

Sponsored By: Garrett
Planning Commission Public Hearing Date: June 26, 2023
City Council Public Hearing Date: August 8, 2023
September 12, 2023
Enactment Date: September 12, 2023

**CITY OF MARATHON, FLORIDA
ORDINANCE 2023-19**

AN ORDINANCE OF THE CITY OF MARATHON, FLORIDA, AMENDING CHAPTER 107, ARTICLE 8 ENTITLED “LANDSCAPING” OF THE CITY OF MARATHON LAND DEVELOPMENT REGULATIONS; PROVIDING FOR THE REPEAL OF ALL CODE PROVISIONS AND ORDINANCES INCONSISTENT WITH THIS ORDINANCE; PROVIDING FOR SEVERABILITY; PROVIDING FOR INCLUSION IN THE CODE; PROVIDING FOR THE TRANSMITTAL OF THIS ORDINANCE TO THE STATE DEPARTMENT OF ECONOMIC OPPORTUNITY; AND PROVIDING FOR AN EFFECTIVE DATE UPON THE APPROVAL OF THIS ORDINANCE BY THE DEPARTMENT OF ECONOMIC OPPORTUNITY IN ACCORDANCE WITH STATE LAW.

WHEREAS, the City of Marathon (the "City") has adopted a Comprehensive Plan which has been found to be in compliance by the State Department of Economic Opportunity ("DEO"), pursuant to Chapters 163 and 380, Florida Statutes; and

WHEREAS, a Florida-Friendly Landscape promotes the conservation of water by the use of site adapted plants and efficient watering methods which generally results in a long-term reduction of irrigation, fertilizer, and pesticide requirements, costs, energy, and maintenance; and

WHEREAS, a Florida-Friendly Landscape encourages a reduction of total energy expenditures such as water pumping and treatment, manufacture and shipping of fertilizers, insecticide, and other gardening chemicals, operation and maintenance of mowers, edgers, blowers and other combustion based yard equipment, as well as labor; and

WHEREAS, community-wide Florida-Friendly Landscape efforts are designed to save significant amounts of water to preserve local water supplies such that cumulative benefits may reduce or postpone the need for community potable water supply expansion; and

WHEREAS, The Florida Legislature enacted Florida Statutes, Chapter 481, Part II and the Board of Landscape Architecture adopted Rule 61-G-10 Florida Administrative Code, which defines and regulates the practice of landscape architecture; and

WHEREAS, the City does not want to unduly constrain development within the City of Marathon, so long as the growth is managed and environmentally appropriate; and

WHEREAS, the City Council finds it necessary, desirable, and proper to adopt the amendments to the Land Development Regulations corresponding to a similar amendment to the City’s Comprehensive Plan to reflect changing conditions, pursuant to Sections 163.3191 and 163.3178(2)(f) Florida Statute.; and

WHEREAS, this Ordinance, thus passed at its second reading, shall be transmitted to DEO for review and approval,

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MARATHON, FLORIDA THAT

~~Strikethrough~~ = deletion **bold underline** = addition

SECTION 1. The above recitals are true, correct, and incorporated herein by this reference.

SECTION 2. Amend the Land Development regulations, Chapter 107, “General Development Standards,” Article 8, “Landscaping,” as depicted in Exhibit A.

SECTION 3. The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this Ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this Ordinance but they shall remain in effect, it being the legislative intent that this Ordinance shall stand notwithstanding the invalidity of any part.

SECTION 4. The provisions of this Ordinance constitute an amendment to the Land Development Regulations as defined by State law. Accordingly, the City shall forward a copy of this Ordinance to the Department of Economic Opportunity for review and approval pursuant to Sections 380.05(6) and (11), Florida Statutes.

SECTION 5. This Ordinance shall be effective immediately upon approval by the Department of Economic Opportunity pursuant to Chapters 163 and 380, Florida Statutes.

ENACTED BY THE CITY COUNCIL OF THE CITY OF MARATHON, FLORIDA, THIS 12TH DAY OF SEPTEMBER, 2023.

THE CITY OF MARATHON, FLORIDA

Luis Gonzalez, Mayor

AYES:

NOES:

ABSENT:

ABSTAIN:

¹Additions to existing text are shown by underline/red print; deletions are shown as ~~strikethrough~~

ATTEST:

Diane Clavier, City Clerk

**APPROVED AS TO FORM AND LEGALITY FOR THE USE
AND RELIANCE OF THE CITY OF MARATHON, FLORIDA ONLY:**

Steven Williams, City Attorney

ARTICLE 8. LANDSCAPING

[Section 107.63. - Purpose and Intent.](#)

[Section 107.64. - General Criteria.](#)

[Section 107.65. - Site Interior Landscaping.](#)

[Section 107.66. - Parking Area Landscaping.](#)

[Section 107.67. - Foundation Planting Requirements.](#)

[Section 107.68. - Plant Material Specifications and Plant List.](#)

[Section 107.69. - Landscape Plans.](#)

[Section 107.70. - Landscape Buffer Requirements.](#)

[Section 107.71. - Streetscape Treatment Types.](#)

[Section 107.72. – Residential Requirements](#)

[Section 107.73. - Alternative Compliance.](#)

Section 107.63. Purpose and Intent.

It is the purpose and intent of these regulations to establish minimum standards for the design, layout, installation and continued maintenance of landscaping. The overall character of the landscape of the City development shall be based on the enhancement of the pedestrian quality of the environment through landscape vegetation and the promotion of local and regional qualities through preservation of existing vegetation, ~~and use of native species, energy conservation, aesthetics, privacy and the use of Low Impact Development strategies.~~ It is furthermore, the purpose and intent of these regulations to promote energy efficiency and water conservation through the use of site adapted and appropriate, native plants and efficient landscape irrigation systems and watering practices, which may, in turn, result in long-term reductions in the use of fertilizers, pesticides, energy, maintenance, and the associated costs for the citizens of the City. ~~The installation of only drought resistant, locally adapted and native plant materials is highly desirable and preferred.~~

Section 107.64. General Criteria.

- A. *Existing Vegetation:* All areas of the site shall be appropriately landscaped except those areas to be maintained in their natural condition.
 1. The developer or builder may elect to selectively remove dead or non-native vegetation from such natural areas.
 2. All development shall be planned and sited to preserve existing trees and vegetation to the greatest extent practicable.
- B. *Temporary Construction Fencing/Tree Barricades:* Temporary construction fencing shall be installed according to [Section 106.08.](#) ~~Standard forestry practices and as set forth herein~~ for all existing trees and vegetation to be preserved prior to any site work. Such fencing shall be maintained intact throughout the construction period.
- C. *Site Soils:*

1. Proper soil management techniques shall be used to provide viable, high-quality plant growing and living conditions for all vegetative materials. All planting soils shall include amendments to improve permeability, drainage, water retention, and provide proper nutrients.
 2. All plantings shall be in accordance with the rules and guidelines of the Florida Keys Exotic Invasive Task Force.
- D. *Irrigation*: Sufficient irrigation, as acceptable to the Director in accordance with the landscape plan design of the area, and the requirements of the plant material to be used, shall be supplied to all landscaped areas, pursuant to the requirements of [Section 107.69](#). When required, irrigation systems shall be installed to provide coverage to target areas, they shall be installed in such a manner as to minimize spray upon public sidewalks, streets ~~or~~, adjacent properties and impervious surfaces. Irrigation systems, compatible with ~~landscaping~~ Florida Friendly Landscaping principles, shall be ~~encouraged~~ required. This may preclude permanent irrigation entirely, or may include the use of low volume, low pressure, subsurface irrigation systems, and other such methods which encourage water conservation. All automatic lawn or landscape irrigation systems shall be equipped with and operate a moisture sensor or approved automatic switch which overrides the irrigation cycle when adequate rainfall has occurred.
- E. *Mangroves*:
1. *Authority*: Mangrove trimming and removal requires a permit from the Florida Department of Environmental Protection.
 2. *Standards for Trimming*: Mangrove trimming shall be performed in accordance with Fla. Stat. §§ 403.9321—403.9334.
 3. *Supervision*: All mangrove trimming or removal shall be directly supervised by a person certified by Florida DEP or a registered landscape architect.

~~F. *Landscaping for Energy Conservation*: When preparing a landscape plan, consideration shall be given to the proper selection and placement of trees and plant species near buildings to minimize building heating and cooling requirements. When located appropriately, trees and plants of adequate size, quality, canopy, and form can decrease energy consumption in buildings. With appropriate design and planning, landscape materials can cast shade, channel winds, and reduce moisture near buildings. For example, plants that cast shadows over east- and west-facing walls during the summer can greatly reduce the heat load on a building.~~

Section 107.65. Site Interior Landscaping.

- A. *Percentage Required*: ~~Unless otherwise approved by the Director, a~~ minimum of 25 percent of the total developed area of any parcel or property shall be devoted to landscape. Landscape planting for paved areas and tree credit and replacement criteria shall comply with the minimum requirements of the City Land Development Regulations. Parking area landscaping (Sec. 107.66) is considered part of site interior landscaping.
- B. *Protection*: ~~All landscaped areas adjacent to vehicular use areas shall be protected from vehicle encroachment by curbing or wheel stops.~~ Low Impact Development (LID) Design Requirement: All site interior landscaping shall be incorporated into and be an integral component of the overall stormwater management of a site; the two shall be designed to compliment one another in order to provide maximum environmental benefit by mimicking the natural water cycle and natural site drainage features, providing effective rainfall retention, pollutant removal and water infiltration. Such design practices may include, but not be limited to: vegetated filter strips, planter boxes, bioretention areas (raingardens/ bioswales), rain barrels and cisterns, dry and wet retention basins, infiltration systems and dry wells, pervious materials, constructed wetlands or a combination thereof. This standard shall apply to all development in the City, including single-family residential.

Section 107.66. Parking Area Landscaping.

- A. *Parking Area Design*: Parking areas shall be landscaped as follows: in one (1) of the following ways:
 1. With ~~canopy~~ large and medium trees that will provide a minimum of 50 percent tree canopy coverage of the paved parking areas within 20-15 years as demonstrated by a canopy coverage study conducted by a registered landscape architect and submitted to the City Biologist for review ~~or~~.

2. With interior landscaped islands containing ~~canopy~~ trees at an average of every seven (7) parking spaces not to exceed a maximum of ten (10) parking spaces without a treed island,
 - i. Interior landscape islands shall comply with the design requirements listed in Table 107.66.1; shall comply with Section 107.68 and Table 107.70.4
 - ii. Interior landscape islands shall contain at least one (1) large tree and shall comply with Section 107.68 and Table 107.70.4.
3. and w~~With linear landscaped islands with containing canopy trees between head-to-head parking spaces.~~
 - i. Linear landscape islands shall comply with the design requirements listed in Table 107.66.1; shall comply with Section 107.68 and Table 107.70.4.
 - ii. Linear landscape islands shall contain at least one (1) large tree for every 30 linear feet and shall comply with Section 107.68 and Table 107.70.4.
4. Terminal Island Required: A terminal island shall be provided at the end of each parking area rank adjacent to the travel lanes or parking aisle serving the parking rank.
 - i. Terminal landscape islands shall comply with the design requirements listed in Table 107.66.1; shall comply with Section 107.68 and Table 107.70.4.
 - ii. Terminal islands shall contain at least one (1) large tree and shall comply with Section 107.68 and Table 107.70.4.
5. Perimeter Islands Required: Screening shall be provided at the perimeter of all parking areas .
 - i. Perimeter landscape islands shall comply with the design requirements listed in Table 107.66.1; shall comply with Section 107.68 and Table 107.70.4.A
 - ii. In addition to the above, the following options shall be utilized in designing perimeter parking landscaping:
 1. Option 1: A continuous shrub hedge, installed at a minimum height at installation of four (4) feet from existing grade at the adjacent pavement.
 2. Option 2: A continuous shrub hedge and berm combination shall be a minimum height at installation of four (4) feet in height from existing grade at the adjacent pavement. This option shall be utilized only when integral to the site's stormwater management system and as part of the LID requirement in Section 107.65.C.
 3. Option 3: A continuous shrub hedge and swale combination shall be a minimum height at installation of four (4) feet from existing grade at the adjacent pavement. This option shall be utilized only when integral to the site's stormwater management system and as part of the LID requirement in Section 107.65.C..
 4. Walls or fences consistent with the architectural character of the surrounding buildings may be used with the above screening options provided they are in combination with landscape planting that enhances the character of the structures, is continuous and allows for pedestrian connectivity to and from the site and any adjacent right of ways
 - iii. Exception: when the above requirements coincide with the installment of a Project boundary buffer or Streetscape treatment type, the Project boundary buffer and/or Streetscape Treatment type may be counted toward the required perimeter screening of a

parking area in 1-4, above. Nothing in this exception shall preclude the application of principles cited in Section 107.64.F, 107.65.B.

6. Substitutions of the parking area minimum landscape materials may be permitted if it can be shown that the intent of 107.66.A.1 is not diminished. All substitutions shall be prescribed from Table 107.66.1

Table 107.66.1

Site Interior Landscape Element Design Requirements

<u>Island Type</u>	<u>Width</u>	<u>Length</u>	<u>Minimum Plantings</u>	<u>Landscape Buffer Possible Substitutes</u>	<u>Substitute Equivalents</u>	
					<u>Option 1</u>	<u>Option 2</u>
<u>Terminal</u>	<u>12 feet</u>	<u>18 feet</u>	<u>1 Large tree</u>	<u>None</u>	<u>N/A</u>	<u>N/A</u>
<u>Linear</u>	<u>8 feet</u>	<u>varies</u>	<u>1 Large tree every 30 feet</u>	<u>30% Large trees</u>	<u>2 Medium Trees</u>	<u>6 Medium Palms</u>
<u>Interior</u>	<u>9 feet</u>	<u>18 feet</u>	<u>1 Large tree</u>	<u>50% Large trees</u>	<u>2 Medium Trees</u>	<u>N/A</u>
<u>Perimeter</u>	<u>10 feet</u>	<u>varies</u>	<u>1 Large tree every 30 feet</u>	<u>30% Large trees</u>	<u>2 Medium Trees</u>	<u>6 Medium Palms</u>

The width of the landscape islands shall be no less than the width of an approved parking space. The width of the linear landscape islands shall be no less than one half (1/2) the width of a parking space. For parking widths standards, see Section 107.52. Canopy trees for the linear landscape island shall have the trees spaced at no more than an average of 30 feet on centers. Notwithstanding the foregoing, all landscape planting islands shall be planted with a minimum of one (1) native canopy tree.

