protected vegetation is less than 200 linear feet, a protective barrier shall be placed around the groups of trees and understory that is indicated to remain. The barrier shall be not less than 3 feet in height, shall limit access to the protected area,

and shall be composed of wood, metal or other suitable materials which insures compliance with the intent of the Chapter. The barrier shall be highlighted with strips of survey flagging placed no more than 5 feet on center. The provided barrier shall not harm the protected vegetation through construction or any other means.

10.4.3.5.5. *Protection of individual trees.* When the retention of single trees is required by this Chapter, a protective barrier, similar to that required in paragraph 10.4.3.5.4. above, shall be placed around the tree at a minimum distance from the trunk of 6 feet or 2/3 of the drip line, whichever is greater of a hardwood tree, and 6 feet or the drip line, whichever is greater for a softwood tree, or as otherwise determined by the building department.

Sec. 10.4.4. EXCEPTIONS.

10.4.4.1. **VEGETATION ENDANGERING HEALTH, SAFETY OR PROPERTY.** In the event that any vegetation shall endanger health, safety or property, and require immediate removal without delay, verbal authorization may be given by the Building Official and the vegetation removed without obtaining a written permit as herein required. Such verbal authorization shall later be confirmed in writing by the Building Official.

10.4.4.3. **CITRUS GROVES.** All groves in active agriculture operation shall be exempt from the terms and provisions of this Chapter.

10.4.4.4. **FEE EXCEPTIONS.** The following types of trees shall be exempt from the provisions of this Chapter relating to permit fees, and no fees shall be charged for the removal of this vegetation. The building department shall provide guidance to any individual in doubts as to the identity of any particular vegetation:

10.4.4.4.1. *Melaleuca quinquenervia* (Cajaput or Paperbark Tree).

10.4.4.4.2. *Casuarina* species (Australian Pine, Beefwood).

10.4.4.4.3. *Schinus terbinthifolius* (Brazilian Pepper).

10.4.4.4.4. Trees which are no longer living or are dying.

10.4.4.4.5. Trees which are required to be removed by law.

ARTICLE 5. SITE DESIGN STANDARDS.

Sec. 10.5.1. SITE DEVELOPMENT FOR WATER CONSERVATION.

10.5.1.1. WATER NEEDS AND REQUIREMENTS MAY BE REDUCED BY PROVIDING FOR:

- 10.5.1.1.1. The preservation of existing plant communities;
- 10.5.1.1.2. The reestablishment of native plant communities;
- 10.5.1.1.3. Limited amount of lawn grass areas;
- 10.5.1.1.4. The use of site specific plant material (See Definitions);
- 10.5.1.1.5. The use of shade trees to reduce transpiration rates of lower story plant materials;
- 10.5.1.1.6. Site development that retains storm water runoff on site;
- 10.5.1.1.7. The use of pervious paving/surfacing materials;
- 10.5.1.1.8. Site development that minimizes alteration of the land in its present form.

Sec. 10.5.2. PRESERVATION OF EXISTING NATIVE PLANT COMMUNITIES.

10.5.2.1. GENERAL. All existing native plant communities on sites proposed for development shall be preserved in as much as they can be incorporated into the required open space. Existing plant communities that are specified to remain shall be preserved in their entirety, with all trees, understory, and ground covers left intact and undisturbed. The purpose of the preservation of existing plant communities is to decrease the initial costs of site development, decrease future water and maintenance requirements and benefit the aesthetic appearance of the property.

10.5.2.2. EXISTING NATIVE PLANT COMMUNITIES REQUIRED TO REMAIN. When existing native plant communities occur on a parcel of land to be developed, at least 25% of the required open space shall be in the form of preserved native plant communities.

10.5.2.3. OPEN SPACE CREDIT FOR THE PRESERVATION OF EXISTING NATIVE PLANT COMMUNITIES. Portions of existing viable, healthy native plant communities over and above the minimum required to be preserved by paragraph 10.5.2.1., that are preserved in a natural state, and are capable of sustaining life with adjoining site development, shall be credited as open space at 1.5 times the actual area of the protected plant community. The

minimum size of a preserved plant community eligible for the open space credit shall be 1/8 acre.

