



Fort Myers Beach Management & Planning Session

Council Chambers
2525 Estero Blvd.
Fort Myers Beach, FL 33931

Agenda

Thursday, January 13, 2022

9:00 AM

ORDER OF BUSINESS

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ITEMS FOR DISCUSSION

- A. FDOT Foot of the Bridge Update
FDOT Presentation on the Foot of Matanzas Pass Bridge
- B. Lee County Update
An update of Lee County projects on Fort Myers Beach
- C. Discussion of Council Policy Relating to Code Enforcement Liens, Beach Activities, and Bicycle Safety
Discussion of Council Policy Relating to Code Enforcement Liens, Beach Activities, and Bicycle Safety
- D. Discussion of Tree Protection and Removal Policy
Discussion of Tree Protection and Removal Policy
- E. American Rescue Plan Act
American Rescue Plan Act

IV. AGENDA MANAGEMENT

- A. January 2022

V. ADJOURNMENT

NOTE: THIS MEETING IS TELEVISED LIVE ON COMCAST CHANNEL 98 AND YOUTUBE.

IF A PERSON DECIDES TO APPEAL A DECISION MADE BY THE COUNCIL IN ANY MATTER CONSIDERED AT THIS MEETING/HEARING, SUCH PERSONS MAY NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDING IS MADE, TO INCLUDE THE TESTIMONY AND EVIDENCE UPON WHICH ANY SUCH APPEAL IS TO BE BASED.



For special accommodations, please notify the Town Clerk's Office at least 72 hours in advance. (239) 765-0202



Help for the hearing impaired is available through the Assistive Listening System. Receivers can be obtained from the Town Clerk's Office.

In accordance with the Americans with Disabilities Act (ADA), persons needing a special accommodation to participate in the Board's proceedings should contact the Town Clerk's Office not later than three days prior to the proceedings.

1. **Requested Motion:**

Meeting Date: January 13, 2022

An update of Lee County projects on Fort Myers Beach

Why the action is necessary:

What the action accomplishes:

2. **Agenda:**

ITEMS FOR DISCUSSION

3. **Requirement/Purpose:**

5. **Background:**

Attachments:

Financial Impact:

6. **Alternative Action**

7. **Staff Recommendations:**

8. **Recommended Approval:**

John R Herin Jr, Town Attorney

Date: January 07,
2022

Amy Baker, Town Clerk

Date: January 07,
2022

Roger Hernstadt, Town
Manager

Date: January 07,
2022

1. **Requested Motion:**

Meeting Date: January 13, 2022

Discussion of Council Policy Relating to Code Enforcement Liens, Beach Activities, and Bicycle Safety

Why the action is necessary:

What the action accomplishes:

2. **Agenda:**

ITEMS FOR DISCUSSION

3. **Requirement/Purpose:**

5. **Background:**

Personal Watercraft and Parasailing

Section 27-52(d) Cap on number of licenses.

PWVLs and PALs shall be issued on an annual basis coinciding with the Town's fiscal year, October 1 through September 30.

(1) The Town Manager may issue no more than 11 PWVL licenses outstanding at any point of time.

(2) The Town Manager may issue no more than seven PAL licenses outstanding at any point of time.

(3) However, if the owner or agent of an eligible property elects to self-perform PWVL or PAL, it shall not count in the cap stated in Sections (1) or (2) above. Other than the separation distance, all other permit criteria must be met,

Initiating Litigation Against Code Enforcement Liens

If a code enforcement lien is unpaid for more than 90 days and exceeds three times the estimated legal fees associated with its collection or presents a public safety concern, the Town Attorney may seek Town Council authority to initiate foreclosure or injunctive relief proceedings in Circuit Court.