7. In addition to the requirements listed in table 107.66.1, all parking area landscape island types shall be planted with a combination of shrubs and groundcovers installed in a manner to protect tree planting areas from uninhibited access and soil compaction while providing strategic pedestrian circulation through and between parking ranks and landscape islands.
8. All parking area landscape island types shall be designed and maintained in order to provide a 'clear zone' between approximately three (3) and seven (7) feet above adjacent parking area grade.
9. -All landscape island dimensions and area calculations are to be taken from inside of curb faces or edge of pavement, whichever is less. An exception may be considered for adjacent pervious areas that are specifically designed to be accessed by a tree's root system; such areas shall be shown during design to have a direct sub surface connection, this may include installation of structural soils, root paths or a combination thereof to achieve a sustainable path for a tree's root system.
10. Protection: All landscaped island areas adjacent to parking ranks and spaces shall be protected from vehicle encroachment by curbing and/or wheel stops.
11. All lighting shall be designed and installed so as to avoid conflicts with landscape. Lighting should be designed to be below the height of the bottom of the proposed mature tree canopy.
12. Preservation of Existing Trees: The Director, at the time of final site plan approval, may reduce the frequency or number of landscape islands, may eliminate the requirement for a linear landscape island between head-to-head parking rows or approve reduced widths of landscape islands for the purpose of preservation of existing tree canopy and tree clusters in order to maintain a 50 percent tree canopy coverage of the parking area within 15 years as demonstrated by the canopy coverage study.

~~Canopy Tree Spacing: Canopy trees spaced along the perimeters of the parking areas shall be spaced a maximum of 30 feet on center and in no case shall the width of this perimeter buffer be less than one half (½) the width of a parking space.~~

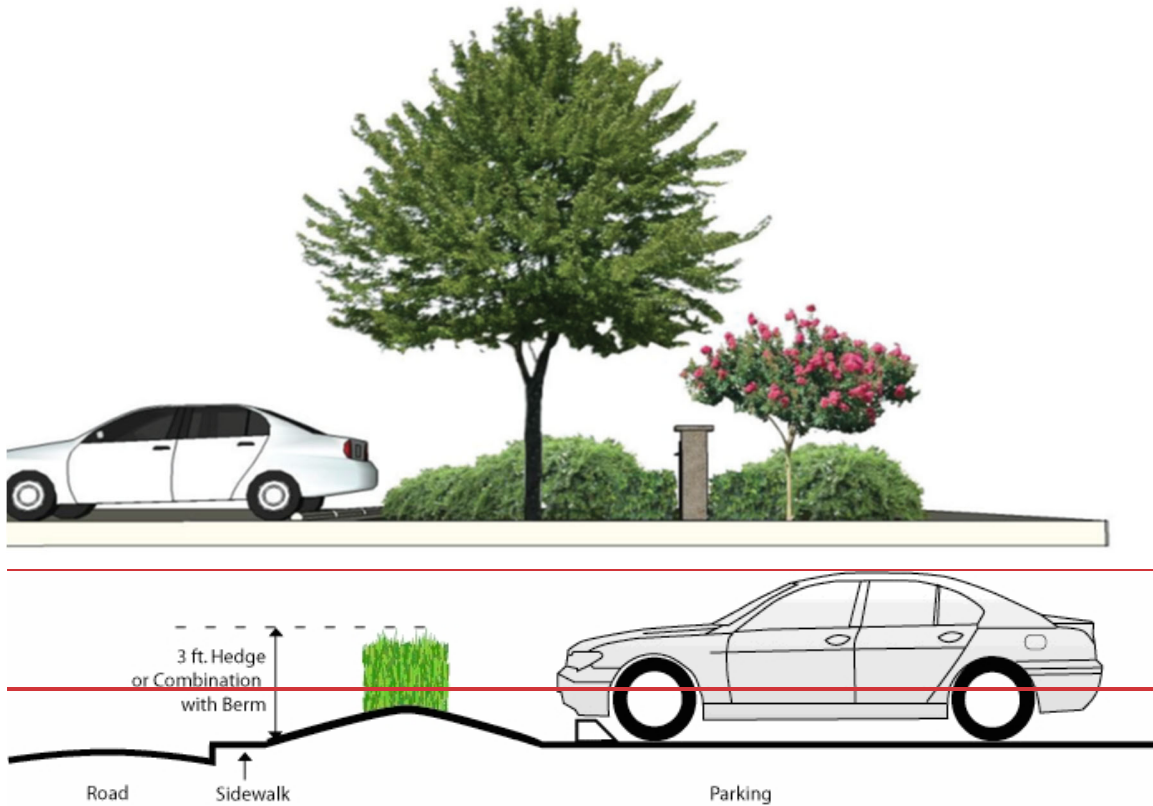
~~B. Preservation of Existing Trees: The Director, at the time of final site plan approval, may reduce the frequency or number of landscape islands, may eliminate the requirement for a linear landscape island between head-to-head parking rows or approve reduced widths of landscape islands for the purpose of preservation of existing tree canopy and tree clusters in order to maintain a 50 percent tree canopy coverage of the parking area within 20 years as demonstrated by the canopy coverage study.~~

~~C. Terminal Island Required: A terminal island shall be provided at the end of each parking area rank adjacent to the travel lanes or parking aisle serving the parking rank.~~

~~D. Percentage of Native Trees Established: Tree plantings utilized for the above requirements shall be 75 percent tree species selected from the City's native large tree list.~~

~~E. Visual Screening Required: A continuous hedge or combination hedge and earth berm shall be provided between the parking area and all adjacent rights-of-way. The hedge and hedge-berm combination is required to obtain three (3) feet in height to visually screen the parking area from the right-of-way. Walls or fences consistent with the architectural character of the surrounding buildings may be used for this screening provided they are in combination with landscape planting that enhances the character of the structures and is continuous.~~

Figure 107.66.1
Parking Screening



Section 107.67. Foundation Planting Requirements.

For all nonresidential and multi-family buildings, a landscape area shall be provided around ~~the base of~~ all freestanding buildings. ~~The landscape area shall be a minimum of five (5) feet wide and be located within, equal to ten (10) feet from the structure/facade. At a minimum, there shall be a combination of two (2) medium and five (5) small shrubs and one (1) canopy tree, medium tree, or one (1) large palm -or two (2) medium palms for every 15 feet of cumulative facade perimeter and shall be evenly distributed. The height of the planted material shall be in relation to the height of the adjacent facade or wall. The cumulative minimum plantings may be grouped along select building facades when installation of landscape relates to building orientation and promotes energy efficiency, active or passive cooling, wind protection or reduction of heat island effects. Attention shall also be given to arrival areas, entrances, pedestrian walks, seating areas, and courtyards of all buildings. A planting approach shall use two (2) or three (3) layered plantings to enhance and announce the building entry. When the foundation planting requirements coincide with perimeter parking required in Section 107.66.A.5, the perimeter parking may be counted toward the required foundation planting requirements of this Section. Nothing in this exception shall preclude the application of principles cited in Section 107.64.F, 107.65.B.~~

Section 107.68. Plant Material Specifications and Plant List.

A. *General:* The following specifications shall be utilized for all landscape materials on the project site.

1. The quality of plant material shall meet or exceed Florida Number One as defined in "Grades and Standards for Nursery Plants," Part 1 and Part 2" published by the State of Florida, Department of Agriculture and Consumer Services, 1998 or current edition.
- ~~2.~~ All plant materials must be suitable to the South Florida area, specifically the Florida Keys' climate and soil conditions. All plant species shall be either native species, or non-invasive non-native species. Species that meet the "drought tolerant" or "very drought tolerant" categories of "Waterwise" by South Florida Water Management District shall comprise 75 percent of the required trees of each project. ~~Xeriscaping-Florida-Friendly Landscape~~ techniques, as required in Subsection [107.69](#) D. of this chapter, shall be utilized to minimize water consumption.

B. *Trees:*

1. All required trees must ~~meet the minimum ranges for spacing, caliper, height and canopy spread as listed in Table 107.70.4~~ be a minimum two (2) inches diameter caliper, at breast height, per Florida Grades and Standards at time of planting. A minimum of 75 percent of required large trees adjacent to the major right-of-way and within parking areas shall be from the required City native canopy trees list. ~~Table 107.68.1 provides representative examples of native trees and vegetation for landscaping. For a complete list contact the City Biologist.~~
- ~~2.~~ Tree spacing shall be determined by species type and approved by the City Biologist. Large trees shall not be planted closer than 3.5 feet from any permanent hardscape or building. Large trees shall be provided a minimum of 300 square feet of immediately accessible soil area for root growth. Up to twenty five percent (25%) of this planned soil area for root growth can be shared with another tree's planned soil area for root growth. See [107.66.F](#)
- ~~2.3.~~ Medium trees shall not be planted closer than 2 feet from any permanent hardscape or building. Medium trees shall be provided a minimum of 150 square feet of immediately accessible soil area for root growth. Up to twenty five percent (25%) of this planned soil area for root growth can be shared with another tree's planned soil area for root growth. See [107.66.F](#)

C. *Shrubs and Hedges/Groundcovers:* Plant materials utilized to provide a continuous screen of hedges shrubs must be a minimum of ~~18-24~~ inches high above grade upon planting, with a maximum spacing of two (2) feet on center. See [107.66.A.6](#). All plant materials utilized for this screening must attain at least 50 percent visual blockage within two (2) years. ~~A minimum of 75 percent of required shrubs and groundcovers shall be from Table 107.68.1.~~

- D. *Mulch*: Natural mulch shall be used in all planting areas. The use of cypress mulch is discouraged. The Department may allow substitutions of other mulch types on a case by case basis.

Table 107.68.1
Native Plant Materials

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
<u>LARGE TREES</u>	
<u>Bursera simaruba</u>	<u>Gumbo Limbo</u>
<u>Clusia rosea</u>	<u>Pitch Apple</u>
<u>Conocarpus erectus</u>	<u>Buttonwood</u>
<u>Coccoloba uvifera</u>	<u>Sea Grape</u>
<u>Ficus citrifolia</u>	<u>Short Leaf Fig</u>
<u>Lysiloma latisiliquum</u>	<u>Lysiloma</u>
<u>Mastichodendrom foetidissimum</u>	<u>Mastic</u>
<u>Piscidia piscipula</u>	<u>Jamaican Dogwood</u>
<u>Simarouba glauca</u>	<u>Paradise Tree</u>
<u>Swietenia mahagoni</u>	<u>Mahogany</u>
<u>MEDIUM TREES</u>	
<u>Amyris elemifera</u>	<u>Torchwood</u>
<u>Ardisia escallonoides</u>	<u>Marlberry</u>
<u>Bourreria succulenta</u>	<u>Strongbark</u>
<u>Canella winterana</u>	<u>Cinnamon Bark</u>
<u>Conocarpus erectus 'sericeus'</u>	<u>Silver Buttonwood</u>
<u>Chrysophyllum oliviforme</u>	<u>Satinleaf</u>
<u>Coccoloba diversifolia</u>	<u>Pigeon Plum</u>
<u>Cordia sebestena</u>	<u>Orange Geiger</u>
<u>Guapira discolor</u>	<u>Bolly</u>
<u>Guaiacum sanctum</u>	<u>Lignum Vitae</u>
<u>Krugiodendrom ferreum</u>	<u>Black Ironwood</u>
<u>Myrcianthes fragrans</u>	<u>Simpson Stopper</u>
<u>LARGE SHRUBS</u>	
<u>Acacia choriophylla</u>	<u>Cinnecord</u>
<u>Capparis cynophallophora</u>	<u>Jamaican Caper</u>
<u>Calyptranthes pallens</u>	<u>Spicewood</u>
<u>Citharexylum spinosum</u>	<u>Fiddlewood</u>
<u>Conocarpus erectus 'sericeus'</u>	<u>Silver Buttonwood</u>
<u>Eugenia axillaris</u>	<u>White Stopper</u>
<u>Eugenia confusa</u>	<u>Red Berry Stopper</u>
<u>Eugenia foetida</u>	<u>Spanish Stopper</u>
<u>Eugenia rhombea</u>	<u>Red Stopper</u>
<u>Foresteriera segregata</u>	<u>Florida Privet</u>
<u>Genipa clusifolia</u>	<u>Seven Year Apple</u>
<u>Gymnanthes lucida</u>	<u>Crabwood</u>

<u>Rapanea punctata</u>	<u>Myrsine</u>
<u>Schaefferia frutescens</u>	<u>Florida Boxwood</u>
<u>MEDIUM SHRUBS</u>	
<u>Brysonima lucida</u>	<u>Locust Berry</u>
<u>Chrysobalanus icaco</u>	<u>Cocoplum</u>
<u>Duranta repens</u>	<u>Golden Dew Drop</u>
<u>Erithalis fruticosa</u>	<u>Black Torch</u>
<u>Hamelia patens</u>	<u>Firebush</u>
<u>Pithecellobium keyense</u>	<u>Florida Keys Blackbead</u>
<u>Psychotria nervosa</u>	<u>Wild Coffee</u>
<u>Randia aculeata</u>	<u>Indigo Berry</u>
<u>Suriana maritima</u>	<u>Bay Cedar</u>
<u>SMALL SHRUBS</u>	
<u>Argusia gnaphalodes</u>	<u>Sea Lavender</u>
<u>Callicarpa americana</u>	<u>Beauty Berry</u>
<u>Chiococca alba</u>	<u>Snowberry</u>
<u>Jacquinia keyensis</u>	<u>Joewood</u>
<u>Lantana involucrata</u>	<u>White Lantana</u>
<u>Psychotria ligustrifolia</u>	<u>Dwf. Wild Coffee</u>
<u>Savia bahamensis</u>	<u>Maiden Bush</u>
<u>Senna mexicana 'chapmanii'</u>	<u>Bahama Cassia</u>
<u>Serenoa repens</u>	<u>Saw Palmetto</u>
<u>Sophora tomentosa</u>	<u>Necklace Pod</u>
<u>GROUNDCOVER</u>	
<u>Arachis glabrata</u>	<u>Perennial Peanut</u>
<u>Asclepias tuberosa</u>	<u>Butterfly Weed</u>
<u>Borrichia arborescens</u>	<u>Sea Ox-Eye Daisy</u>
<u>Coreopsis leavenworthii</u>	<u>Tickseed</u>
<u>Crinum americanum</u>	<u>Swamp Lily</u>
<u>Ermodia littoralis</u>	<u>Golden Creeper</u>
<u>Flaveria linearis</u>	<u>Yellowtop</u>
<u>Gaillardia puchella</u>	<u>Blanket Flower</u>
<u>Helianthus debilis</u>	<u>Dune Sunflower</u>
<u>Hymenocallis latifolia</u>	<u>Spider Lily</u>
<u>Ipomea pes-caprae</u>	<u>Goatsfoot</u>
<u>Lantana depressa</u>	<u>Pineland Lantana</u>
<u>Muhlenbergia capillaris</u>	<u>Muhly Grass</u>
<u>Nephrolepis exaltata</u>	<u>Sword Fern</u>
<u>Salvia coccinea</u>	<u>Native Salvia</u>
<u>Scaevola plumieri</u>	<u>Inkberry</u>
<u>Scuteleria havanensis</u>	<u>Havana Skullcap</u>
<u>Sesuvium portulacastrum</u>	<u>Sea Purslane</u>