10.5.2.4. REQUIRED MANAGEMENT PLAN.

10.5.2.4.1. *General.* For all areas of preserved native plant communities larger than 1/2 acre in area, the owner shall submit, for the approval of the building department, a management plan indicating the manner in which the owner will preserve the native plant communities. The plan shall include at a minimum:

10.5.2.4.1.1. Whether or not the existing vegetation is to be preserved in the existing species composition;

10.5.2.4.1.2. If applicable, the manner in which the composition of existing plant material is to be preserved (hand removal of invasion species, prescribed burning, etc.);

10.5.2.4.1.3. The schedule for the removal of exotic species;

10.5.2.4.1.4. The schedule for the removal of debris; and

10.5.2.4.1.5. Other information that may be required by the building department that is reasonable and necessary to make a determination that the management plan meets the requirements of this Chapter.

10.5.2.4.2. *Requirement for owner's covenant with the city for the maintenance of preserved native plant communities receiving open space credit.* In order to receive open space credit for areas of preserved native vegetation, the owner shall covenant with the City, in a form acceptable to the City, that the preserved plant community will be maintained as per the accepted management plan.

ARTICLE 6. LANDSCAPE DESIGN STANDARDS.

The below standards shall be considered the minimum requirements for the installation of all plant materials within the City.

Sec.10.6.1. MINIMUM TREE AND SHRUB PLANTING OR PRESERVATION REQUIREMENTS.

10.6.1.1. GENERAL. Trees shall not be placed where they interfere with site drainage or where they shall require frequent pruning in order to avoid

interference with overhead power lines. Unless otherwise provided in this Section, a minimum number of trees shall be planted or preserved upon each site, as follows:

10.6.1.1.1. *Single family or duplex residential unit lots.*

10.6.1.1.1.1. Tree planting requirements for residential lots. One tree shall be planted or preserved for every 3,500 sq. ft. of area of a residential lot or fraction thereof, excluding only areas of native vegetation to be preserved by law. A minimum of 50% of all required trees shall be shade trees. No more than 15 new trees shall be required to be planted upon any lot which is actually used or intended to be used for one single family detached residence or one duplex residence.

10.6.1.1.2. *Non-residential lots or parcels.*

10.6.1.1.2.1. Minimum tree planting requirements for non-residential sites. One tree shall be planted or preserved for every 3,000 sq. ft. of area of non-residential lot or fraction thereof, excluding only areas of native vegetation required to be preserved by law. A minimum of 60% of all required trees shall be shade trees.

10.6.1.2. STANDARDS FOR LANDSCAPE MATERIALS.

10.6.1.2.1. Quality of plants. All plant materials shall be a minimum of Florida Number One as defined in Grades and Standards Revised, Part II, as published by the Florida Department of Agriculture and Consumer Services. Exceptions and substitutions from this regulation may be reviewed and approved by the building department in order to promote the use of slow growing or native plant materials.

10.6.1.2.2. *Tree planting standards.* Immediately upon planting, trees shall be a minimum of 8 feet in height and shall have a minimum caliper of 1 1/2 inches.

10.6.1.2.3. *Shrub planting standards.* When required to be planted by this Chapter, shrubs or hedges shall be a minimum of 24 inches in height and hedges shall be a minimum of 48 inches in height above the surface root system at the time of planting, and spaced 18-36 inches on center. Spacing of individual plants shall depend upon the type of plant material used. Hedges, where required, shall form a solid continuous visual screen of at least 6 feet in height within 2 years after the time of planting. Exceptions and substitutions from this

requirement may be reviewed and approved by the building department in order to promote the use of slow growing or native plant materials.

10.6.1.3. LANDSCAPING THE INTERIOR OF OFF-STREET PARKING AREAS.

10.6.1.3.1. *Minimum interior landscape requirements - Design Alternative One.* A minimum of 15 sq. ft. of landscaping for each parking space shall be provided within the interior of an off-street parking area.

10.6.1.3.1.1. Supplemental landscape requirements for Design Alternative One.

10.6.1.3.1.1.1. *Design of mandatory terminal islands.* Each row of parking spaces shall be terminated by landscaped islands which measure not less than 5 feet in width and not less than 18 feet in length. At least one tree shall be planted in each terminal island.

10.6.1.3.1.1.2. *Design of interior islands.* Interior landscape islands may be provided within each row of parking spaces. If interior islands are provided, one interior island shall be provided for each 16 parking spaces or fraction thereof.