Chapter 28, Art. III Beach Bicycle and Vehicle Safety

Section 28-85. Responsible Parties. (for bicycle lights and warning noise devices)

~~Entities or individuals located within the municipal boundaries of Fort Myers Beach that rent or loan bicycles to other for use on the public rights-of-way are jointly and severally responsible along with the operator of the bicycle for compliance with these regulations.~~

All bicycle owners or bicycle operators/riders, including entities that rent or loan bicycles to others for use on the public right-of-way, are responsible for compliance with these regulations. Rental contract language shall not redirect or assign responsibility for compliance to the operator/rider.

Attachments:

Financial Impact:

6. Alternative Action

7. Staff Recommendations:

8. Recommended Approval:

Date: January 07,
2022

Jason Green, Community Development
Services

Date: January 07,
2022

John R Herin Jr, Town Attorney

Date: January 07,
2022

Amy Baker, Town Clerk

Date: January 07,
2022

Roger Hernstadt, Town Manager

1. Requested Motion:

Meeting Date: January 13, 2022

Discussion of Tree Protection and Removal Policy

Why the action is necessary:

Currently, there are no minimum tree requirements for Single Family Residences (SFR) in the Town. The Town's current ordinance does require permitting for the removal of protected tree species, but exemptions allow for the removal of up to 3 protected trees annually. In addition, the definitions and guidance for maintenance of protected trees in the Town's current ordinance is lacking (see MRTF documents & City of Miami Ordinance attached). Lastly, there is no prohibition on the planting of invasive exotic trees/plants, nor the removal of their recruits.

The City of Miami ordinance attached does allow for certain exemptions and alternatives for homestead properties, senior citizens, and impoverished property owners. For example, homestead properties are not required to

- put up a tree protection bond
- complete their own site plan, rather than retain services of a landscape architect
- replace trees at a 1:1 ratio rather than 1 to multiple replacements
- lesser tree fund contributions, and lesser fines than non-homestead properties

N.B. State Statute allows SFR owners to remove trees without Town permitting with a supporting assessment from a qualified professional.

The Town's Comprehensive Plan repeatedly calls for "shade trees" along streets and walkways: POLICY 2-B-1 The town strongly supports the planting of regularly spaced street trees in public rights of-way on residential streets.

POLICY 2-B-2 The town should develop a residential streets program that provides guidelines and technical assistance to neighborhoods that wish to improve their public spaces as civic projects.

The Comp Plan gives a strong preference for native trees such as live oak, gumbo limbo, sea grape, cabbage palm, mastic, Jamaica dogwood, mahogany, black olive, strangler fig, pigeon plum, and buttonwood; and vii. a prohibition on the use of invasive trees such as Australian pine, Brazilian pepper, melaleuca, and Java plum.

In addition, trees can mitigate heat island effects (<https://www.epa.gov/heatislands/heat-island-cooling-strategies>). Heat islands can cause daytime temperatures in urban areas about 1–7°F higher than temperatures in outlying areas and nighttime temperatures about 2–5°F higher (<https://www.epa.gov/heatislands/learn-about-heat-islands>). Causes of heat island effects include reduction of natural landscapes, heat absorption and release by structures and impervious surfaces, and reduced wind flow caused by tall structures.

Lastly, native trees provide important habitat for wildlife including forage, roosting and nesting.

What the action accomplishes:

The benefits of implementing policies and ordinances to preserve and increase tree canopy include:

- reduction of heat island effects

- creation of hospitable environments for pedestrians and thus pedestrian-oriented recreation and commercial activities
- wildlife habitat

2. **Agenda:**

ITEMS FOR DISCUSSION

3. **Requirement/Purpose:**

5. **Background:**

TC has directed staff to adopt policy and ordinances to preserve and increase canopy coverage of native trees on Fort Myers Beach, and in particular on single family residences and Town properties.

See Staff Background Report Attached.