<u>Spartina patens</u>	<u>Cordgrass</u>
<u>Stachytarpheta jamaicensis</u>	<u>Porterweed</u>
<u>Tripsacum floridanum</u>	<u>Dwarf Fakahatchee</u>
<u>Uniola paniculata</u>	<u>Sea Oats</u>
<u>Zamia pumila</u>	<u>Coontie</u>
<u>LARGE PALMS</u>	
<u>Roystonea elata</u>	<u>Royal Palm</u>
<u>MEDIUM PALMS</u>	
<u>Sabal palmetto</u>	<u>Palmetto</u>
<u>SMALL PALMS</u>	
<u>Coccothrinax argentata</u>	<u>Silver Palm</u>
<u>Pseudophoenix sargentii</u>	<u>Buccaneer Palm</u>
<u>Thrinax radiata</u>	<u>Thatch Palm</u>
<u>Thrinax morrisii</u>	<u>Keys Thatch Palm</u>
<p><u>Note: This list is not complete and is to be used as a representative sampling of the required native planting material. For a complete list, contact the City Biologist.</u></p>	

Common Name	Botanical Name	Maximum Height	Native Status
CANOPY TREES			
Gumbo Limbo	Bursera simaruba	40—60 feet	Keys
Jamaican Dogwood	Piscidia piscipula	35—50 feet	Keys
Mahogany	Swietenia mahogany	40 feet	Keys
Green Buttonwood	Conocarpus erectus	30 feet	Keys
Pigeon Plum	Coeloba diversifolia	40 feet	Keys
Silver Buttonwood	Conocarpus erectus	15—20 feet	Keys
Satinleaf	Chrysophyllum oliviforme	30 feet	Keys
Autograph Tree, Pitch Apple	Clusia rosea	30 feet	Keys
Locustberry	Brysonima lucida	15 feet	Keys

Lignum Vitae	Guaiacum sanctum	25 feet	Keys
SHRUBS			
Jamaica Caper	Capparis cunophallophora	6—15 feet	Keys
Coco Plum	Chrysobalanus icaco	12 feet	Florida
Necklace Pod	Sophora tomentosa	6—8 feet	Keys
Golden Dewdrop	Duranta repens	18 feet	Florida
Bay Cedar	Suriana maritima	10—15 feet	Keys
Wild Coffee	Psycotia nervosa	4—6 feet	Florida
Firebush	Hamelia patens	18—30 inches	Florida
GROUND COVER			
Golden Creeper	Ernoda littoralis	1—3 feet	Florida
Blanket Flower	Gaillardia pulchella	1—1.5 feet	Florida
Railroad Vine	Ipomoea pes-caprae	0.3—0.6 feet	Florida
Sea Purselane	Sesuvium portulacastrum	1—1.5 feet	Florida
Sea Oats	Uniola paniculata	3—5 feet	Keys
Dwarf Lantana	Lantana involucrate	0.7 feet	Keys
Blue Porterweed	Stachytarpheta jamaicensis	1—1.5 feet	Keys
Spider Lily	Hymenocallis latifolia	1—3 feet	Florida
Crinum Lily	Crinum Spp.	5 feet	Florida
Beach Sunflower	Helianthus debilis	1—2 feet	Keys
Coontie	Zamia pumila	1—3 feet	Keys

PALMS			
Florida Thatch Palm	<i>Thrinax radiata</i>	30 feet	Keys
Key Thatch Palm	<i>Thrinax morrissi</i>	25 feet	Keys
Florida Silver Palm	<i>Coccothrinax argentata</i>	40 feet	Keys
Saw Palmetto	<i>Serenoa repens</i>	20 feet	Keys
Buccaneer Palm	<i>Pseudophoenix sargentii</i>	10 feet	Keys
Cabbage Palm	<i>Sabal palmetto</i>	40 feet	Keys
Dwarf Palmetto	<i>Sabal minor</i>	6 feet	Keys

Table 107.68.2
Approved Non-Native Plant Materials

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
<u>LARGE TREES</u>	
<u><i>Bulnesia arborea</i></u>	<u>Verawood</u>
<u><i>Cassia fistula</i></u>	<u>Golden Shower</u>
<u><i>Cananga odorata</i></u>	<u>Ylang Ylang</u>
<u><i>Jacaranda mimosifolia</i></u>	<u>Jacaranda</u>
<u><i>Mangifera indica</i></u>	<u>Mango</u>
<u><i>Tamarindus indica</i></u>	<u>Tamarind</u>
<u>MEDIUM TREES</u>	
<u><i>Caesalpinia pulcherrima</i></u>	<u>Dwarf Poinciana</u>
<u><i>Senna surattensis</i></u>	<u>Glaucous Cassia</u>
<u>LARGE SHRUBS</u>	
<u><i>Citrus aurantifolia</i></u>	<u>Key Lime</u>
<u><i>Clusia guttifera</i></u>	<u>Small Leaf Clusia</u>
<u>MEDIUM SHRUBS</u>	
<u><i>Acalypha hispida</i></u>	<u>Chenille Plant</u>
<u><i>Acalypha wilkesiana</i></u>	<u>Copperleaf</u>
<u><i>Codiaeum variegatum</i></u>	<u>Croton</u>
<u><i>Galphimia gracilis</i></u>	<u>Thryallis</u>
<u>SMALL SHRUBS</u>	
<u><i>Bougainvillea speciosa</i></u>	<u>Bougainvillea</u>
<u><i>Cariss macrocarpa</i> 'Emerald Blanket'</u>	<u>Emerald Blanket Carissa</u>

<u>Clerodendron thomsoniae</u>	<u>Bleeding Heart</u>
<u>Hamelia patens 'Compacta'</u>	<u>Dwarf Firebush</u>
<u>Pandora jasminoides</u>	<u>Bower Vine</u>
<u>Plumbago auriculata</u>	<u>Leadwort</u>
<u>Zamia furfuracea</u>	<u>Cardboard Palm</u>
<u>GROUNDCOVER</u>	
<u>Crossandra infundibuliformis</u>	<u>Crossandra</u>
<u>Euphorbia millii</u>	<u>Crown of Thorns</u>
<u>Ficus microcarpa 'Green Island'</u>	<u>Green Island Ficus</u>
<u>Lantana camara</u>	<u>Lantana</u>
<u>Microsorium scolopendrium</u>	<u>Wart Fern</u>
<u>Nephrolepis falcata</u>	<u>Macho Fern</u>
<u>Pentas lanceolata</u>	<u>Star Flower</u>
<u>Philodendron 'Burle Marx'</u>	<u>Burle Marx Philodendron</u>
<u>Ruellia brittonia</u>	<u>Ruellia</u>
<u>Russelia equisetiformis</u>	<u>Firecracker</u>
<u>LARGE PALMS</u>	
<u>Bismarkia nobilis</u>	<u>Bismark Palm</u>
<u>Cocus nucifera</u>	<u>Coconut</u>
<u>Phoenix canariensis</u>	<u>Canary Date Palm</u>
<u>Phoenix dactylifera 'Medjool'</u>	<u>Medjool Date Palm</u>
<u>MEDIUM PALMS</u>	
<u>Veitchii montgomeryana</u>	<u>Montgomery Palm</u>
<u>Wodyetia bifurcata</u>	<u>Foxtail Palm</u>
<u>SMALL PALMS</u>	
<u>Dyopsis cabadae</u>	<u>Cabada Palm</u>
<u>Ptychosperma elegans</u>	<u>Alexander Palm</u>
<u>Note: This list is not complete and is to be used as a representative sampling of the required native planting material. For a complete list, contact the City Biologist.</u>	

Section 107.69. Landscape Plans.

- A. **Planting Plan:** [Site designs and landscape construction documents shall be prepared in accordance with the requirements of all applicable Florida Statutes. All landscape and irrigation system designs shall be consistent with the standards required under 373.228 Florida Statutes.](#) A copy of the planting plan shall be submitted to the Department for final review.
- B. **Drawing Requirements:** Planting drawings shall indicate all existing and proposed landscape buffers, easements, utilities, right-of-ways, structures, and overhead lines associated with the parcel. [All multi-family and non-residential landscape plans shall be prepared by a landscape architect licensed to practice in the State of Florida, or by persons authorized by Chapter 481, Florida Statutes, to prepare landscape plans or drawings.](#)

B.C. **Natural Vegetation:** The preservation and utilization of a site's ~~natural~~-native trees, understory, and other vegetation shall be incorporated into the overall site development and planting plans to the greatest extent practicable.

C.D. **Xeriscaping Florida Friendly Landscapes:** The following table lists those principles that shall be utilized by the TRC in the preparation, review, evaluation, and approval of all required landscape plans. These principles shall only be required to apply to new construction or substantial improvements, as applicable.

Table 107.69.1

<u>Florida Friendly Landscape Requirements</u> <u>(R= Compliance Required, O= Compliance Optional)</u>	<u>Non-Residential</u>	<u>Residential</u>
<u>1. Site Planning and Design:</u>	<u>R</u>	<u>R</u>
<u>a. The Site Plan shall consider natural drainage features to minimize runoff. The use of pervious surfaces and areas is preferred. Therefore impervious surfaces and materials within the landscaped area shall be limited to borders, sidewalks, stepping stones, and other similar elements of design and shall not exceed 15 percent of the landscaped area. Use of pervious paving materials is strongly encouraged and relative imperviousness will be considered.</u>	<u>R</u>	<u>R</u>
<u>b. Site plans shall identify all vegetated areas to be preserved, including but not limited to water resource and wetland buffers adjoining all waters of the state. Such buffers should be native, or if previously disturbed, constructed in accordance with USDA-NRCS conservation practices. Water resource and wetland buffers shall comply with Section 106.28 in order to protect water bodies from nonpoint source pollution generated by up gradient development.</u>	<u>R</u>	<u>R</u>
<u>c. All invasive exotic plant species shall be noted on the Site Plan and be removed from each site prior to the beginning of construction. For purposes of determining plant species to remove, refer to Department of Agriculture and Consumer Services "Noxious Weeds" rule Chapter 5B-57, F.A.C. and the Florida Keys Exotic Invasive Task Force rules and guidelines.</u>	<u>R</u>	<u>R</u>
<u>d. Gravel, river rock, shell and similar materials shall not be used as a major landscape ground cover or mulch as they increase the need for herbicide use, have no habitat value, reflect rather than absorb heat, do not produce oxygen like plants and the runoff from crushed gravel results in high turbidity in near shore waters, resulting in layers of silt, which can kill off sea grass, corals and marine life. In no case may the use of these materials exceed 30 percent of the total pervious site area.</u>	<u>R</u>	<u>R</u>

<p>e. <u>The solar orientation of the property and its relationship to other properties should be considered as this may produce different microclimate exposures (e.g., sun vs. shade, southern vs. northern exposure, surrounded by heat-reflective surfaces, etc). When preparing a landscape plan, consideration should be given to the proper selection and placement of tree species near buildings to minimize building heating and cooling requirements. When located appropriately, trees of adequate size, quality, canopy, and form can decrease energy consumption in buildings in the summer by reducing heat absorption and in the winter by allowing for passive solar heating and providing protection from the wind. Maximum cooling savings will result when deciduous trees are planted to shade the eastern and/or western wall and windows of buildings. To shade the roof or wall of a one-family residential structure, for example, trees that will mature to a medium-to-large size should be planted within thirty (30) feet of the structure. Smaller trees can also be planted closer to the house and used to shade walls and window areas.</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>f. <u>The Landscape Construction Documents shall be drawn to scale and include property boundaries, north arrow, graphic scale, and date. They shall also include, but not be limited to the following :</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>i. <u>Location of all underground and above ground utilities and boxes including overhead utilities;</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>ii. <u>Existing and proposed trees, shrubs, ground covers and turf areas within the developed landscape area;</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>iii. <u>Plants by botanical and common name, where applicable cultivar name, plant spacing, quantities of plant for each type, planted sizes including notation of field grown or container size, and mature height and spread of each plant;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>iv. <u>Existing and proposed property lines, streets, street names and public utilities;</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>v. <u>Existing and proposed hardscape features such as driveways, patios, and sidewalks as necessary as well as existing or proposed nonorganic mulched areas;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>vi. <u>Existing and proposed structures such as pools, fountains, fences and retaining walls;</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>vii. <u>Existing and proposed buildings;</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>viii. <u>Tabulation of the total square footage(s) of the various landscape hydrozones on the plan. If more than one (1) water meter serves the site, the total hydrozone square footages of all the various hydrozones must be identified with each Point of Connection (POC) and meter providing water service.</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>g. <u>Irrigation plans must be designed to recognize differential irrigation requirements of the landscape as described in this article. It is suggested that As-Built construction documents be submitted prior to issuance of the Certificate of Occupancy, with a copy delivered to the property owner. This will help to prevent later damage from digging by utility workers or the property owner and assist the owner with understanding the system design. The irrigation plan shall include the following:</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>i. <u>Irrigation point(s) of connection and design capacity;</u></p>	<p><u>R</u></p>	<p><u>R</u></p>
<p>ii. <u>Water service pressure at irrigation POCs;</u></p>	<p><u>R</u></p>	<p><u>R</u></p>

iii. <u>Water meter size;</u>	<u>R</u>	<u>R</u>
iv. <u>Reduced-pressure-principle backflow-prevention devices for each irrigation POC on potable water systems;</u>	<u>R</u>	<u>R</u>
v. <u>Major components of the irrigation system shall include, but not be limited to; pumps, filters, valves, mainline pipes, lateral pipes, controllers, tubing, and pipe sizes;</u>	<u>R</u>	<u>R</u>
vi. <u>Precipitation rate expressed in inches per hour for each valve circuit. The preparer must attach to the Project Data Sheet the calculations for deriving precipitation rates for each irrigation valve circuit;</u>	<u>R</u>	<u>O</u>
vii. <u>Total flow rate (flow velocity not to exceed five (5) feet per second) in gallons per minute (gpm) and operating pressure (psi) for each individual overhead and bubbler circuit, and gallons per hour (gph) and operating pressure for low-flow point irrigation circuit;</u>	<u>R</u>	<u>R</u>
<u>elements: Separate symbols for all irrigation equipment. For each irrigation head type the legend shall show coverage patterns, precipitation rates, operation pressure requirements, gallons required and associated time periods, brand and model names, and pressure compensating devices (if applicable). A general description of all other equipment, including brand name and model number, sizes, special features, and materials. For all specified equipment for low-flow systems the legend shall contain recommended operating pressure, brand name and model names, precipitation rates, distribution patterns, and spacing of emitters or drip tubing;</u>	<u>R</u>	<u>R</u>
ix. <u>The same requirements for use of a recycled water irrigation system shall apply. Reclaimed water, grey water, or other nonpotable water shall be used for irrigation provided an acceptable source for that water is available and identified by the City;</u>	<u>R</u>	<u>R</u>
x. <u>Identify location of the rain shut-off devices and any soil moisture sensors;</u>	<u>R</u>	<u>R</u>
xi. <u>The irrigation system must clearly account for any slopes over ten (10%) percent and any elevation differences over five (5) feet. If the irrigation plan does not clearly show design for these situations, a grading plan may be required which shall indicate all finish grades by either spot elevations or contours or both along with drainage patterns within the developed irrigated area.</u>	<u>R</u>	<u>O</u>
<u>2. Soils:</u>	-	-
a. <u>Analysis: When required, as determined by the City Biologist, a soil analysis shall provide the following information, at a minimum:</u>	<u>R</u>	<u>O</u>
i. <u>Determination of soil texture, indicating the percentage of organic matter;</u>	<u>R</u>	<u>O</u>
ii. <u>Measurement of pH of the soil, and total soluble salts; and</u>	<u>R</u>	<u>O</u>
iii. <u>Estimated soil infiltration rate.</u>	<u>R</u>	<u>O</u>
b. <u>Use of Existing Top Soil: Existing horticulturally suitable topsoil shall be stockpiled and re-spread during final site grading. Any new soil required shall be similar to the existing soil in pH, texture, permeability, and other characteristics, unless a Soil Analysis provides evidence that either soil amendment is needed or a different soil type is required. The use of solid waste compost as a soil amendment is encouraged where it is appropriate.</u>	<u>R</u>	<u>O</u>