10.6.1.3.1.1.3. *Design of divider medians.* Landscaped divider medians may be used to meet interior landscape requirements. If divider medians are used, they shall form a continuous landscaped strip between abutting rows of parking spaces. The minimum width of a divider median shall be 5 feet. One tree shall be planted for each 40 linear feet of divider median, or fraction thereof. Trees in a divider median may be planted singly or in clusters. The maximum spacing of trees shall be 60 feet.

10.6.1.3.1.1.4. *Additional landscape treatment.* All interior landscaped areas not dedicated to trees or to preservation of existing vegetation shall be landscaped with grass, ground cover, shrubs, or other appropriate landscape treatment. Sand or other pavement shall not be considered appropriate landscape treatment.

10.6.1.3.1.1.5. *Curbing requirements.* Mandatory terminal islands shall be surrounded with a continuous, raised curb which meets the standards established in Section 10.6.4. Optional interior islands and divider medians shall be protected from encroachment of motor vehicles as provided in Section 10.6.4. below.

10.6.1.3.2. *Landscaping the interior of off-street parking areas - Design Alternative Two.*

10.6.1.3.2.1. Applicability. Design Alternative Two shall be available only in off-street parking areas in which parking spaces intersect. The parking spaces need not intersect at right angles. If the off-street parking area is designed to have staggered parking spaces, the developer shall use Design Alternative One.

10.6.1.3.2.2. Calculating the number of trees to be planted if design alternative two is selected. One tree shall be planted or preserved for each 9 parking spaces in a vehicular use area for off-street parking.

10.6.1.3.2.3. Supplemental landscape requirements for Design Alternative Two.

10.6.1.3.2.3.1. Design of mandatory terminal islands. Shall be as for 10.6.1.3.1.1.1.

10.6.1.3.2.3.2. Design of interior grade-level tree planting areas. Trees required to be planted by this Section may be distributed throughout the interior of an off-street parking area in any way that encourages adequate shading of parked motor vehicles and visual access. Grade-level tree planting areas shall be located at the common intersection of four parking spaces. The minimum area of a tree planting area shall be 20 sq. ft. The minimum dimensions shall be 4 feet by 5 feet. Trees shall be planted on center at the point of intersection of the four parking spaces. The ground within the tree planting area shall receive appropriate landscape treatment, including mulch or ground cover.

10.6.1.3.2.3.3. Curbing requirements. Shall be as for 10.6.1.3.1.1.5.

10.6.1.4. LANDSCAPING THE INTERIOR OF OTHER TYPES OF VEHICULAR USE AREAS WHICH ARE OPEN TO THE PUBLIC.

10.6.1.4.1. *Minimum interior landscape requirements.* A minimum of 8% of the gross paved area of vehicular use areas which are open to the public but which are not used for off-street parking shall be devoted to interior landscaping. Such vehicular use areas include access roads in planned developments, service stations, stacking lanes at drive-in banks or fast food restaurants, or outdoor retail sales and display areas for new or used motor vehicles.

10.6.1.4.2. *Supplemental landscape requirements.* A minimum of 10% of the gross paved area of vehicular use areas which are open to the public but which are not used for off-street parking shall be devoted to interior landscaping. Landscaping required by this Section may be installed in any manner that provides adequate buffering of vehicular uses. If the landscaped area is moved to the perimeter of the lot, it shall be designed as an integral part of perimeter landscaping. The landscaped area may be designed as a divider median strip. If so, the lineal strip shall be designed to accommodate one tree for each 40 lineal feet of divider median, or fraction thereof.

Sec. 10.6.2. LANDSCAPING THE PERIMETER OF LOTS.

Landscape strips shall be created around the perimeter of lots, as provided in this Section:

10.6.2.1. PERIMETER LANDSCAPE STRIPS SEPARATING VEHICULAR USE AREAS FROM ABUTTING RIGHTS-OF-WAY.

10.6.2.1.1. *General requirements.* Wherever a vehicular use area abuts a dedicated right-of-way, a perimeter landscape strip shall be created which meets the minimum standards established in this Section. The perimeter landscape strip shall extend along the length of the boundary between the right-of-way and the vehicular use area. A perimeter landscape strip may be pierced by access ways to the extent necessary to comply with the provisions of this Chapter, or other applicable requirements. A perimeter landscape strip shall not be required if: (a) the vehicular use area is entirely screened from the view from the right-of-way by buildings or structures; or (b) when the vehicular use area abuts a dedicated alley.