Attachments:

1. Tree Protection Background
2. Marco Island Landscape Code
3. Marco Island Vegetation Removal and Protection Code
4. City of Miami Tree Protection
5. DeterminingMitigationValues
6. 14-40-Determining-Mitigation-Value-2020
7. IFAS Comparison of 3 tree replacemet methods
8. MRTF Suggestions for FMB Vegetation Ordinances
9. Synopsis of MRTF Suggestions for FMB Vegetation Ordinances
10. 163.045 Fla. Stat.

Financial Impact:

Tree requirements would cost SFR owners for their installation and maintenance on the order of 100's to 1000's of dollars depending on the species and size requirements of trees. For instance, a 25 gallon Orange Geiger would cost on the order of \$200 for the tree and installation. Whereas a 10" caliper live oak can cost \$7,500 + transportation and installation costs. Palms cost approximately \$125 per foot of gray wood (10' = \$1,250 + transportation & installation).

6. **Alternative Action**

Make no changes to tree protection and removal policies and ordinances.

7. **Staff Recommendations:**

Direct Town Staff to implement policies and ordinances to preserve and increase native tree canopies in residential areas and public spaces.

8. **Recommended Approval:**

Jason Green, Community Development
Services

Date: January 07,
2022

Date: January 07,

2022

John R Herin Jr, Town Attorney

Date: January 07,
2022

Amy Baker, Town Clerk

Date: January 07,
2022

Roger Hernstadt, Town Manager

January 13 M&P Tree Protection & Removal Agenda Item

BACKGROUND

TC has directed staff to adopt policy and ordinances to preserve and increase canopy coverage of native trees on Fort Myers Beach, and in particular on single family residences and Town properties.

Tree preservation policies set forth by other localities include:

- Prohibiting the removal of native trees
- Requiring a permit to
 - Trim more than 25% of the foliage annually (ANSI A-300 Standard for Trimming)
 - Remove roots
- Tree protection bonds
- Define criteria for tree permit issuance
- Define Tree replacement / Tree Fund contribution criteria
- Tree Species Diversity Requirement
- Exotic tree removal permit requirement
- Land clearing permit requirement
- Minimal Native Vegetation Removal Criteria
- Minimum tree requirements for permitted construction
 - SFR construction
 - Changes in impervious area
- Defining tree abuse, value, trimming
- Tree gifting programs
- Defining tree protection during construction
- Post Hurricane Tree Management Plans
- Tree Master Plan for the Locality
- Website Education for tree care, rules, planning

Tree permit applications requirements typically include:

- Site plan detailing
 - Existing tree location, species, height, canopy spread, and trunk diameter, health
 - Existing structures, above and below ground utilities
 - Proposed construction activity (includes excavation, fill, and grading)
- Management plan
 - Indicating trees to be
 - Protected
 - Remain
 - Relocated with proposed relocation location
 - Justifying tree removal / relocation
- Assessment by Qualified Professional (ISA Certified Arborist, Landscape Architect as defined by F.S. ch. 481)

ARTICLE IV. LANDSCAPING

Sec. 30-431. Title and citation.

This article shall be known and may be cited as the "City of Marco Island Landscape Code."

(Ord. No. 02-22, § 1, 7-15-2002)

Sec. 30-432. Intent and purpose.

The purpose and intent of the landscape code is to:

- (1) Promote the health, safety, and welfare of residents of the city by establishing minimum uniform standards for the installation and maintenance of landscaping;
- (2) Improve the aesthetic appearance of commercial, and residential developments through the requirement of minimum landscaping in ways that harmonize the natural and built environment; promote preservation and planting of native plants and plant communities;
- (3) Improve environmental quality by reducing and reversing air, noise, heat, and chemical pollution through the preservation of canopy trees and the creation of shade and microclimate;
- (4) Reduce heat gain in or on buildings or paved areas through the filtering capacity of trees and vegetation; and
- (5) Promote water conservation by encouraging the use of native and drought-tolerant vegetation and properly zoned irrigation system through xeriscape.

(Ord. No. 02-22, § 2, 7-15-2002)

Sec. 30-433. Landscaping and irrigation plan procedures.