<u>3. Land Clearing Standards and Preservation of Native Vegetation:</u>	-	-
a. <u>Unless otherwise approved by the City, clearing of a site shall preserve all native vegetation.</u>	R	R
b. <u>Vegetation which is set aside for preservation shall be protected from all on-site construction. Protective barriers shall be installed along the perimeter of all preserve areas. Protective barriers shall be constructed at such intervals to prevent machinery from passing between them.</u>	R	R
c. <u>No equipment or materials shall be permitted to be stored within the set-aside areas, and dumping of excess soil, liquids, or any other construction debris within the preservation areas is prohibited.</u>	R	R
d. <u>Removal or re-grading of soils within preservation areas is prohibited.</u>	R	R
e. <u>Any damaged vegetation within the set-aside areas shall be replaced with vegetation equivalent to the vegetation destroyed before any certificates of occupancy or other approvals may be issued.</u>	R	R
<u>4. Appropriate Plant Selection, Location, and Arrangement:</u>	-	-
a. <u>Appropriate Plant Selection: Plant selection should be based on the plant's adaptability to the existing conditions present within the planted area and the Keys native plant communities. Plant species that are drought tolerant are preferred. For purposes of determining prohibited and controlled plant species refer to the Department of Agriculture and Consumer Services rule, Chapter 5B-57 Florida Administrative Code. Plants named in this rule may not be used except as allowed in Chapter 5B-57.</u>	R	R
b. <u>Location: Plants shall be grouped in accordance with their respective water and maintenance needs. Plants with similar water and cultural (soil, climate, sun, and light) requirements shall be grouped together. Where natural conditions are such that irrigation is not required, the presence of site appropriate plants shall not be considered a high water use hydrozone.</u>	R	R
c. <u>Arrangement: The combined size of all high water use hydrozones shall be limited to 30 percent of the total planted area including turf. In planted areas irrigated with recycled water, the allowable size of all high water use zones shall be increased to not more than 60 percent of the total planted area including turf. These high water use limits do not apply to planted areas requiring large amounts of turf for their primary functions, e.g., ballfields and playgrounds; soil moisture sensors shall be installed in these areas.</u>	R	O
<u>5. Turf Areas:</u>	-	-
a. <u>Type and Location: The type of turf shall be selected from c.1, below and the location of turf areas shall be chosen in the same manner as with all the other plantings. Irrigated turf areas, as opposed to non-irrigated turf areas, are considered to be a high water use hydrozone. Irrigated turf shall not be treated as a fill-in material but rather as a planned element of the landscape. Turf shall be placed so that it can be irrigated using separate zones.</u>	R	R

b. <u>Arrangement: While turf areas provide many practical benefits in a landscape, how and where it is used can result in a significant reduction in water use. Irrigated turf grass areas shall be consolidated and limited to those areas on the site that receive pedestrian traffic, provide for recreation use, provide cover for waste treatment drainfields and required drainfield reserve areas, or provide soil erosion control such as on slopes or in swales; and where turfgrass is used as a design unifier, or other similar practical use.</u>	<u>R</u>	<u>O</u>
c. <u>No turf grass that requires mowing shall be allowed on slopes greater than 4:1 or within ten (10) feet of the water's edge. For turf areas (where a planting plan is required), areas shall be identified on the plan by biological and common name and by variety and by the square footage covered by the turf.</u>	<u>R</u>	<u>R</u>
<u>1. Turf Types Appropriate for the Keys</u>		
<u>St. Augustine</u>	-	-
<u>Bermuda</u>	-	-
<u>Zoysia</u>	-	-
<u>Bahia</u>	-	-
<u>6. Efficient Irrigation:</u>		
a. <u>Design Guidelines: An irrigation system shall be designed and constructed in accordance with the Site Planning and Design Requirements of this Article. All irrigation installations after the effective date of this ordinance shall meet the irrigation standards identified per 373.228 F.S. These include:</u>		
i. <u>Irrigation systems shall be designed to meet the needs of the plants in the landscape (not the other way around).</u>	<u>R</u>	<u>R</u>
ii. <u>Whenever feasible, irrigation systems shall be designed to separately serve turf and non-turf areas.</u>	<u>R</u>	<u>R</u>
iii. <u>The irrigation system plans and specifications shall identify the materials to be used and the construction methods.</u>	<u>R</u>	<u>R</u>
iv. <u>The design shall consider soil, slope, and other site characteristics in order to minimize water waste, including overspray, the watering of impervious surfaces and other non-vegetated areas, and off-site runoff.</u>	<u>R</u>	<u>O</u>
v. <u>The system shall be designed to minimize free flow conditions in case of damage or other mechanical failure.</u>	<u>R</u>	<u>O</u>
vi. <u>The system shall be designed to use the lowest quality water feasible.</u>	<u>R</u>	<u>O</u>
vii. <u>Rain switches or other approved devices, such as soil moisture sensors, to prevent unnecessary irrigation, shall be incorporated. (Section 373.62, F.S.)</u>	<u>R</u>	<u>R</u>
viii. <u>A recommended seasonal operating schedule and average precipitation rates for each irrigation zone for both establishment and maintenance conditions shall be provided.</u>	<u>R</u>	<u>O</u>
ix. <u>Control systems shall provide the following minimum capabilities:</u>		
i. <u>Ability to be programmed in minutes, by day of week, season and time of day.</u>	<u>R</u>	<u>R</u>
ii. <u>Ability to accommodate multiple start times and programs</u>	<u>R</u>	<u>R</u>
iii. <u>Automatic shut off after adequate rainfall,</u>	<u>R</u>	<u>R</u>
iv. <u>Ability to maintain time during power outages for a minimum of three days</u>	<u>R</u>	<u>O</u>
v. <u>Operational flexibility to meet applicable year-round water conservation requirements and temporary water shortage restrictions.</u>	<u>R</u>	<u>O</u>
x. <u>Recommended maintenance activities and schedules shall be included.</u>	<u>R</u>	<u>O</u>

<u>xi. Precipitation rates for sprinklers and all other emitters in the same zone shall be matched, except that microirrigation emitters may be specified to meet the requirements of individual plants.</u>	<u>R</u>	<u>O</u>
<u>xii. Irrigation systems shall be designed to maximize uniformity, considering factors such as:</u>	<u>R</u>	<u>R</u>
<u> i. Emitter types.</u>	<u>R</u>	<u>R</u>
<u> ii. Head spacing.</u>	<u>R</u>	<u>R</u>
<u> iii. Sprinkler pattern.</u>	<u>R</u>	<u>R</u>
<u> iv. Water pressure at the emitter.</u>	<u>R</u>	<u>R</u>
<u>xiii. Irrigation systems with main lines larger than two inches or designed to supply more than seventy gallons per minute shall incorporate a means to measure irrigation water use, at a minimum of ninety-five percent accuracy across the flow range.</u>	<u>R</u>	<u>O</u>
<u>xiv. Irrigation system plans and specifications shall require the system installer to conduct final testing and adjustments to achieve design specifications prior to completion of the system and acceptance by the owner or owner's representative.</u>	<u>R</u>	<u>O</u>
<u>xv. Irrigation system plans and specifications shall require that the installer provide property owners and users with the following post-construction documentation, including as-constructed drawings, recommended maintenance activities and schedules, operational schedule, design precipitation rates, instructions on adjusting the system to apply less water after the landscape is established, maintenance schedule, water source, water shut-off method, and the manufacturer's operational guide for their irrigation controller. To the extent feasible, similar information should be made available for subsequent property transfers.</u>	<u>R</u>	<u>O</u>
<u>b. Arrangement: The irrigation system shall be designed to correlate to the organization of plants into zones as described in this Article. The water use zones shall be shown on the Irrigation Plan (where plan is required). All plants (including turf) require watering during plant establishment. Temporary irrigation systems may be installed to facilitate establishment of plants and turf. Irrigation must be conducted in accordance with WMD restrictions.</u>	<u>R</u>	<u>O</u>
<u>c. Rain Water Collection: Whenever feasible, the installation of rainwater catchment systems such as cisterns or rain barrels to reduce dependency on the use of potable water for outdoor irrigation and to reduce stormwater treatment volumes shall be required.</u>	<u>R</u>	<u>O</u>
<u>d. Check Valves: Check valves may be required to be installed in irrigation heads prevent low head drainage and puddling, when the head exceeds eight (8) feet above the POC.</u>	<u>R</u>	<u>O</u>
<u>e. Precipitation Rate: Nozzle precipitation rates for all heads within each valve circuit must be matched.</u>	<u>R</u>	<u>O</u>
<u>f. Irrigated areas shall not be less than 4 feet wide, except when next to contiguous property or when using micro or drip irrigation.</u>	<u>R</u>	<u>O</u>
<u>g. Pressure Regulating Valves: A pressure-regulating valve shall be installed and maintained if static service pressure exceeds 80 pounds per square inch. The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and set at not more than 50 pounds per square inch when measured at the most elevated fixture in the structure served. This requirement may be waived if satisfactory evidence is provided that high pressure is necessary in the design and that no water will be wasted as a result of high-pressure operation. [Rationale: The purpose of this requirement is twofold, to</u>	<u>R</u>	<u>O</u>

protect against system failure during pressure surges, and to avoid wasted water due to operation of the system significantly above commonly used design values.]

7. Yard Waste Management, Composting and Use of Mulches:

a. Yard Waste Management: In no case shall grass clippings, vegetative material, and/or vegetative debris be washed, swept, or blown off into stormwater drains, ditches, conveyances, water bodies, wetlands, or sidewalks or roadways. Any material that is accidentally so deposited shall be immediately removed to the maximum extent practicable. Yard wastes shall not be stored by shorelines, in ditches or swales, or near storm drains. [Rationale: Yard wastes release nutrients as they decompose which may pollute the receiving water. Improper disposal of yard wastes can also contribute to flooding by causing stormwater runoff to backup in drainage systems. In addition, improper disposal may lead to spreading of invasive plants to new areas.]

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b. Composting: Shredded yard clippings and leaves should be used for mulch or be composted for use as fertilizer. Diseased organic material should not be stored, composted or used as mulch and should be properly disposed of to avoid spreading disease.

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c. Use of Mulches:

i. Composting of organic yard wastes provide many benefits and their use is strongly encouraged. The resulting materials are excellent soil amendments and conditioners. Other recycled organic solid waste products are also available and should be used when appropriate.

R

R

ii. Grass clippings are a benefit to lawns by replacing nutrients drawn from the soil and as mulch that helps retain moisture lessening the need to irrigate. Grass clippings should be left on the lawn. Mulching mowers are recommended, because the grass clippings are chopped very finely by special blade and shroud configurations.

R

R

iii. If a conventional mower equipped with a side discharge chute is used, the following practices should be employed. When mowing near the shoreline, direct the chute away from the waterbody. When mowing upland areas, direct the chute back onto the yard, not onto the road or driveway.

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iv. Other mulches (except grass clippings) can be applied and maintained at appropriate depths in planting beds to assist soils in retaining moisture, reducing weed growth, and preventing erosion. These mulches can also be used in places where conditions aren't adequate for or conducive to growing quality turf or ground covers. Mulches are typically wood bark chips, wood grindings, pine straws, nut shells, and shredded landscape clippings.

R

R

v. A layer of organic mulch three (3) inches deep shall be specified on the planting plans in plant beds and around individual trees in turfgrass areas. Use of a byproduct or recycled mulch is recommended. Mulch is not required in annual beds.

R

O

vi. <u>Mulch rings should extend to at least three (3) feet around freestanding trees and shrubs.</u>	<u>R</u>	<u>O</u>
vii. <u>All mulch should be renewed periodically.</u>	<u>R</u>	<u>O</u>
viii. <u>Mulches should be kept at least six (6) inches away from any portion of a building or structure. Mulches should be kept two to four (2—4) inches away from all tree trunks and certain types of shrubs and ground covers.</u>	<u>R</u>	<u>R</u>
ix. <u>Plastic or other impervious materials shall not be used under mulched areas.</u>	<u>R</u>	<u>O</u>
8. <u>Installation and Maintenance: All planting, excluding private residences, shall be installed according to accepted commercial planting procedures and executed by a qualified and licensed landscape contractor using the quality and type of materials recommended by the City Biologist and stated herein.</u>	<u>R</u>	<u>O</u>
1. <u>Site Planning and Design:</u>		
a. The Site Plan shall consider natural drainage features to minimize runoff. The use of pervious surfaces and areas is preferred. Therefore impervious surfaces and materials within the landscaped area shall be limited to planting borders, sidewalks, stepping stones, and pedestrian seating and shall not exceed 35 percent of the landscaped area. Use of pervious paving materials is strongly encouraged even for these limited uses which will decrease the relative impervious area of the site.		
b. Site plans shall identify all vegetated areas to be preserved		
c. All invasive exotic plant species shall be noted on the Site Plan and be removed from each site prior to the beginning of construction. For purposes of determining plant species to remove, refer to Department of Agriculture and Consumer Services "Noxious Weeds" rule Chapter 5B-57, F.A.C. and the Florida Keys Exotic Invasive Task Force rules and guidelines.		
d. Gravel, river rock, shell and similar materials shall not be used as a major landscape ground cover or mulch as they increase the need for herbicide use, have no habitat value, reflect rather than absorb heat, do not produce oxygen like plants and the runoff from crushed gravel results in high turbidity in near shore waters, resulting in layers of silt, which can kill off sea grass, corals and marine life. In no case may the use of these materials exceed 30 percent of the total pervious site area.		
e. The Landscape Construction Documents shall include, but not be limited to the following:		
i. Location of all underground and above ground utilities and boxes including overhead utilities;		
ii. Existing and proposed trees, shrubs, ground covers and turf areas within the developed landscape area;		
iii. Plants by botanical and common name, where applicable cultivar name, plant spacing, quantities of plant for each type, planted sizes including notation of field grown or container size, and mature height and spread of each plant;		
iv. Existing and proposed property lines, streets, street names and public utilities;		
v. Existing and proposed hardscape features such as driveways, patios, and sidewalks as necessary as well as existing or proposed nonorganic mulched areas;		
vi. Existing and proposed structures such as pools, fountains, fences and retaining walls;		
vii. Existing and proposed buildings;		