10.6.2.1.2. *Minimum dimensions of perimeter landscape strip.*

10.6.2.1.2.1. Minimum width. Unless otherwise provided for in this Section, the minimum width of the perimeter landscape strip separating a vehicular use area from abutting rights-of-way shall be determined by requirements in Table No. 1.

TABLE No. 1 MINIMUM WIDTH OF PERIMETER LANDSCAPE STRIP:	
a.	b.
WIDTH OF ULTIMATE RIGHT-OF-WAY	MINIMUM WIDTH OF LANDSCAPE STRIP
0 - 99 FEET	10 FEET
100 + FEET	15 FEET

10.6.2.1.3. *Minimum planting requirements.* One tree shall be planted for each 30 linear feet (or fraction thereof) of a perimeter landscape strip separating a vehicular use area from an abutting right-of-way and may be planted single or in clusters. The width of access ways which pierce the strip shall be included in the calculation of lineal dimensions.

10.6.2.1.3.1. Landscape barrier.

10.6.2.1.3.1.1. General. A hedge, wall, fence, berm, or other landscape barrier shall be located within the perimeter landscape strip. Unless otherwise provided for in this Chapter in the case of planted material, the barrier shall be no less than 3 feet and no more than 12 feet in height within a maximum of 2 years after installation.

10.6.2.1.3.1.2. Living and non-living barriers. If walls, fences, or other non-living barriers are used as elements of the landscape barrier, shrubs or vines shall be planted as follows: (a) one shrub or vine shall be planted for each 10 sq. ft. of landscaped barrier; (b) if, upon planting, shrubs or vines are not of sufficient height to be clearly visible above the top of the landscape barrier, the shrubs or vines shall be planted on the street side of the barrier; (c) if, upon planting, shrubs or vines are clearly visible above the top of the barrier, they may be planted inside the barrier.

10.6.2.1.3.1.3. Earth berms. Earth berms may be used only when installed in conjunction with sufficient plant materials to satisfy the provisions of this Chapter. The

slope of a berm shall not exceed a ratio of 3:1 unless used in conjunction with a retaining wall.

10.6.2.2. PERIMETER LANDSCAPE STRIPS SEPARATING A VEHICULAR USE AREA FROM THE INTERIOR LOT LINE OF AN ABUTTING PROPERTY. Every vehicular use area shall be screened from view from abutting properties. Unless this Chapter specifies some other perimeter landscape treatment, a perimeter landscape strip shall be created which meets the following minimum standards:

10.6.2.2.1. *Minimum dimensions.*

10.6.2.2.1.1. Minimum width. The minimum width of the perimeter landscape strip shall be 5 feet.

10.6.2.2.1.2. Minimum length. The perimeter landscape strip shall extend along the length of the boundary between the vehicular use area and the abutting property. The landscape strip may be pierced by accessways as necessary to comply with the requirements of this Chapter or other applicable provisions.

10.6.2.2.2. *Minimum planting requirements.* One tree shall be planted for each 30 linear feet (or fraction thereof) of the perimeter landscape strip.

Sec. 10.6.3. STREETS AND LANDSCAPING IN RIGHTS-OF-WAY.

10.6.3.2. INSTALLATION STANDARDS AND REQUIREMENTS.

10.6.3.2.1. *Planting standards.* Unless otherwise provided in the Chapter, plant material to be utilized shall comply with Sec. 10.6.1.2.

10.6.3.2.2. *Maintaining safe sight distance at intersections and points of access.* Landscaping shall comply with Chapter 12 of the LDR.

10.6.3.2.3. *Placement of plants and landscape material.* The building department shall have the final authority to approve or disapprove the location of plants and landscaping with respect to safe and proper engineering practices. Plants may be permitted within the rights-of-way of streets provided that they comply with the roadside recovery area provision of the State of Florida Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction, and Maintenance of Streets and Highways, (commonly known as the "DOT Green Book"), as amended.

10.6.3.2.4. *Maintenance.* The permittee, or the successor in interest, shall be responsible for the proper maintenance of all landscaping and shall keep the area free from any refuse or debris.