Landscape plan required. Prior to the issuance of any subdivision plat or site development plan, an applicant whose development is covered by the requirements of this code shall submit a complete landscape plan to the community development director or his designee. This includes commercial, institutional, and multifamily developments. The landscape plan shall be prepared by and bear the seal of a registered landscape architect.

- (1) Prior to the issuance of a certificate of occupancy for a single-family residence, the owner or owners' representative shall prepare and submit a copy of the final "as-built" survey that accurately depicts the approximate location of code-required landscaping materials on the property, including the common name of tree species installed, and the height at the time of planting. This landscape plan will be used in conjunction with the final inspection of the single-family residence, and kept as part of the permanent file.

Except in the case of a single-family residence, as described above, the landscape plan shall be drawn to a suitable scale, include dimensions, north arrow, date, title, project owner's name and address, delineate the existing and proposed parking, vehicular use areas, buildings, access points and roadways, show all utility lines or easements, and show the location of existing and proposed planting areas and vegetation communities and designate them by species name. The code-required

landscaping shall be highlighted or indicated on the plan to differentiate from the applicant's provided landscaping that is in addition to that required by this code. Design creativity is encouraged so long as it meets the intent of this code. The plan shall show the location of permanent vegetation protection devices, such as barricades, curbing, and tree wells. The plan shall also include a chart indicating graphic plant symbol, botanical and common name, quantity, height, spread, spacing, native status, drought tolerance rating (as defined by "Florida Friendly Landscaping", as may be amended from time to time, published by Florida Department of Environmental Protection and University of Florida, Florida-Friendly Landscape Guidance Models for Ordinances, Covenants, and Restrictions) and type of industry practices and standards. In addition, a tabulation of the code-required landscaping indicating the calculations necessary to ensure compliance with this code should also appear. A certificate of occupancy permit shall not be issued until approval of the landscaping plan and installation of plants are inspected by the city.

- (2) *Irrigation plan required.* All new single-family residences, multifamily, commercial and institutional developments shall be irrigated by the use of an automatic irrigation system with controller set to apply water in a manner consistent with this code. Irrigation plans for multifamily, commercial and institutional developments shall be prepared by persons qualified to prepare irrigation plans, such as an irrigation designer or landscape architect. Moisture detection devices shall be installed with all automatic sprinkler systems to override the sprinkler activation mechanism during periods of increased rainfall. Where existing irrigation systems are modified requiring the acquisition of a permit, automatic activation systems and overriding moisture detection devices shall be installed in compliance with this code.

Required irrigation installed at single-family residences does not require the submittal of an irrigation plan. The system must be installed by a licensed professional prior to the issuance of a certificate of occupancy. As part of the final inspections for the residence, the irrigation system will be inspected to ensure the inclusion of the following system elements: control valve; vacuum breaker; timer (clock); and rain sensor.

- a. The irrigation plan shall be drawn at the same scale as the landscape plan to: show existing vegetation to remain; delineate existing and proposed buildings and other site improvements, parking spaces, aisles, and driveways; indicate main valve, and pump locations, pipe sizes and specifications; show controller locations and specifications; show backflow preventer and rain-sensing devices and include a sprinkler-zoning plan indication type, specifications, spacing, and coverage. If drip irrigation or soaker hoses are proposed, their layout shall be shown.
 - b. Reference the city public right-of-way ordinance for irrigation system requirements within the public right-of-way. (Reserved.)
- (3) *Existing plant communities.* Existing plant communities and ecosystems shall be maintained in a natural state and shall not be required to be irrigated. Native plant areas that are supplements to an existing plant community or newly installed by the applicant shall be irrigated on a temporary basis only during the period of establishment from a temporary irrigation system, water truck, or by hand watering with a hose.
- (4) *Cultivated landscapes.* Cultivated landscape areas (sod, shrubs, and trees) shall be provided with an automatic irrigation system to improve the survivability of the required landscaping. Sprinkler heads irrigating lawns or other high water demand areas shall be zoned separately from those irrigating trees, shrubbery, groundcover, flowers, or other reduced water requirement areas. Automatically controlled irrigation systems shall be operated by an irrigation controller that is capable of watering "high water" requirement areas at different frequencies and duration than "low water requirement areas". Landscaping shall only be watered on as-needed basis.