- ~~viii. Tabulation of the total square footage(s) of the various landscape hydrozones on the plan. If more than one (1) water meter serves the site, the total hydrozone square footages of all the various hydrozones must be identified with each Point of Connection (POC) and meter providing water service.~~
- ~~f. Irrigation plans must be designed to recognize differential irrigation requirements of the landscape as described in this article. It is suggested that As-Built construction documents be submitted prior to issuance of the Certificate of Occupancy, with a copy delivered to the property owner. This will help to prevent later damage from digging by utility workers or the property owner and assist the owner with understanding the system design. The irrigation plan should show the following:
 - ~~i. Irrigation point(s) of connection and design capacity;~~
 - ~~ii. Water service pressure at irrigation POCs;~~
 - ~~iii. Water meter size;~~
 - ~~iv. Reduced pressure principle backflow prevention devices for each irrigation POC on potable water systems;~~
 - ~~v. Major components of the irrigation system shall include, but not be limited to; pumps, filters, valves, mainline pipes, lateral pipes, controllers, tubing, and pipe sizes;~~
 - ~~vi. Precipitation rate expressed in inches per hour for each valve circuit. The preparer must attach to the Project Data Sheet the calculations for deriving precipitation rates for each irrigation valve circuit;~~
 - ~~vii. Total flow rate (flow velocity not to exceed five (5) feet per second) in gallons per minute (gpm) and operating pressure (psi) for each individual overhead and bubbler circuit, and gallons per hour (gph) and operating pressure for low flow point irrigation circuit;~~
 - ~~viii. Irrigation legend will have the following elements: Separate symbols for all irrigation equipment. For each irrigation head type the legend shall show coverage patterns, precipitation rates, operation pressure requirements, gallons required and associated time periods, brand and model names, and pressure compensating devices (if applicable). A general description of all other equipment, including brand name and model number, sizes, special features, and materials. For all specified equipment for low flow systems the legend shall contain recommended operating pressure, brand name and model names, precipitation rates, distribution patterns, and spacing of emitters or drip tubing;~~
 - ~~ix. The same requirements for use of a recycled water irrigation system shall apply. Reclaimed water, grey water, or other nonpotable water shall be used for irrigation provided an acceptable source for that water is available and identified by the City;~~
 - ~~x. Identify location of the rain shut off devices and any soil moisture sensors;~~
 - ~~xi. The irrigation system must clearly account for any slopes over ten (10%) percent and any elevation differences over five (5) feet. If the irrigation plan does not clearly show design for these situations, a grading plan may be required which shall indicate all finish grades by either spot elevations or contours or both along with drainage patterns within the developed irrigated area.~~~~

~~2. Soils:~~

- ~~a. Analysis: When required, as determined by the City Biologist, a soil analysis shall provide the following information, at a minimum:
 - ~~i. Determination of soil texture, indicating the percentage of organic matter;~~
 - ~~ii. Measurement of pH of the soil, and total soluble salts; and~~
 - ~~iii. Estimated soil infiltration rate.~~~~

- b. ~~*Use of Existing Top Soil:* Existing horticulturally suitable topsoil shall be stockpiled and re-spread during final site grading. Any new soil required shall be similar to the existing soil in pH, texture, permeability, and other characteristics, unless a Soil Analysis provides evidence that either soil amendment is needed or a different soil type is required. The use of solid waste compost as a soil amendment is encouraged where it is appropriate.~~

3. ~~Land Clearing Standards and Preservation of Native Vegetation:~~

- a. ~~Unless otherwise approved by the City, clearing of a site shall preserve all native vegetation.~~
- b. ~~Vegetation which is set aside for preservation shall be protected from all on-site construction. Protective barriers shall be installed along the perimeter of all preserve areas. Protective barriers shall be constructed at such intervals to prevent machinery from passing between them.~~
- c. ~~No equipment or materials shall be permitted to be stored within the set aside areas, and dumping of excess soil, liquids, or any other construction debris within the preservation areas is prohibited.~~
- d. ~~Removal or re-grading of soils within preservation areas is prohibited.~~
- e. ~~Any damaged vegetation within the set aside areas shall be replaced with vegetation equivalent to the vegetation destroyed before any certificates of occupancy or other approvals may be issued.~~

4. ~~Appropriate Plant Selection, Location, and Arrangement:~~

- a. ~~*Appropriate Plant Selection:* Plant selection should be based on the plant's adaptability to the existing conditions present within the planted area and the Keys native plant communities. Plant species that are drought tolerant are preferred. For purposes of determining prohibited and controlled plant species refer to the Department of Agriculture and Consumer Services rule, Chapter 5B-57 Florida Administrative Code. Plants named in this rule may not be used except as allowed in Chapter 5B-57.~~
- b. ~~*Location:* Plants shall be grouped in accordance with their respective water and maintenance needs. Plants with similar water and cultural (soil, climate, sun, and light) requirements shall be grouped together. The water use zones (hydrozones) shall be shown on the Irrigation, Layout, and Planting Plans (where required). Where natural conditions are such that irrigation is not required, the presence of site appropriate plants shall not be considered a high water use hydrozone.~~
- c. ~~*Arrangement:* The combined size of all high water use hydrozones shall be limited to 40 percent of the total planted area including turf. In planted areas irrigated with recycled water, the allowable size of all high water use zones shall be increased to not more than 75 percent of the total planted area including turf. These high water use limits do not apply to planted areas requiring large amounts of turf for their primary functions, e.g., ballfields and playgrounds.~~

5. ~~Turf Areas:~~

- a. ~~*Type and Location:* The type of turf shall be selected from Table 107.69.1, below and the location of turf areas shall be chosen in the same manner as with all the other plantings. Irrigated turf areas, as opposed to non irrigated turf areas, are considered to be a high water use hydrozone. Irrigated turf shall not be treated as a fill in material but rather as a planned element of the landscape. Turf shall be placed so that it can be irrigated using separate zones.~~
- b. ~~*Arrangement:* While turf areas provide many practical benefits in a landscape, how and where it is used can result in a significant reduction in water use. Irrigated turf grass areas shall be consolidated and limited to those areas on the site that receive pedestrian traffic, provide for recreation use, provide cover for waste treatment drainfields and required drainfield reserve areas, or provide soil erosion control such as on slopes or in swales; and where turfgrass is used as a design unifier, or other similar practical use. No turf grass that requires mowing shall be allowed on slopes greater than 4:1 or within six (6) feet of the water's edge, except where adjacent to seawalls and bulkheads or where needed to control erosion. For turf areas (where a planting plan is required) areas shall be identified on the plan by biological and common name and by variety and by the square footage covered by the turf.~~

Table 107.69.1
Turf Types
Appropriate for the Keys

St. Augustine
Bermuda
Zoysia
Bahia

6. ~~Efficient Irrigation:~~

- ~~a. **Design Guidelines:** An irrigation system shall be designed and constructed in accordance with the Site Planning and Design Requirements of this Article.~~
- ~~b. **Irrigation Schedule:** Water can be conserved through the use of a properly designed, managed, maintained, and timed irrigation system. Irrigation scheduling information, equipment manuals, and instructions for seasonal, daily and weekly timing (as appropriate), and proper sensor settings, shall be provided to the owner at the time of installation by the irrigation contractor. An irrigation valve location map, gallons per minute demands, precipitation rates, plant types within valve circuits, and operating pressure requirements for each valve shall be developed and provided to the property owner. This map shall be attached inside each irrigation controller, pump station, or be kept in another readily available location as is practical and maintained as a permanent record for the irrigation system.~~
- ~~c. **Arrangement:** The irrigation system shall be designed to correlate to the organization of plants into zones as described in this Article. The water use zones shall be shown on the Irrigation Plan (where plan is required). All plants (including turf) require watering during plant establishment. Temporary irrigation systems may be installed to facilitate establishment of plants and turf.~~
- ~~d. **Rain Water Collection:** The City encourages the installation of rainwater catchment systems such as eisterns or rain barrels to reduce dependency on the use of potable water for outdoor irrigation.~~

7. ~~Other Requirements:~~

- ~~a. **Moisture Sensing Equipment:** Moisture sensing equipment shall be required on automatic irrigation systems to avoid irrigation during periods of sufficient rainfall and/or soil moisture. Rain shut-off switch equipment shall be required on all new irrigation systems and any systems that are significantly modified or repaired. Said equipment shall consist of an automatic mechanical or electronic sensing device or switch that will override the irrigation controller the irrigation system when adequate rainfall has occurred.~~
- ~~b. **Protection of Lines:** The installation of tracer wire along main lines and laterals is strongly encouraged to permit easy location and prevent inadvertent cutting of pipes.~~
- ~~c. **Check Valves:** Check valves may be required to be installed in irrigation heads prevent low head drainage and puddling, when the head exceeds eight (8) feet above the POC.~~

- ~~d. *Precipitation Rate:* Nozzle precipitation rates for all heads within each valve circuit must be matched.~~
- ~~e. *Pressure Regulating Valves:* A pressure regulating valve shall be installed and maintained if static service pressure for the irrigation system is too excessive to allow for valves or heads to operate within the manufacturer's recommendations for that equipment. [*Rationale: The purpose of this requirement is twofold, to protect against system failure during pressure surges, and to avoid wasted water due to operation of the system significantly above commonly used design values.*]~~

~~8. *Yard Waste Management, Composting and Use of Mulches:*~~

- ~~a. *Yard Waste Management:* Yard wastes shall not be disposed of or stored by shorelines, in ditches or swales, or near storm drains. [*Rationale: Yard wastes release nutrients as they decompose which may pollute the receiving water. Improper disposal of yard wastes can also contribute to flooding by causing stormwater runoff to backup in drainage systems. In addition, improper disposal may lead to spreading of invasive plants to new areas.*]~~
- ~~b. *Composting:* Shredded yard clippings and leaves should be used for mulch or be composted for use as fertilizer. Diseased organic material should not be stored, composted or used as mulch and should be properly disposed of to avoid spreading disease.~~
- ~~c. *Use of Mulches:*~~
 - ~~i. *Composting of organic yard wastes provide many benefits and their use is strongly encouraged. The resulting materials are excellent soil amendments and conditioners. Other recycled organic solid waste products are also available and should be used when appropriate.*~~
 - ~~ii. *Grass clippings are a benefit to lawns by replacing nutrients drawn from the soil and as mulch that helps retain moisture lessening the need to irrigate. Grass clippings should be left on the lawn. Mulching mowers are recommended, because the grass clippings are chopped very finely by special blade and shroud configurations.*~~
 - ~~iii. *If a conventional mower equipped with a side discharge chute is used, the following practices should be employed. When mowing near the shoreline, direct the chute away from the waterbody. When mowing upland areas, direct the chute back onto the yard, not onto the road or driveway.*~~
 - ~~iv. *Other mulches (except grass clippings) can be applied and maintained at appropriate depths in planting beds to assist soils in retaining moisture, reducing weed growth, and preventing erosion. These mulches can also be used in places where conditions aren't adequate for or conducive to growing quality turf or ground covers. Mulches are typically wood bark chips, wood grindings, pine straws, nut shells, and shredded landscape clippings.*~~
 - ~~v. *A layer of organic mulch three (3) inches deep shall be specified on the planting plans in plant beds and around individual trees in turfgrass areas. Use of a byproduct or recycled mulch is recommended. Mulch is not required in annual beds.*~~
 - ~~vi. *Mulch rings should extend to at least three (3) feet around freestanding trees and shrubs.*~~
 - ~~vii. *All mulch should be renewed periodically.*~~

~~viii. Mulches should be kept at least six (6) inches away from any portion of a building or structure. Mulches should be kept two to four (2—4) inches away from all tree trunks and certain types of shrubs and ground covers.~~

~~ix. Plastic or other impervious materials shall not be used under mulched areas.~~

~~9. **Installation and Maintenance:** All planting, excluding private residences, shall be installed according to accepted commercial planting procedures and executed by a qualified and licensed landscape contractor using the quality and type of materials recommended by the City Biologist and stated herein.~~

~~10.1. Exemptions to Xeriscaping: Exempted from the provisions of ~~this Article~~ Table 107.69.1, if applicable, are the following:~~

~~a. Golf courses and specialized athletic fields; [*Rationale: These have specialized needs not addressed in the general references, and are usually managed by highly trained professionals*]~~

~~b. One and two family dwelling units on individual lots.~~

~~e.b. Any development that is governed by an approved, final site plan or a valid building permit issued prior to the effective date of this Ordinance, is exempted from retrofitting or meeting the specific provisions of ~~this Article~~ Table 107.69.1. However, no existing development is exempted from meeting the provisions affecting management, maintenance, or the education of maintenance personnel of this Ordinance.~~

~~d.c. Rights-of-way for public utilities, including electrical transmission and distribution lines, and natural gas pipelines.~~

~~e.d. Conditional exemption may be granted by the City Biologist for individual projects if the applicant can, in writing, define the areas of exemption and demonstrate acceptable reasons for the requested exemption.~~

~~11. **Alternative Compliance:**~~

~~a. An applicant may submit a landscape or planting plan which varies from the strict application of the xeriscaping requirements of this Article in order to accommodate unique site features, or characteristics, the preservation of water views or to utilize innovative design.~~

~~b. An alternative compliance landscape or planting plan may be approved only upon a finding that it fulfills the purpose and intent of the xeriscaping requirements of the Plan and of this Article as well as or more effectively than would adherence to the strict requirements.~~

~~c. In evaluating proposed alternative compliance landscape or planting plans, considerations shall be given to proposals which preserve existing native vegetation and where the design ensures the maximum preservation of existing non-invasive vegetation on the site.~~

Section 107.70. Landscape Buffer Requirements.

A. *Project Boundary Buffers:*

1. *General Provisions:*

a. Project Boundary Buffers shall be located along the outer perimeter of the parcel to be developed extending inward from the parcel boundaries. The project Boundary Buffer shall be applied to the sides and back of the property. The TRC has the authority to approve the placement of a buffer at an adequate distance from the parcel boundary when it can be shown that a conflict exists with an existing utility easement.