Sec. 10.6.4. CURBING AND ENCROACHMENT OF VEHICLES INTO LANDSCAPE AREAS.

10.6.4.1. CURBING REQUIREMENTS. Except as provided for in paragraph 10.6.4.2., below, all landscape areas shall be separated from vehicular use areas by non-mountable, reinforced concrete curbing of the type characterized as "Type D" in the current edition of the "Roadway and Traffic Design Standards" Manual prepared by the State of Florida Department of Transportation, or curbing of comparable durability.

10.6.4.2. USE OF WHEEL STOPS. All landscaped areas adjacent to off-street parking areas shall be protected from encroachment or intrusion of vehicles through the use of wheel stops. Wheel stops shall be a minimum height of 6 inches above finished grade of the parking area. Wheel stops shall be properly anchored and shall be continuously maintained in good condition. Where wheel stops are located 3 feet from the front of a parking space, that 3 feet need not be paved. However, the area between the wheel stop and the landscape area shall receive appropriate landscape treatment, including planting of grass or ground cover.

10.6.4.3. WIDTH OF CURBING EXCLUDED FROM CALCULATION OF MINIMUM DIMENSIONS OF REQUIRED LANDSCAPE AREAS. The width of curb shall be excluded from the calculation of the minimum dimensions of all required landscape areas.

Sec. 10.6.5. USE OF SITE SPECIFIC PLANTING MATERIALS.

Trees and other vegetation shall be planted in soil and climatic conditions which are appropriate for their growth habits. Plants used in the landscape design pursuant to this Chapter shall to the greatest extent be:

10.6.5.1. Appropriate to the conditions in which they are to be planted;

10.6.5.2. Have non-invasive growth habits;

10.6.5.3. Encourage low maintenance, high quality design; and

10.6.5.4. Be otherwise consistent with the intent of this Section.

Sec. 10.6.6. REPLACEMENT REQUIREMENTS.

Vegetation which is required to be planted or preserved by this Chapter shall be replaced with equivalent vegetation if it is not living within one year of issuance of a certificate of occupancy. Preserved trees for which credit was awarded, which subsequently die, shall be replaced by the requisite number of living trees according to the standards established in Section 10.6.1.

Sec. 10.6.7. PROHIBITED PLANT SPECIES.

10.6.7.1. THE FOLLOWING PLANT SPECIES SHALL NOT BE PLANTED IN THE CITY:

10.6.7.1.1. *Melaleuca quinquenervia* (commonly known as Punk tree, Cajeput, Paper Bark, Melaleuca); or

10.6.7.1.2. *Schinus terebinthifolius* (commonly known as Brazilian Pepper or Florida Holly); or

10.6.7.1.3. *Casuarina* species (commonly known as Austrailian Pine); and

10.6.7.1.4. *Rhodomyrtus tomentosa* (commonly known as Downy Rose Myrtle).

ARTICLE 7 - IRRIGATION DESIGN STANDARDS

Sec. 10.7.1. GENERAL.

For purposes of these guidelines, "permanent irrigation system" shall be defined as: an assembly of component parts, above ground, underground or surface-mounted, supplied with water under pressure through a system of permanently placed irrigation piping, installed with and for the controlled distribution and conservation of water for irrigating any type of landscape vegetation in any location within the City.

Water conservation methods are generally basic in nature but require that attention be paid to the irrigation system, its operation and maintenance. These conservation methods are not served when water is allowed to run down streets or sidewalks during the irrigation process. A system that is turned on in the morning and allowed to operate all day is completely wasteful of a most precious resource since most soil conditions will not absorb a continuous application of water.

For greater efficiency all systems should be operated only at night or during early morning hours. Systems that are operated during the heat of the day are totally ineffective as the evapotranspiration rate is so high that the plant materials receive no benefit. This same principle applies to windy days when an effective spray

pattern cannot be achieved. Systems operated just prior to sundown provide a condition under which molds and other disease can be developed on all vegetation.

Drip irrigation systems are extremely effective in selected areas for water conservation. These systems are generally effective in planter beds, parking islands and boulevard medians, large areas of ground cover and similar planting areas. These systems require special consideration since they cannot be operated on the same zone as other types of sprinkler heads because they drip water on the basis of gallons per hour as opposed to gallons per minute. These systems do require some monitoring to assure that emitters and flow tubes are clean and undamaged.