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- (5) *Irrigation systems.* Irrigation systems shall be designed for the zoning of high and low water use areas. Plans shall include in schedule form, the irrigation system's total gallons per minute (GPM) for each zone, recommended zone running times in minutes, hours and showing days per week, and estimated zone precipitation rate in inches per hour. The irrigation system shall be generally designed to apply one inch of water per week during two operations per week. The system coverage shall be designed for 100 percent coverage unless specified by the designer. The system shall be generally designed for the 100 percent head-to-head coverage as generally recommended by the irrigation sprinkler manufacturers for matched precipitation. These requirements may be adjusted for retention areas. The irrigation system shall be designed and installed in accordance with the Florida Irrigation Society's, Standards and Specifications for Turf and Landscape Irrigation Systems (as amended). Irrigation systems utilizing well water shall be designed and maintained in a manner which eliminates staining of the building, walks, walls, and other site improvements. All systems shall be designed to minimize the application of water onto sidewalks, driveways, streets, and other impervious areas. Irrigation systems, other than drip or soaker hose systems, shall be operated between the hours of midnight and 8:00 a.m. South Florida Water Management District (SFWMD), the city, or other utility company water use restrictions shall supersede these requirements. There are no operational requirements for irrigation systems utilizing effluent/reused water sources.
- (6) *Installation.* Prior to the issuance of any certificate of occupancy permit for a use required to provide landscaping and irrigation in accordance with this section, all required landscaping and irrigation shall be installed and in place as set out in this code. All plant materials must be installed in accordance with accepted landscape practices in the area and meet the plant material standards contained in this code. Plant materials shall be installed in soil conditions that are conducive to the proper growth and the plant material.

(Ord. No. 02-22, § 3, 7-15-2002; Ord. No. 11-07, § 2, 6-20-2011)

Sec. 30-434. Pruning, maintenance, and removal.

- (a) *Pruning.* Vegetation required by this Code shall be pruned by property owners to promote healthy, uniform, natural growth of the vegetation. Pruning shall be performed in accordance with the current edition of pruning standards published by the American National Standard Institute (ANSI) A300 Pruning Standards, ANSI Z133.1 Safety Standards. Trees shall not be severely pruned in a manner that would damage the vegetation and permanently restrict growth or height. Severely pruned trees are considered damaged and a public nuisance, which shall be replaced with trees equal to the number and height of the damaged trees. A plant's growth habit shall be considered to determine the extent of pruning necessary to maintain healthy growth.
- (1) *Utility pruning.* Utilities shall conform to current ANSI A-300 standards when performing line clearing work within public right-of-way. All utilities shall notify the city manager or designee by electronic communication or mail no later than 30 business days prior to performing any utility line clearing work within public right-of-ways. Franchised utilities, after notifying the city manager or designee, shall meet with the city manager or designee to review and approve plans and schedules for utility line clearing work. Franchised utilities shall have an ISA certified arborist directing the pruning of public and private trees. Utility pruning should only provide minimum safe clearance to protect energized power lines with consideration for the combined movement of the conductors near trees in severe weather, the species of the tree, and the voltage of the conductor.
- (2) *Canopy and root pruning.* When activities affect public or private trees so that more than 50 percent of the area within the dripline is disturbed, or when pruning must be performed on the crown of a public or private tree, the following arboricultural techniques are required:

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- a. When the area within the dripline will be disturbed, the affected roots must be severed by clean pruning cuts where the activity impacts the roots. Roots may be pruned by utilizing trenching equipment that is specifically designed for this purpose or by hand digging a trench and pruning roots with a chain saw, pruning saw or other equipment designed for tree pruning. Roots within the dripline shall be pruned to a depth of 12 inches below existing grade or to the depth of the disturbance if less than 12 inches from the existing grade. When underground utilities are to be installed through the dripline, root pruning requirements may be waived by the city manager or designee if the lines are installed via tunneling or directional boring.
 - b. All pruning of public or private trees shall conform to the current ANSI standards defined herein and shall be supervised by an ISA certified arborist. There shall be no flush cuts, stub cuts, or lion's tailing of the crown of the tree.
 - c. It shall be a violation of this section to perform the techniques of topping, hatracking or other pruning techniques that remove the vertical leader stems or other pruning which results in an unnecessary reduction of shade of public or private trees.
- (b) *Maintenance.* The owner shall be responsible for the continued maintenance and upkeep of all required landscaping so as to present a healthy plant in a condition representative of the species. Tree and palm staking shall be removed between six and 12 months after installation. All landscapes shall be kept free of refuse, debris, disease, pests, and weeds and shall be fertilized and irrigated to maintain plants in a healthy condition. Special maintenance requirements necessary to preserve the design professional's intent shall be noted on the planting plan.
- (1) *Care and maintenance of permitted private trees on city owned property.* The care and maintenance of all private trees permitted on city owned property shall be the responsibility of the adjacent property owner. A permit shall be obtained from the city manager or designee prior to planting a private tree in the public right-of-way or on other city property. Property owners shall adhere to the maintenance and pruning standards contained herein when maintaining privately-owned trees on city property. Property owners must apply for a vegetation removal permit from the city manager or designee in accordance with Code article XIV and a permit to replace any private tree in the right-of-way in accordance with Code section 30-435.
 - (2) *Care and maintenance of public trees on city owned property.* The city manager shall designate a department to be responsible for the care and maintenance of public trees on city owned property. Public trees are city street trees, median trees and cul-de-sac trees as defined in section 30-10. The department shall adhere to the maintenance and pruning standards contained herein when maintaining public trees on city property. The department director shall make reports and requests for funds for the care and maintenance of public trees, including needed planting and replanting, to the city council as part of the annual budget approval process. Before removing any public tree from the right-of-way, the department director shall notify the city manager and any other affected department directors.
 - (3) *Private care and maintenance of public trees on city owned property.* Private property owners may make a written request to the city manager or designee for permission to care for and maintain public trees on public property. Property owners shall adhere to the maintenance and pruning standards contained herein when maintaining publically owned trees on city property. Before replanting, removal or replacement of any public tree, a private property owner shall obtain the permission of the city manager or designee to plant the tree, shrub or other vegetation and if necessary apply for a vegetation removal permit from the city manager or designee in accordance with article XIV. If the replanting shall be in the right-of-way, the property owner shall obtain a permit from the city manager or designee in accordance with section 42-76. Fees for a permit for vegetation removal or replanting shall be waived for public trees.

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- (c) *Removal of damaged or nuisance trees.* Ongoing maintenance to prohibit the establishment of prohibited exotic species is required. Any plant materials of whatsoever type or kind required by these regulations shall be replaced within 30 days of their demise and/or removal.
 - (d) *Compliance.* Code compliance will inspect areas affected by this code and issue citations for violations. If the required corrective action is not taken within the time allowed, the city may use any available means of enforcement to secure compliance including, but not limited to:
 - (1) Prosecution before the city code enforcement board;
 - (2) Withholding of any permit, construction plan approval, certificate of occupancy, or inspection by the city; and
 - (3) Placing a lien on the property, to include all administrative, legal, material and installation costs.

(Ord. No. 02-22, § 4, 7-15-2002; Ord. No. 09-14, § 4, 10-19-2009; Ord. No. 11-07, § 2, 6-20-2011)

Sec. 30-435. Plant material and installation standards.