- b. Buffers on residential developments shall be designated as common areas and shall not be included within lots.
- c. Buffers on nonresidential sites may be included within lots and counted toward setback requirements.
- d. No structures are permitted in buffers except fire hydrants, concrete valve markers, underground utility markers, switches, bus shelters or benches, incidental signs not exceeding two (2) square feet in area, and screening.
- e. No parking is permitted within a buffer zone.
- f. Buffer areas may include portions of the stormwater management system if the applicant demonstrates that the character and intent of the buffer is not diminished. At a minimum, the buffer shall include all of the required plantings at the normal grade of the site at the property line.
- g. Pedestrian access through a buffer to adjacent uses may be permitted.
- h. Utility lines may cross the buffer provided that the amount of buffer compromised is minimized while maintaining the specified number of plantings required in Table 107.70.2.
- i. Trails within a buffer may be permitted provided the character and intent of the buffer is not diminished.

2. *Required Project Boundary Buffers:*

a. Minimum buffers types (i.e. low medium high) required on property boundaries between zoning districts are shown in Table 107.70.1. For the purpose of prescribing appropriate Project Boundary Buffers from the City of Marathon Landscape Design Manual, the following shall apply to Table 107.70.1

- a. H = H Type Buffer = H2, H4, H5, or H6
- b. M = M Type Buffer = M2, M3, or M5
- c. L = Low Type Buffer = L1, or L3

a.b. Minimum width and planting ~~specifications~~ quantities for required project boundary buffers are shown in ~~the table below~~ Table 107.70.2. Substitution of plant materials may be allowed pursuant to Table 107.70.3 provided the character and intent of the buffer is not diminished. General arrangement of plant material within buffers shall be required to substantially comply with the latest edition of the City of Marathon Landscape Design Manual, adopted herein by reference.

b.c. The TRC may reduce the required buffer width by up to 50 percent where it can be shown by the applicant that the reduction is warranted by unique site features or characteristics. This would include, but is not limited to, situations where the buffer would be located adjacent to a waterbody or open space area or if a permanent buffer exists on the adjacent property.

e.d. The following additional buffering shall be provided where off-street loading exists:

- i. Loading bay areas shall be screened from any residential district.
- ii. In the MU land use districts, off-street loading shall be screened from US1.

Table 107.7066.1
Project Boundary Buffer Standards

Zoning District of Subject Property	Zoning District of Adjacent Property														
	A	C-NA	C-OI	I-G	I-M	MU	MU-M	PR	P	R-MH	RH	RM	RM-1	RL	RLC
A	N/A	H	H	H	H	H	H	H	H	H	H	H	H	H	H
C-NA	H	N/A	M	H	H	H	H	H	H	H	H	H	H	H	H
C-OI	H	M	N/A	H	H	H	H	H	H	H	H	H	H	H	H
I-G	H	H	H	N/A	L	H	H	H	H	H	H	H	H	H	H
I-M	H	H	H	H	N/A	M	M	H	H	H	H	H	H	H	H
MU	H	H	H	H	M	N/A	L	M	M	M	M	H	H	H	H
MU-M	H	H	H	H	M	L	N/A	M	L	M	M	H	H	H	H
PR	H	H	H	H	H	M	M	N/A	L	M	M	H	H	H	H
P	H	H	H	H	H	M	L	L	N/A	M	M	H	H	H	H
R-MH	H	H	H	H	H	M	M	M	M	N/A	M	M	H	H	H
R-H	H	H	H	H	H	M	M	M	M	M	N/A	M	L	L	L
RM	H	H	H	H	H	H	H	H	H	M	M	N/A	M	M	L
RM-1	H	H	H	H	H	H	H	H	H	H	H	M	N/A	M	L
RL	H	H	H	H	H	H	H	H	H	H	H	M	M	N/A	L
RL-C	H	H	H	H	H	H	H	H	H	H	H	H	L	L	N/A

Table 107.70.2
Project Boundary Buffer Minimum Width and Planting Requirements

Buffer Type	Minimum Width	Canopy Tree	Understory Tree	Non-Deciduous	Shrub	Screening
L-Low	10 feet	2	6	0	6	No
M-Medium	15 feet	4	2	2	16	No
H-High	20 feet	10	5	5	30	Yes

Buffer Type	Buffer Width	Large Tree Qty	Medium Tree Qty	Large Shrub Qty	Medium Shrub Qty	Small Shrub Qty	Ground Cover Qty	Large Palm Qty	Medium Palm Qty
L1	10'	0	5	4	8	26	48	-	-
L2	10'	0	4	0	9	24	72	-	-
L3	10'	3	4	0	6	18	60	-	-
L4	10'	0	4	0	6	24	42	-	-
M1	15'	2	2	6	6	25	92	-	-
M2	15'	3	4	6	6	29	28	-	-
M3	15'	3	4	0	12	18	80	-	-
M4	15'	0	3	0	10	29	48	-	-
M5	15'	0	0	6	17	28	30	-	9
H1	20'	3	0	0	12	42	74	-	-
H2	20'	3	2	9	10	15	54	-	-
H3	20'	2	2	0	6	36	108	-	-
H4	20'	2	4	9	16	32	27	-	3
H5	20'	3	4	9	16	34	27	-	-
H6	20'	0	3	10	12	24	50	-	-

Table 107.70.3			
<u>Landscape Buffer Substitutes</u>			
Buffer Type	Landscape Buffer Possible Substitutes	Tree and Palm Substitute Equivalents	
		Option 1	Option 2
L1	40% Medium Trees	1 Medium Tree= 1 Large Palm	1 Medium Tree= 3 Medium Palms
L2	None	N/A	N/A

<u>L3</u>	<u>50% Medium Trees</u>	<u>1 Medium Tree= 1 Large Palm</u>	<u>1 Medium Tree= 3 Medium Palms</u>
<u>L4</u>	<u>50% Medium Trees</u>	<u>1 Medium Tree= 1 Large Palm</u>	<u>1 Medium Tree= 3 Medium Palms</u>
<u>M1</u>	<u>None</u>	<u>N/A</u>	<u>N/A</u>
<u>M2</u>	<u>50% Medium Trees</u>	<u>1 Medium Tree= 1 Large Palm</u>	<u>1 Medium Tree= 3 Medium Palms</u>
<u>M3</u>	<u>50% Medium Trees</u>	<u>1 Medium Tree= 1 Large Palm</u>	<u>1 Medium Tree= 3 Medium Palms</u>
<u>M4</u>	<u>None</u>	<u>N/A</u>	<u>N/A</u>
<u>M5</u>	<u>30% Large Shrubs</u>	<u>2 Large Shrubs = 3 Medium Palms</u>	<u>1 Large Shrub= 3 Small Palms</u>
<u>H1</u>	<u>None</u>	<u>N/A</u>	<u>N/A</u>
<u>H2</u>	<u>50% Medium Trees</u>	<u>1 Medium Tree= 1 Large Palm</u>	<u>1 Medium Tree= 3 Medium Palms</u>
<u>H3</u>	<u>None</u>	<u>N/A</u>	<u>N/A</u>
<u>H4</u>	<u>30% Large Trees</u>	<u>1 Large Tree = 1 Large Palm</u>	<u>1 Large Tree = 3 Medium Palms</u>
<u>H5</u>	<u>50% Medium Trees</u>	<u>1 Medium Tree= 1 Large Palm</u>	<u>1 Medium Tree= 3 Medium Palms</u>
<u>H6</u>	<u>30% Medium Trees</u>	<u>1 Medium Tree= 1 Large Palm</u>	<u>1 Medium Tree= 3 Medium Palms</u>

Table 107.70.4
Landscape Material Installation Specifications

<u>MATERIAL TYPE</u>	<u>MINIMUM SPACING</u>	<u>INSTALL CALIPER</u>	<u>INSTALL HEIGHT</u>	<u>CANOPY SPREAD</u>
<u>LARGE TREES</u>	<u>20'- 40'</u>	<u>4"</u>	<u>12'-14'</u>	<u>8'-10'</u>
<u>MEDIUM TREES</u>	<u>15'- 40'</u>	<u>2 1/2"</u>	<u>10'-12'</u>	<u>6'-8'</u>
<u>LARGE SHRUBS</u>	<u>10'- 15'</u>	<u>NA</u>	<u>8'-10'</u>	<u>4'-6'</u>
<u>MEDIUM SHRUBS</u>	<u>5'- 10'</u>	<u>NA</u>	<u>24"-36"</u>	<u>24"-36"</u>
<u>SMALL SHRUBS</u>	<u>3'- 5'</u>	<u>NA</u>	<u>24"-36"</u>	<u>24"-36"</u>

3. *Project Boundary Buffer Standards:*

- a. Examples of appropriate species for planting in buffers are listed in Table 107.68.1, and 107.68.2
- b. Plant materials and installation shall meet the requirements of Section 107.68, Section 107.69 and meet the minimum ranges for spacing, caliper, height and canopy spread as listed in Table 107.70.4
- c. The required planting shall generally be spaced or grouped to provide a natural appearance. The required planting shall be evenly spaced to provide a natural appearance.
- d. The plant materials specified in Table 107.70.2 ~~is represent~~ the minimum materials required per 100 linear feet of buffer; the total quantity of materials required shall be determined by dividing the actual length of the buffer.

- e. ~~Canopy-Large~~ trees shall be planted no closer than four (4) feet from any property line.
- f. Shrubs ~~shall-should~~ be selected that provide a variety of heights at maturity.
- g. Where screening is required or proposed in conjunction with a project boundary buffer (side and rear buffers) ~~as indicated in Table 107.70.1,~~ it shall consist of one (1) of the following:
 - i. A six-foot tall masonry wall;
 - ii. A six-foot tall opaque fence, such as vinyl or wood (no chain-link);
 - iii. Existing dense vegetation not invasive, at least six (6) feet in height; or
 - iv. A berm three (3) feet in height, located entirely within the dense buffer and planted with materials that at maturity shall reach a combined minimum height of six (6) feet.
- h. The location of the wall, fence or berm within the buffer strip shall be subject to TRC determination.
- i. Pedestrian connections through walls or fences that can provide access to adjacent neighborhoods or other uses are encouraged.
- j. Walls and fences shall be landscaped along the entire exterior side so that one-third (1/3) or more of the vertical face of the fence or wall is screened by plantings. The applicant shall be required to demonstrate provision for access and maintenance of landscaping at the time of landscape or planting approval.
- k. Walls and fences more than 60 feet long shall have varying wall alignments, use appropriate scale/massing for planted materials, and include decorative features and sound absorbing or scattering materials.
- l. When a berm is used to form a visual screen in lieu of or in conjunction with a hedge or wall, such berm shall have a stabilized slope of one to three (1:3) rise/run and shall be completely covered with shrubs, sod or other landscape quality living ground cover.
- m. Existing non-invasive vegetation may be used to fulfill buffering and screening requirements where such existing natural vegetation is of sufficient height or can be augmented to reach a sufficient height and opacity to provide an effective visual and acoustical buffer giving consideration to the existing and proposed uses.

Roadway Buffers: Specific roadway buffers shall be required as established in [Section 107.71](#), "Streetscape Treatment Types" below. Any vegetation planted near driveways and road intersections shall be selected so that the requirements in Article 5, [Section 107.43](#) for clear sight triangle can be met.

B. *Measurements:*

1. Driveway widths (measured at the inside edge of the buffer) shall not be counted in the calculation of the plant material required.
2. All buffers shall be measured from the future right-of-way line determined during the site plan review, unless additional public utility easement is required between the right-of-way line and the buffer to provide utility clearance.

Section 107.71. Streetscape Treatment Types.

Streetscape treatments encompass the organization of outdoor space and all elements creating that space, including trees and vegetation, parking areas, hardscape structures such as fences, walls, furniture, and sidewalks, and the correct orientation and proper scale of building facades. Streetscape treatment shall be applied to the front setback, in particular those fronting a street or road.

The following streetscape treatment types shall apply throughout the City:

- A. *Type 1: (A, MU, MU-M, P, PR zoning districts):* It is the expressed intent of Streetscape Treatment Type 1 to provide an environment which mitigates the impacts of automobile-oriented areas in order to make them more livable. This includes reduction of visual clutter, including signage and location of auto parking areas, and the provision of landscaping to enhance and soften the environment through the provision of screening, shade, and buffers. It shall apply to all parcels along US 1, with the exception of the Old Town area.
 - 1. The landscape treatment area shall be prescribed from the buffer types found in Table 107.70.2. The buffer type and minimum width shall be determined by average depth of the property or parcel being developed, redeveloped or substantially improved and shall be prescribed from Table 107.71.1.
 - 2. Minimum width and planting quantities for required Streetscape Treatment Types are shown in Table 107.70.2. Substitution of plant materials may be allowed pursuant to Table 107.70.3 provided the character and intent of the streetscape treatment is not diminished. A single substitution is permitted per 100 linear feet. General arrangement of plant material within buffers shall be required to substantially comply with the latest edition of the City of Marathon Landscape Design Manual, adopted herein by reference.
 - 3. Plant materials and installation shall meet the requirements of Section 107.68, Section 107.69, Section 107.70.A.3 and shall meet the minimum ranges for spacing, caliper, height and canopy spread listed in Table 107.70.4

Table 107.71.1

<u>Average Lot Depth</u>	<u>Streetscape Buffer width</u>
<u>≤ 101 feet</u>	<u>L- Low</u>
<u>>101 - 299 feet</u>	<u>M- Medium</u>
<u>> 300 feet</u>	<u>H- High</u>

- ~~1. be planted within a ten foot wide buffer predominantly with shrubs and native canopy trees of at least two (2) inches caliper at breast height, approximately 50 feet on center.~~
- ~~2. A minimum of four (4) understory trees per 240 feet of frontage, or fraction thereof, shall be planted in and about access points. In addition smaller accent trees shall be planted every 120 feet and staggered midway between the large canopy trees.~~
- ~~3.4. Large Canopy and understory medium trees shall be placed in compliance with Section 107.66.A.1, wherever applicable. so as to provide at least 50 percent canopy coverage of sidewalks along US1, except where prohibited by overhead utility restrictions or as required to preserve the water view when traveling along the highway.~~
- 4.5. Plantings within utility easements shall be consistent with any such easement agreement dictating type and height of such plantings at maturity. Plantings of shrubs and small trees may be located within the utility easement upon agreement and approval of FKAA and FKEC only. When the utility easement is narrow, the plantings shall be placed on the road side of the easement. In such instances

the planting area shall be a minimum width of five (5) feet between the back of the curb and the sidewalk, in accordance with the Florida Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, latest edition, incorporated in Rule 14-15.002, F.A.C.