Automatic rain shut off devices should be considered as a method of conserving water. These devices allow continuation of the irrigation process during short, intermittent showers but will shut down an irrigation system or prevent it from coming on if a predetermined amount of rain falls.

The only water supply for the system design other than potable or community water supply shall be an irrigation well or an approved on-site lake or pond. The owner is responsible for the water supply and its protection.

Sec. 10.7.2. DESIGN ELEMENTS AND CRITERIA.

10.7.2.1. IRRIGATION SYSTEMS installed within the City shall be designed in a manner which will use sound water conservation principles and techniques and will include the following:

10.7.2.1.1. The system shall be designed so as not to water any impervious surfaces, i.e. sidewalks, streets, driveways or patios. A finished design plan is required to show all manufactured components of the working system and site features relevant to proper installation.

10.7.2.1.2. Automatic controls should be a part of the total irrigation system and set with a watering schedule that will not exceed a precipitation rate of 1 ½ to 2 inches per week.

10.7.2.1.3. The system should be regulated and operated in such a manner as to prohibit any surface runoff from excessive watering.

10.7.2.1.4. Sprinkler selection shall be compatible with site conditions, water source and water quality. The system should be designed to not exceed a spacing of 55% of the specified radius of any given head (i.e., 30 foot radius head should be spaced no farther than every 16.5 feet) and be based on established industry practices and plant water requirements.

- 10.7.2.1.5. In turf or areas of low ground cover the system should use underground pop-up sprinklers.
- 10.7.2.1.6. The system should contain separate watering zones based on the types of sprinkler heads used and areas to be watered. For example turf zones should not be on the same zone as shrubs or planters, as turf requires more water. Likewise heads should not be mixed i.e., spray heads and impacts, impacts and rotors, sprays and bubblers due to the effectiveness and amounts of water that are used by each type of head.
- 10.7.2.1.7. Main line and circuit line pipe shall conform to acceptable ASAE hydraulic standards in regard to friction pressure loss and velocity of flow. The design water velocity in a pipeline, when operating at system capacity, should not exceed 5 feet per second unless special considerations are given to the control of surge or water hammer and adequate protection from these pressures is provided.
- 10.7.2.1.8. Pressure reducing valves shall be placed on lines where sprinkler heads are installed with higher than factory specified pressures. Sprinkler heads operated on higher than recommended pressure usually mist and are ineffective.
- 10.7.2.1.9. A backflow prevention device shall be installed on all irrigation systems connected to potable water sources as required by the LDR and State law.
- 10.7.2.1.10. *Cross Connections:*
- 10.7.2.1.10.1. Because of the danger of contaminating potable water supplies, the design and installation of irrigation systems and yard sprinkler systems which incorporate connections to alternate potable and nonpotable water supplies are not recommended and are discouraged unless absolutely necessary.
- 10.7.2.1.10.2. Schedule 40 pipe between the water meter and backflow preventor is required.
- 10.7.2.1.10.3. Where an irrigation or yard sprinkler system is designed to have alternate water supplies, a potable and nonpotable water supply, an installer shall comply with one of the following:

10.7.2.1.10.3.1. Provide for a complete absence of pipe between the two water supplies (i.e., air gap);

10.7.2.1.10.3.2. Make no connection of the two water supplies to each other; and

10.7.2.1.10.3.3. Make impossible the simultaneous connection of both water supplies to the irrigation system or yard sprinkler.

10.7.2.1.10.4. Any type of injector system requires a reduced pressure backflow preventor.

10.7.2.1.11. *Installation:*

10.7.2.1.11.1. Pipe installation - The manufacture's specifications covering installation of its material underground shall be followed. This shall apply to thrust blocking, handling, storage, minimum depth of cover, and testing.

10.7.2.1.11.1.1. Piping under constant pressure must be Schedule 40.

10.7.2.1.11.2. Depth - Minimum depth of cover over all piping shall be 6 inches or three times the nominal pipe size or a sufficient depth to accommodate valves and other equipment, whichever is greater. All work shall be performed in accordance with established industry standards for all materials and methods employed.