- (a) *Quality.* Plant materials used to meet the requirements of this section shall meet the standards for Florida No. 1 or better, as set out in Grades and Standards for Nursery Plants, part I and part II, Department of Agriculture, State of Florida (as amended). Root ball sizes on all transplanted plant materials shall also meet state standards.
 - (1) At least 50 percent of the trees and 50 percent of the shrubs used to fulfill these requirements shall be native or naturalized Southern Floridian species, as determined by accepted valid scientific reference. The "Recommended Trees and Shrubs for the City of Marco Island List" is available for reference at city hall.
 - (2) In addition, for all sites, at least 50 percent of the trees and shrubs used to fulfill these requirements shall be drought-tolerant species as listed in the South Florida Water Management District's Plants for Your Florida-Friendly Landscape. Reference to be used in the native determination may include, but not be limited to:

Long, R.W., and O. Lakela, 1976. A Flora of Tropical Florida. Small, J.K., 1933. A Manual of the Southeastern Flora. Wunderlin, R.P., 1982. Guide to the Vascular Plants of Central Florida.
 - (3) Where Florida-friendly plants are to be utilized, use the South Florida Water Management District Plants for Your Florida-Friendly Landscape (as amended) as a reference.
- (b) *Trees and palms.* All required new individual trees shall be species having an average mature spread or crown of greater than 20 feet and having trunk(s), which can be maintained in a clean condition with over ten feet of clear wood. Trees adjacent to walkways, bike paths and rights-of-way shall be maintained in a clean condition with over ten feet of clear wood. Trees having an average mature spread or crown less than 20 feet may be substituted by grouping the same so as to create the equivalent of a 20-foot crown spread. For code-required trees, at least 50 percent of the trees shall be canopy type trees and 50 percent may be palms. The minimum size of the trees at the time of installation shall be as follows:

Single-family single story structures.

Canopy trees:

(50 percent) Ten feet, four-foot spread, 1.75 inch caliper (at 12 inches above the ground).

(50 percent) Eight feet, three-foot spread, 1.50 inch caliper (at 12 inches above the ground).

All other single story structures (multifamily, commercial, and institutional).

Canopy trees: (50 percent) Twelve to 24 feet on average height, six-foot spread, three-inch caliper, six- to seven-foot clear trunk, 65 gallon minimum. Container or ball and burlaped (B&B).

Palms: (50 percent) Twelve feet clear trunk height minimum with 15-foot minimum mature clear trunk height.

All multiple story structures (single-family, multifamily, commercial, and institutional).

Canopy trees:

(25 percent) Twelve to 14 feet on average height, six-foot spread, three-inch caliper, seven-foot clear trunk, 65-gallon minimum. Container or ball and burlaped (B&B).

(25 percent) Sixteen to 18 feet on average height, seven-foot spread, four-inch caliper, seven-foot clear trunk, 100 gallon minimum. Container or ball and burlaped (B&B).

Palms:

(25 percent) Twelve-foot clear trunk height minimum with 15-foot minimum mature clear trunk height.

(25 percent) Fifteen-foot clear trunk height minimum with 18-foot minimum mature clear trunk height.

A grouping of three palm trees will be equivalent to one canopy tree. Exceptions will be made for Roystonea spp. (Florida Royal Palm) and Phoenix spp. (Canary Island Date Palm not including Roebelenii) which shall count one palm tree for one canopy tree. Also, exceptions will be made for Cocos spp. (Coconut Palm) and Arecastrum spp. (Queen Palm) which shall count two palm trees for one canopy tree. In side and rear yard locations, palms can only be substituted for 50 percent of the canopy tree requirement. Front yards may have 75 percent palms, and are encouraged within commercial zoning districts.