- ~~5.6.~~ Parking spaces shall not be placed on the front of parking lots abutting US1.
- ~~6.7.~~ All parking not located to the rear of buildings shall be screened from the right-of-way by a landscaped buffer along US1, ~~including a continuous hedge or combination hedge and earth berm providing a three-foot high visual screen within two (2) years of planting.~~
- ~~7.8.~~ Parcels which propose drive-thru windows shall be sited so as to locate such windows to the side or rear of buildings and that the drive isles for those windows be predominantly to the side and rear also.
- B. *Type 2: (MU, MU-M):* Detailed design of the streetscape shall be accomplished in concert with the architectural design, specific use standards, streetscape design, and special parking requirements. It shall be applied to the Old Town area along US 1 only.
1. *Parking Standards:*
 - a. Parking lots shall be located at the rear or side of street-front uses and shall be screened from the streets, sidewalk, and open spaces by low walls, fences, or low berms in combination with plantings to achieve at least a three-foot high visual screen. Walls or fences must be softened through use of vegetation.
 - b. Parking lots and parking garages shall not abut street intersections, be adjacent to squares or parks, or occupy lots that terminate at a vista, except when specifically designed to incorporate massing, scale, and detail that contributes to the adjoining public space.
 - c. Adjacent parking lots shall have vehicular connections and shared street access wherever possible.
 2. *Land Use Standards:*
 - a. All open spaces, including public, conservation, and community spaces, shall be a focal element around which other land uses are organized.
 - b. Provisions for alternative transportation shall be included in the overall design including specific accommodations for integration of mass transit facilities.
 - c. Development shall be divided into an interconnected grid system.
 - d. Appropriate locations for all pedestrian/bicycle access ways shall encourage a continuous system of access. Proposed pedestrian/bicycle access shall connect to existing pedestrian/bicycle access in appropriate manner.
 3. *Required Tree Plantings:*
 - a. Native canopy street trees shall be required along both sides of US1. Spacing is determined by species type. Unless the planting of the canopy tree will interfere with the water views when traveling along US1, street trees shall be spaced an average of 40 feet on center. Examples of appropriate canopy trees are identified in Table 107.68.1.
 - b. All planting shall be coordinated with existing and planned utilities and their infrastructure in such a way as to not interfere with those utilities.
 - c. Street trees shall be planted between the street and the sidewalk whenever space permits to protect pedestrians and calm traffic. In such instances the planting area shall be a minimum width of five (5) feet between the back of the curb and the sidewalk, in accordance with the Florida Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, latest edition, incorporated in Rule 14-15.002, F.A.C.

C. ~~Street Treatment~~ Type 3: (All zoning districts on other City streets):

1. All multi-family and nonresidential developments shall be required to provide ~~one (1) of the following buffers~~ a Low type buffer prescribed from the buffer types found in Table 107.70.2 along the entire street frontage:
 - a. Minimum width and planting quantities for required Streetscape Treatment Types are shown in Table 107.70.2. Substitution of plant materials may be allowed pursuant to Table 107.70.3 provided the character and intent of the streetscape treatment is not diminished. A single substitution is permitted per 100 linear feet. General arrangement of plant material within buffers shall be required to substantially comply with the latest edition of the City of Marathon Landscape Design Manual, adopted herein by reference.
 - b. Plant materials and installation shall meet the requirements of Section 107.68, Section 107.69, Section 107.70.A.3 and shall meet the minimum ranges for spacing, caliper, height and canopy spread listed in Table 107.70.4
 - a. Two (2) canopy trees and two (2) understory trees per 100 linear feet of property frontage, located within a ten-foot wide landscape buffer. Spacing of canopy trees will be determined by species, but in no case shall they be planted further than 40 feet on center. Examples of appropriate canopy trees are identified in Table 107.68.1.
 - b. Under utility lines only, four (4) understory trees per 100 linear feet of property frontage, located within a ten-foot wide landscape buffer.
2. All single- and two-family residential uses shall be required to ~~provide a minimum of two (2) canopy street trees for every 100 linear feet of property frontage along local streets. Spacing will be determined by species, but in no case shall they be planted further than 50 feet on center. Examples of appropriate canopy trees are identified in Table 107.68.1~~ comply with Section 107.69.C-E., when applicable and Section 107.72.
3. Utility allocations shall be designed to provide utilities' required separation between trees and utility facilities.
4. Street trees shall be planted between the street and the sidewalk whenever space permits to protect pedestrians and calm traffic. In such instances the planting area shall be a minimum width of five (5) feet between the back of the curb and the sidewalk, in accordance with the Florida Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, latest edition, incorporated in Rule 14-15.002, F.A.C.
5. For streets without curbing, all street trees shall be planted no further than ten (10) feet from the back of right-of-way.

Section 107.72 Residential Requirements

(A) Notwithstanding the requirements in Section 107.71.C above, all new and substantially improved residential development, as defined in Section 107.100, shall comply with the following standards:

(1) All one-family detached lots that are twelve thousand (12,000) square feet or larger shall be planted as follows:

(i) Plant a minimum of four (4) large trees and three (3) medium trees or palms per lot.

(ii) At least two (2) of the large trees shall be planted on the south and/or west and/or east side and within thirty (20) feet, where feasible, of the residential structure.

(iii) At least one (1) of the required large trees and one (1) of the medium trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street. This shade tree may also count toward fulfillment of the landscaping for energy conservation requirement in (ii), above, if located in accordance with such requirement.

(2) All one-family detached lots that are seven thousand, five hundred (7,500) square feet or larger but less than twelve thousand (12,000) square feet shall be planted as follows:

(i) Plant a minimum of three (3) large trees and three (3) medium trees or palms per lot.

(ii) At least one (1) of the large trees shall be planted on the south and/or west and/or east side and within thirty (20) feet, where feasible, of the residential structure.

(iii) At least one (1) of the required large trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street. This large tree may also count toward fulfillment of the landscaping for energy conservation requirement in (ii), above, if located in accordance with such requirement.

(3) All one-family detached lots that are larger than four thousand, five hundred (4,500) square feet but less than seven thousand, five hundred (7,500) square feet shall be planted as follows:

(i) Plant a minimum of three (3) large trees and three (2) medium trees or palms per lot.

(ii) At least one (1) of the large trees shall be planted on the south and/or west and/or east side and within thirty (20) feet, where feasible, of the residential structure.

(iii) At least one (1) of the required large or medium trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street. This large tree may also count toward fulfillment of the landscaping for energy conservation requirement in (ii), above, if located in accordance with such requirement.

(4) All one-family detached lots that are four thousand, five hundred (4,500) square feet or less in size shall be planted as follows:

(i) Plant a minimum of two (2) large trees and two (2) medium trees or palms per lot.

(ii) At least one (1) of the required large or medium trees shall be located in the front yard or, in the case of a corner lot, in the front or side yard facing the street.

(5) Townhouses, One-Family Attached and Duplex Dwellings, Arranged side-by side shall be planted as follows:

(i) Plant a minimum of one and one-half (1.5) large trees and one (1) medium tree per dwelling unit located on individual lots and/or common open space to best fulfill the objectives and design guidelines of this section.

(6) Townhouses, One-Family Attached and Duplex Dwellings, Arranged over-under shall be planted as follows

(i) Plant a minimum of two (2) large trees and one and one-half (1.5) medium trees per dwelling unit located in common open space to best fulfill the objectives and design guidelines of this section. Fractional amounts shall be rounded up.

(B) An existing native tree, equal or exceeding four (4) inches diameter at breast height (dbh) located on an individual lot within thirty (20) feet of a dwelling unit may be counted toward fulfillment of the requirement for a tree on that lot, provided that the size (dbh), genus, condition, and location of each tree to be counted toward the fulfillment of this requirement is shown on the landscape plan. The site and landscape plan must also demonstrate that a minimum of seventy percent (70%) of the critical root zone of such tree will remain undisturbed. The Critical Root Zone (“CRZ”) of a tree shall be determined by the drip line of the canopy.

(C) When a project boundary buffer as required by Section 107.70 Landscape Buffer Requirements, is located on a single-family detached lot, the following shall apply:

(1) If less than twenty percent (20%) of the area of the lot is occupied by the buffer strip, none of the trees required by Section 107.72 may be located in the buffer strip.

(2) If more than twenty percent (20%) of the area of the lot is occupied by the buffer strip, one (1) of the large trees or two (2) of the medium trees required by Section 107.72, Residential Requirements, may be located in the buffer strip and may also count toward fulfillment of the boundary buffer requirement.

Section 107.7273. Alternative Compliance.

~~(a)~~(a) The provisions of this article shall be liberally construed to effectively carry out the purpose and the intent of the Plan and of this article in the interest of the health, safety and welfare of the residents of the City.

~~(b)~~(b) An applicant may submit a landscape or planting plan which varies from the strict application of the requirements of this article in order to accommodate unique site features, or characteristics, the preservation of water views or to utilize innovative design.

~~(c)~~(c) An alternative compliance landscape or planting plan may be approved only upon a finding that it fulfills the purpose and intent of the Plan and of this article as well as or more effectively than would adherence to the strict requirements.

~~(d)~~(d) In evaluating proposed alternative compliance landscape or planting plans, considerations shall be given to proposals which preserve existing native vegetation and use ~~xeriscape~~-Florida Friendly and other low water use landscape design principles and where the design ensures the maximum preservation of existing vegetation on the site.

B.C. **Natural Vegetation:** The preservation and utilization of a site's ~~natural~~-native trees, understory, and other vegetation shall be incorporated into the overall site development and planting plans to the greatest extent practicable.

C.D. **Xeriscaping Florida Friendly Landscapes:** The following table lists those principles that shall be utilized ~~by the TRC~~ in the ~~preparation~~, review, evaluation, and approval of all required landscape plans. These principles shall only be required to apply to new construction or substantial improvements, as applicable.

Table 107.69.1

Florida Friendly Landscape Requirements (R= Compliance Required, O= Compliance Optional)	Non- Residential	Residential
1. <u>Site Planning and Design:</u>	<u>R</u>	<u>O</u>
<u>a. The Site Plan shall consider natural drainage features to minimize runoff. The use of pervious surfaces and areas is preferred. Therefore impervious surfaces and materials within the landscaped area shall be limited to borders, sidewalks, stepping stones, and other similar elements of design and shall not exceed 15 percent of the landscaped area. Use of pervious paving materials is strongly encouraged and relative imperviousness will be considered.</u>	<u>R</u>	<u>O</u>
<u>b. Site plans shall identify all vegetated areas to be preserved, including but not limited to water resource and wetland buffers adjoining all waters of the state. Such buffers should be native, or if previously disturbed, constructed in accordance with USDA-NRCS conservation practices. Water resource and wetland buffers shall comply with Section 106.28 in order to protect water bodies from nonpoint source pollution generated by up gradient development.</u>	<u>R</u>	<u>O</u>
<u>c. All invasive exotic plant species shall be noted on the Site Plan and be removed from each site prior to the beginning of construction. For purposes of determining plant species to remove, refer to Department of Agriculture and Consumer Services "Noxious Weeds" rule Chapter 5B-57, F.A.C. and the Florida Keys Exotic Invasive Task Force rules and guidelines.</u>	<u>R</u>	<u>O</u>
<u>d. Gravel, river rock, shell and similar materials shall not be used as a major landscape ground cover or mulch as they increase the need for herbicide use, have no habitat value, reflect rather than absorb heat, do not produce oxygen like plants and the runoff from crushed gravel results in high turbidity in near shore waters, resulting in layers of silt, which can kill off sea grass, corals and marine life. In no case may the use of these materials exceed 30 percent of the total pervious site area.</u>	<u>R</u>	<u>O</u>

<p>e. <u>The solar orientation of the property and its relationship to other properties should be considered as this may produce different microclimate exposures (e.g., sun vs. shade, southern vs. northern exposure, surrounded by heat-reflective surfaces, etc). When preparing a landscape plan, consideration should be given to the proper selection and placement of tree species near buildings to minimize building heating and cooling requirements. When located appropriately, trees of adequate size, quality, canopy, and form can decrease energy consumption in buildings in the summer by reducing heat absorption and in the winter by allowing for passive solar heating and providing protection from the wind. Maximum cooling savings will result when deciduous trees are planted to shade the eastern and/or western wall and windows of buildings. To shade the roof or wall of a one-family residential structure, for example, trees that will mature to a medium-to-large size should be planted within thirty (30) feet of the structure. Smaller trees can also be planted closer to the house and used to shade walls and window areas.</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>f. <u>The Landscape Construction Documents shall be drawn to scale and include property boundaries, north arrow, graphic scale, and date. They shall also include, but not be limited to the following :</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>i. <u>Location of all underground and above ground utilities and boxes including overhead utilities;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>ii. <u>Existing and proposed trees, shrubs, ground covers and turf areas within the developed landscape area;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>iii. <u>Plants by botanical and common name, where applicable cultivar name, plant spacing, quantities of plant for each type, planted sizes including notation of field grown or container size, and mature height and spread of each plant;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>iv. <u>Existing and proposed property lines, streets, street names and public utilities;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>v. <u>Existing and proposed hardscape features such as driveways, patios, and sidewalks as necessary as well as existing or proposed nonorganic mulched areas;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>vi. <u>Existing and proposed structures such as pools, fountains, fences and retaining walls;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>vii. <u>Existing and proposed buildings;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>viii. <u>Tabulation of the total square footage(s) of the various landscape hydrozones on the plan. If more than one (1) water meter serves the site, the total hydrozone square footages of all the various hydrozones must be identified with each Point of Connection (POC) and meter providing water service.</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>g. <u>Irrigation plans must be designed to recognize differential irrigation requirements of the landscape as described in this article. It is suggested that As-Built construction documents be submitted prior to issuance of the Certificate of Occupancy, with a copy delivered to the property owner. This will help to prevent later damage from digging by utility workers or the property owner and assist the owner with understanding the system design. The irrigation plan shall include the following:</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>i. <u>Irrigation point(s) of connection and design capacity;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>
<p>ii. <u>Water service pressure at irrigation POCs;</u></p>	<p><u>R</u></p>	<p><u>O</u></p>

iii. <u>Water meter size;</u>	<u>R</u>	<u>O</u>
iv. <u>Reduced-pressure-principle backflow-prevention devices for each irrigation POC on potable water systems;</u>	<u>R</u>	<u>O</u>
v. <u>Major components of the irrigation system shall include, but not be limited to; pumps, filters, valves, mainline pipes, lateral pipes, controllers, tubing, and pipe sizes;</u>	<u>R</u>	<u>O</u>
vi. <u>Precipitation rate expressed in inches per hour for each valve circuit. The preparer must attach to the Project Data Sheet the calculations for deriving precipitation rates for each irrigation valve circuit;</u>	<u>R</u>	<u>O</u>
vii. <u>Total flow rate (flow velocity not to exceed five (5) feet per second) in gallons per minute (gpm) and operating pressure (psi) for each individual overhead and bubbler circuit, and gallons per hour (gph) and operating pressure for low-flow point irrigation circuit;</u>	<u>R</u>	<u>O</u>
<u>elements: Separate symbols for all irrigation equipment. For each irrigation head type the legend shall show coverage patterns, precipitation rates, operation pressure requirements, gallons required and associated time periods, brand and model names, and pressure compensating devices (if applicable). A general description of all other equipment, including brand name and model number, sizes, special features, and materials. For all specified equipment for low-flow systems the legend shall contain recommended operating pressure, brand name and model names, precipitation rates, distribution patterns, and spacing of emitters or drip tubing;</u>	<u>R</u>	<u>O</u>
ix. <u>The same requirements for use of a recycled water irrigation system shall apply. Reclaimed water, grey water, or other nonpotable water shall be used for irrigation provided an acceptable source for that water is available and identified by the City;</u>	<u>R</u>	<u>O</u>
x. <u>Identify location of the rain shut-off devices and any soil moisture sensors;</u>	<u>R</u>	<u>O</u>
xi. <u>The irrigation system must clearly account for any slopes over ten (10%) percent and any elevation differences over five (5) feet. If the irrigation plan does not clearly show design for these situations, a grading plan may be required which shall indicate all finish grades by either spot elevations or contours or both along with drainage patterns within the developed irrigated area.</u>	<u>R</u>	<u>O</u>
<u>2. Soils:</u>	-	-
a. <u>Analysis: When required, as determined by the City Biologist, a soil analysis shall provide the following information, at a minimum:</u>	<u>R</u>	<u>O</u>
i. <u>Determination of soil texture, indicating the percentage of organic matter;</u>	<u>R</u>	<u>O</u>
ii. <u>Measurement of pH of the soil, and total soluble salts; and</u>	<u>R</u>	<u>O</u>
iii. <u>Estimated soil infiltration rate.</u>	<u>R</u>	<u>O</u>
b. <u>Use of Existing Top Soil: Existing horticulturally suitable topsoil shall be stockpiled and re-spread during final site grading. Any new soil required shall be similar to the existing soil in pH, texture, permeability, and other characteristics, unless a Soil Analysis provides evidence that either soil amendment is needed or a different soil type is required. The use of solid waste compost as a soil amendment is encouraged where it is appropriate.</u>	<u>R</u>	<u>O</u>