10.7.2.1.11.2.1. Backfill - The compaction of backfill shall be sufficient to eliminate any settlement of the trench or pipe.

10.7.2.1.11.2.2. Backfill Material - Shall be clean soil or sand free from large stones or other unsuitable material, i.e. vegetation or acidic materials.

10.7.2.1.11.3. Piping shall be thoroughly flushed and tested before the installation of sprinkler equipment.

10.7.2.1.11.4. Automatic control valves installed underground shall be installed with a valve box. Valves shall be installed in accordance with the manufactures' recommendations and with enough clearance for proper operation and maintenance.

Manual control valves shall be installed, with access for proper use, maintenance and repair.

10.7.2.1.11.5. Where pipes are installed under roads sleeves must be installed. Any damage to improvements on public right-of-way must be repaired prior to final approval and signed off by the City Utility Department.

10.7.2.1.11.6. Control lines shall be at least the minimum size recommended by the automatic equipment manufacturer and shall be ULS listed for underground direct burial use. All connections and splices shall be by an approved method for underground use. Allowance shall be made for thermal contraction of the control lines. Control tubing shall be flushed prior to connection to the valve and/or automatic controller. Control wire shall have minimum cover of 6 inch and a 12 inch loop at the valve to facilitate servicing.

10.7.2.1.11.6.1. The automatic controller shall be mounted in a manner recommended by the manufacturer and at the location called for on the plans as approved by the Owner. The Owner shall provide electrical power to the controller location in accordance with the manufacturers specifications unless noted otherwise on the plans.

10.7.2.1.11.6.2. All electrical wire and components shall comply with the City Electrical Code.

ARTICLE 8 - PLANT MATERIAL AND INSTALLATION STANDARDS

Sec. 10.8.1. GENERAL.

10.8.1.1. MINIMUM REQUIREMENTS. The following standards shall be considered the minimum requirements for the installation of all landscaping within the City.

10.8.1.2. STANDARDS AND INSPECTIONS. All landscaping shall be installed in a sound workmanlike manner and according to accepted and proper planting procedures with the quality of plant materials as hereinafter described.

Sec. 10.8.2. PLANT QUALITY STANDARDS.

Unless otherwise provided for in the Chapter, plant material to be utilized shall comply with Sec. 10.6.1.2.

Sec. 10.8.3. PLANT BALL SIZES.

Ball sizes on all transplanted plant materials shall conform to, or exceed, the minimum standards as noted in the most current edition of "Grades and Standards for Nursery Plants, Part I and II", prepared by the State of Florida Department of Agriculture and Consumer Services.

Sec. 10.8.4. USE OF MULCHES.

10.8.4.1. GENERAL. The use of organic mulches reduce the growth of weeds and add nutrients to the soil, as well as retain moisture over the roots zones of plant materials.

10.8.4.1.1. *Application specifications.* In order to preserve soil moisture, at least 2 inches of clean, weed free mulch should be maintained over all appropriate planting areas at all times. The required mulch layer shall be maintained on all landscape projects larger than one acre.

10.8.4.1.2 *Types of mulch.* The use of pine, rather than cypress (or other valuable species) mulch is encouraged. The required mulch layer shall be installed on all landscape projects larger than one acre.

ARTICLE 9 - MAINTENANCE STANDARDS FOR CULTIVATED LANDSCAPE AREAS

Sec. 10.9.1. GENERAL.

The owner of land subject to this Chapter shall be responsible for the maintenance of said land in good condition so as to present a healthy appearance; and said land shall be kept free from refuse and debris.

Sec. 10.9.2. MOWING.

Grass shall be mowed as necessary in order to encourage deep root growth and, therefore, the preservation of irrigation water.

Sec. 10.9.3. WATERING.

10.9.5.1. GENERAL. All watering of planted areas shall be conducted according to the Water Management District rules.

Sec. 10.9.4. STREET RIGHT-OF-WAY MAINTENANCE.

10.9.4.1. GENERAL. All grassed areas of street right-of-ways and public walkways within the corporate limits shall be mowed a minimum of 2 times per calender year.

10.9.4.2. WEED CONTROL. Chemical applications for weed control in the right-of-ways and public walkways shall occur a minimum of one time per calender year.

10.9.4.3. PRUNING. Shrubs and trees located within the right-of-ways and public walkways shall be trimmed and pruned a minimum of one time per calender year when necessary for maintaining visibility.