<u>3. Land Clearing Standards and Preservation of Native Vegetation:</u>	-	-
a. <u>Unless otherwise approved by the City, clearing of a site shall preserve all native vegetation.</u>	R	O
b. <u>Vegetation which is set aside for preservation shall be protected from all on-site construction. Protective barriers shall be installed along the perimeter of all preserve areas. Protective barriers shall be constructed at such intervals to prevent machinery from passing between them.</u>	R	O
c. <u>No equipment or materials shall be permitted to be stored within the set-aside areas, and dumping of excess soil, liquids, or any other construction debris within the preservation areas is prohibited.</u>	R	O
d. <u>Removal or re-grading of soils within preservation areas is prohibited.</u>	R	O
e. <u>Any damaged vegetation within the set-aside areas shall be replaced with vegetation equivalent to the vegetation destroyed before any certificates of occupancy or other approvals may be issued.</u>	R	O
<u>4. Appropriate Plant Selection, Location, and Arrangement:</u>	-	-
a. <u>Appropriate Plant Selection: Plant selection should be based on the plant's adaptability to the existing conditions present within the planted area and the Keys native plant communities. Plant species that are drought tolerant are preferred. For purposes of determining prohibited and controlled plant species refer to the Department of Agriculture and Consumer Services rule, Chapter 5B-57 Florida Administrative Code. Plants named in this rule may not be used except as allowed in Chapter 5B-57.</u>	R	O
b. <u>Location: Plants shall be grouped in accordance with their respective water and maintenance needs. Plants with similar water and cultural (soil, climate, sun, and light) requirements shall be grouped together. Where natural conditions are such that irrigation is not required, the presence of site appropriate plants shall not be considered a high water use hydrozone.</u>	R	O
c. <u>Arrangement: The combined size of all high water use hydrozones shall be limited to 30 percent of the total planted area including turf. In planted areas irrigated with recycled water, the allowable size of all high water use zones shall be increased to not more than 60 percent of the total planted area including turf. These high water use limits do not apply to planted areas requiring large amounts of turf for their primary functions, e.g., ballfields and playgrounds; soil moisture sensors shall be installed in these areas.</u>	R	O
<u>5. Turf Areas:</u>	-	-
a. <u>Type and Location: The type of turf shall be selected from c.1, below and the location of turf areas shall be chosen in the same manner as with all the other plantings. Irrigated turf areas, as opposed to non-irrigated turf areas, are considered to be a high water use hydrozone. Irrigated turf shall not be treated as a fill-in material but rather as a planned element of the landscape. Turf shall be placed so that it can be irrigated using separate zones.</u>	R	O

b. <u>Arrangement: While turf areas provide many practical benefits in a landscape, how and where it is used can result in a significant reduction in water use. Irrigated turf grass areas shall be consolidated and limited to those areas on the site that receive pedestrian traffic, provide for recreation use, provide cover for waste treatment drainfields and required drainfield reserve areas, or provide soil erosion control such as on slopes or in swales; and where turfgrass is used as a design unifier, or other similar practical use.</u>	R	O
c. <u>No turf grass that requires mowing shall be allowed on slopes greater than 4:1 or within ten (10) feet of the water's edge. For turf areas (where a planting plan is required), areas shall be identified on the plan by biological and common name and by variety and by the square footage covered by the turf.</u>	R	O
<u>1. Turf Types Appropriate for the Keys</u>		
<u>St. Augustine</u>	-	-
<u>Bermuda</u>	-	-
<u>Zoysia</u>	-	-
<u>Bahia</u>	-	-
<u>6. Efficient Irrigation:</u>		
a. <u>Design Guidelines: An irrigation system shall be designed and constructed in accordance with the Site Planning and Design Requirements of this Article. All irrigation installations after the effective date of this ordinance shall meet the irrigation standards identified per 373.228 F.S. These include:</u>		
i. <u>Irrigation systems shall be designed to meet the needs of the plants in the landscape (not the other way around).</u>	R	O
ii. <u>Whenever feasible, irrigation systems shall be designed to separately serve turf and non-turf areas.</u>	R	O
iii. <u>The irrigation system plans and specifications shall identify the materials to be used and the construction methods.</u>	R	O
iv. <u>The design shall consider soil, slope, and other site characteristics in order to minimize water waste, including overspray, the watering of impervious surfaces and other non-vegetated areas, and off-site runoff.</u>	R	O
v. <u>The system shall be designed to minimize free flow conditions in case of damage or other mechanical failure.</u>	R	O
vi. <u>The system shall be designed to use the lowest quality water feasible.</u>	R	O
vii. <u>Rain switches or other approved devices, such as soil moisture sensors, to prevent unnecessary irrigation, shall be incorporated. (Section 373.62, F.S.)</u>	R	O
viii. <u>A recommended seasonal operating schedule and average precipitation rates for each irrigation zone for both establishment and maintenance conditions shall be provided.</u>	R	O
ix. <u>Control systems shall provide the following minimum capabilities:</u>		
i. <u>Ability to be programmed in minutes, by day of week, season and time of day.</u>	R	O
ii. <u>Ability to accommodate multiple start times and programs</u>	R	O
iii. <u>Automatic shut off after adequate rainfall,</u>	R	O
iv. <u>Ability to maintain time during power outages for a minimum of three days</u>	R	O
v. <u>Operational flexibility to meet applicable year-round water conservation requirements and temporary water shortage restrictions.</u>	R	O
x. <u>Recommended maintenance activities and schedules shall be included.</u>	R	O

protect against system failure during pressure surges, and to avoid wasted water due to operation of the system significantly above commonly used design values.]

7. Yard Waste Management, Composting and Use of Mulches:

a. Yard Waste Management: In no case shall grass clippings, vegetative material, and/or vegetative debris be washed, swept, or blown off into stormwater drains, ditches, conveyances, water bodies, wetlands, or sidewalks or roadways. Any material that is accidentally so deposited shall be immediately removed to the maximum extent practicable. Yard wastes shall not be stored by shorelines, in ditches or swales, or near storm drains. [Rationale: Yard wastes release nutrients as they decompose which may pollute the receiving water. Improper disposal of yard wastes can also contribute to flooding by causing stormwater runoff to backup in drainage systems. In addition, improper disposal may lead to spreading of invasive plants to new areas.]

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b. Composting: Shredded yard clippings and leaves should be used for mulch or be composted for use as fertilizer. Diseased organic material should not be stored, composted or used as mulch and should be properly disposed of to avoid spreading disease.

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c. Use of Mulches:

i. Composting of organic yard wastes provide many benefits and their use is strongly encouraged. The resulting materials are excellent soil amendments and conditioners. Other recycled organic solid waste products are also available and should be used when appropriate.

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ii. Grass clippings are a benefit to lawns by replacing nutrients drawn from the soil and as mulch that helps retain moisture lessening the need to irrigate. Grass clippings should be left on the lawn. Mulching mowers are recommended, because the grass clippings are chopped very finely by special blade and shroud configurations.

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iii. If a conventional mower equipped with a side discharge chute is used, the following practices should be employed. When mowing near the shoreline, direct the chute away from the waterbody. When mowing upland areas, direct the chute back onto the yard, not onto the road or driveway.

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iv. Other mulches (except grass clippings) can be applied and maintained at appropriate depths in planting beds to assist soils in retaining moisture, reducing weed growth, and preventing erosion. These mulches can also be used in places where conditions aren't adequate for or conducive to growing quality turf or ground covers. Mulches are typically wood bark chips, wood grindings, pine straws, nut shells, and shredded landscape clippings.

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v. A layer of organic mulch three (3) inches deep shall be specified on the planting plans in plant beds and around individual trees in turfgrass areas. Use of a byproduct or recycled mulch is recommended. Mulch is not required in annual beds.

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vi. <u>Mulch rings should extend to at least three (3) feet around freestanding trees and shrubs.</u>	R	O
vii. <u>All mulch should be renewed periodically.</u>	R	O
viii. <u>Mulches should be kept at least six (6) inches away from any portion of a building or structure. Mulches should be kept two to four (2—4) inches away from all tree trunks and certain types of shrubs and ground covers.</u>	R	O
ix. <u>Plastic or other impervious materials shall not be used under mulched areas.</u>	R	O
8. <u>Installation and Maintenance: All planting, excluding private residences, shall be installed according to accepted commercial planting procedures and executed by a qualified and licensed landscape contractor using the quality and type of materials recommended by the City Biologist and stated herein.</u>	R	O
1. <u>Site Planning and Design:</u>		
a. The Site Plan shall consider natural drainage features to minimize runoff. The use of pervious surfaces and areas is preferred. Therefore impervious surfaces and materials within the landscaped area shall be limited to planting borders, sidewalks, stepping stones, and pedestrian seating and shall not exceed 35 percent of the landscaped area. Use of pervious paving materials is strongly encouraged even for these limited uses which will decrease the relative impervious area of the site.		
b. Site plans shall identify all vegetated areas to be preserved		
c. All invasive exotic plant species shall be noted on the Site Plan and be removed from each site prior to the beginning of construction. For purposes of determining plant species to remove, refer to Department of Agriculture and Consumer Services "Noxious Weeds" rule Chapter 5B-57, F.A.C. and the Florida Keys Exotic Invasive Task Force rules and guidelines.		
d. Gravel, river rock, shell and similar materials shall not be used as a major landscape ground cover or mulch as they increase the need for herbicide use, have no habitat value, reflect rather than absorb heat, do not produce oxygen like plants and the runoff from crushed gravel results in high turbidity in near shore waters, resulting in layers of silt, which can kill off sea grass, corals and marine life. In no case may the use of these materials exceed 30 percent of the total pervious site area.		
e. The Landscape Construction Documents shall include, but not be limited to the following:		
i. Location of all underground and above ground utilities and boxes including overhead utilities;		
ii. Existing and proposed trees, shrubs, ground covers and turf areas within the developed landscape area;		
iii. Plants by botanical and common name, where applicable cultivar name, plant spacing, quantities of plant for each type, planted sizes including notation of field grown or container size, and mature height and spread of each plant;		
iv. Existing and proposed property lines, streets, street names and public utilities;		
v. Existing and proposed hardscape features such as driveways, patios, and sidewalks as necessary as well as existing or proposed nonorganic mulched areas;		
vi. Existing and proposed structures such as pools, fountains, fences and retaining walls;		
vii. Existing and proposed buildings;		

C. ~~Street Treatment~~ Type 3: (All zoning districts on other City streets):

1. All multi-family and nonresidential developments shall be required to provide ~~one (1) of the following buffers~~ a Low type buffer prescribed from the buffer types found in Table 107.70.2 along the entire street frontage:
 - a. Minimum width and planting quantities for required Streetscape Treatment Types are shown in Table 107.70.2. Substitution of plant materials may be allowed pursuant to Table 107.70.3 provided the character and intent of the streetscape treatment is not diminished. A single substitution is permitted per 100 linear feet. General arrangement of plant material within buffers shall be required to substantially comply with the latest edition of the City of Marathon Landscape Design Manual, adopted herein by reference.
 - b. Plant materials and installation shall meet the requirements of Section 107.68, Section 107.69, Section 107.70.A.3 and shall meet the minimum ranges for spacing, caliper, height and canopy spread listed in Table 107.70.4
 - a. ~~Two (2) canopy trees and two (2) understory trees per 100 linear feet of property frontage, located within a ten-foot wide landscape buffer. Spacing of canopy trees will be determined by species, but in no case shall they be planted further than 40 feet on center. Examples of appropriate canopy trees are identified in Table 107.68.1.~~
 - b. ~~Under utility lines only, four (4) understory trees per 100 linear feet of property frontage, located within a ten-foot wide landscape buffer.~~
2. All single- and two-family residential uses shall be required to ~~provide a minimum of two (2) canopy street trees for every 100 linear feet of property frontage along local streets. Spacing will be determined by species, but in no case shall they be planted further than 50 feet on center. Examples of appropriate canopy trees are identified in Table 107.68.1~~ comply with Section 107.69.C-E., when applicable and Section 107.72.
3. Utility allocations shall be designed to provide utilities' required separation between trees and utility facilities.
4. Street trees shall be planted between the street and the sidewalk whenever space permits to protect pedestrians and calm traffic. In such instances the planting area shall be a minimum width of five (5) feet between the back of the curb and the sidewalk, in accordance with the Florida Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, latest edition, incorporated in Rule 14-15.002, F.A.C.
5. For streets without curbing, all street trees shall be planted no further than ten (10) feet from the back of right-of-way.

Section 107.72. Alternative Compliance.

- ~~(a)~~ (a) The provisions of this article shall be liberally construed to effectively carry out the purpose and the intent of the Plan and of this article in the interest of the health, safety and welfare of the residents of the City.
- ~~(b)~~ (b) An applicant may submit a landscape or planting plan which varies from the strict application of the requirements of this article in order to accommodate unique site features, or characteristics, the preservation of water views or to utilize innovative design.
- ~~(c)~~ (c) An alternative compliance landscape or planting plan may be approved only upon a finding that it fulfills the purpose and intent of the Plan and of this article as well as or more effectively than would adherence to the strict requirements.

(g)(d) In evaluating proposed alternative compliance landscape or planting plans, considerations shall be given to proposals which preserve existing native vegetation and use ~~xeriscape~~ Florida Friendly and other low water use landscape design principles and where the design ensures the maximum preservation of existing vegetation on the site.

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