ARTICLE 10 - LANDSCAPE CREDIT.

Sec. 10.10.1. GENERAL.

Existing trees may be credited towards minimum tree planting requirements (Sec. 10.6.1.) according to the formula in Table No. 2. Fractional measurements shall be attributed to the next lowest category.

TABLE NO. 2

CALCULATION OF TREE PRESERVATION CREDITS			
EXISTING CROWN SPREAD OF PRESERVED TREES CREDITS	or	DIAMETER OF TREE AT 4.5 FEET ABOVE NATURAL GRADE	= NUMBER OF TREES
90 feet or greater	or	36 inches or greater	= 7
60 to 89 feet	or	30 to 35 inches	= 6
50 to 59 feet	or	26 to 29 inches	= 5
40 to 49 feet	or	20 to 25 inches	= 4
30 to 39 feet	or	13 to 19 inches	= 3
20 to 29 feet	or	8 to 12 inches	= 2
10 to 19 feet	or	2 to 7 inches	= 1
less than 10 feet	or	less than 2 inches	= 0

Sec. 10.10.2. TREES EXCLUDED FROM PRESERVATION CREDIT.

10.10.2.1. NO CREDIT SHALL BE GIVEN FOR TREES THAT:

- 10.10.2.1.1. Are not located within the immediate area of the property (buffer area, parking lot, etc.) for which trees are required by this Chapter.
- 10.10.2.1.2. Are not properly protected from damage during the construction process, as provided in Sec. 10.4.3.
- 10.10.2.1.3. Are prohibited or controlled species identified in Sec. 10.6.7.
- 10.10.2.1.4. Are dead, dying, diseased or infested with harmful insects.
- 10.10.2.1.5. Are located in recreation tracts, golf courses or similar subareas within planned developments which are not intended to be developed for residential, nonresidential use.

ARTICLE 11 - LANDSCAPE PLAN REQUIRED.

Sec. 10.11.1. GENERAL.

Prior to the issuance of any building permit or paving permit, a landscape plan shall be submitted to, reviewed by, and approved by the building department.

Sec. 10.11.2. NATURE OF REQUIRED PLAN.

10.11.2.1. SINGLE FAMILY DETACHED OR DUPLEX DWELLING: The landscape plan submitted for an individual single family detached or duplex dwelling on its own lot may be in the form of a plot plan or drawing prepared by the owner or their agent.

10.11.2.2. ALL OTHER DEVELOPMENT: The landscape plan for all other development shall be prepared by and bear the seal of a Landscape Architect; or otherwise be prepared by persons authorized to prepare landscape plans or drawings by Chapter 481, Part 11, (Landscape Architecture) of Florida Statutes. Plans may be prepared by other legally qualified persons, such as:

10.11.2.2.1. Architects, where applicable;

10.11.2.2.2. Engineers, where applicable;

10.11.2.2.3. Nurserymen;

10.11.2.2.4. Nursery stock dealers; and

10.11.2.2.5. Nursery agents.

Sec. 10.11.3. CONTENTS OF LANDSCAPE PLANS.

10.11.3.1. THE LANDSCAPE PLAN SHALL:

10.11.3.1.1. Be drawn to scale, including dimensions and distances;

10.11.3.1.2. Delineate the existing and proposed parking spaces, or other vehicular areas, access aisles, driveways and similar features;

10.11.3.1.3. Indicate the location of sprinklers or water outlets;

10.11.3.1.4. Designate by name and location the plant material to be installed or preserved in accordance with the requirements of this Chapter.

10.11.3.1.5. Identify and describe the location and characteristics of all other landscape materials to be used;

10.11.3.1.6. Show all landscape features, including areas of vegetation required to be preserved by law, in context with location and outline of

existing and proposed buildings and other improvements upon the site, if any;

10.11.3.1.7. Include tabulation clearly displaying the relevant statistical information necessary for the building department to evaluate compliance with the provisions of this Chapter. This includes gross acreage, area of preservation areas, number of trees to be planted or preserved, square footage of paved areas, and such other information as the building department may require: and

10.11.3.1.8. Contain such other information that may be required by the building department that is reasonable and necessary to a determination that the landscape plan meets the requirements of this Chapter.