- (c) *Tree species mix.* When trees are required to be planted to meet the requirements of this code, a mix of species shall be provided. The number of species to be planted shall vary according to the overall number of trees required to be planted. The minimum numbers of species to be planted are indicated below.

Required Species Mix

Required Number of Trees	Minimum Number of Species
2—10	2
11—20	3
21—30	4
31+	5

- (d) *Screening/buffering.* Where screening is required (refer to Table 2) it shall be accomplished by the use of or combination of hedges, shrubs, ground covers, berming, and decorative fences or walls in combination with shrubs, vines and ground covers covering 50 percent or more of the fence or wall. The screening/buffering shall be designed to create within 12 months a 100 percent opaque visual screen/buffer, to be maintained in perpetuity, except for visibility requirements at vehicular access points, street intersections, and pedestrian access points.

- (1) *Minimum shrub sizes for opaque hedges at time of installation.* Ten-gallon container, 48-inch height, 36-inch spread minimum, with the 48-inch height measured from the top of the root ball to the extent of the upper most foliage planted four feet on center.
- (2) *Minimum shrub sizes at time of installation adjacent to right-of-way and vehicular use areas.* Three-gallon container minimum planted 36 inches on center with a minimum height of 24 inches and spread consistent to the species of plant, but meeting a Florida No. 1 or better nursery grown grade. The 24-inch height is measured from the top of the root ball to the extent of the upper most foliage.

(e) *Ground covers.* Prior to the issuance of a site permit, certificate of completion or certificate of occupancy for any single-family residence, multifamily, commercial, or institutional development, ground coverings, as described below, shall be installed. Artificial turf or similar synthetic turf materials are expressly prohibited as ground covers unless otherwise approved by standards and specifications approved by city council.

(1) *Lawn grass.* All lawn areas shall be sodded and/or planted with turf species normally grown as permanent lawns within the Southwest Florida area. Solid sod shall be used in swales or other areas subject to erosion. The use of drought-tolerant species is encouraged. Reference the city public right-of-way ordinance for requirements within the public right-of-way.

(2) *Florida-friendly landscape.* Florida-friendly landscape practices are encouraged in all zoning districts. Landscape areas utilizing Florida-friendly designs are those that comply with the principals of Florida-Friendly Landscape consistent with the standards provided in the following publications, as may be amended from time to time:

- "Florida Yards and Neighborhoods (FYN) and Environmental Landscape Management (ELM)," the University of Florida Cooperative Extension Service (UF-IFAS)
- "Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries (2008)," Florida Water Management Districts
- "The Florida Yards & Neighborhoods Handbook", Florida Water Management Districts
- "Waterwise Florida Landscape Guide," Xeric Landscaping with Florida Native Plants," Association of Florida Nurseries
- "Waterfront Property Owner's Guide," Florida Department of Environmental Protection

Landscape designs utilizing the Florida-friendly landscape principles are encouraged for the protection of water quality and water conservation and should incorporate the following nine principals:

- a. The right plant in the right place;
- b. Efficient watering with properly zoned irrigation systems;
- c. Appropriate fertilization;
- d. Mulching properly;
- e. Attraction of wildlife;
- f. Responsible management of yard pests with limited use of chemicals;
- g. Recycling yard waste;
- h. Reduction of stormwater runoff; and
- i. Waterfront protection.

(3) *Impervious surfaces, single-family districts.* No more than 67 percent of the total lot area within a single-family zoning district shall be covered with impervious surfaces. The use of pervious pavers will be considered in the calculation to the extent the applicant provides credible evidence of the permeability of the surface. Impervious surfaces may not cover a French drain, if required, except that up to two four-foot-wide walkways to a dock facility may be used;

(4) *Pervious surfaces, all districts.* Pervious yard areas shall include no more than 20 percent coverage with non-organic material such as stone, gravel or pavers unless approved under Florida-friendly landscape principles by the city manager or designee. Pervious yard areas shall include no more than 30 percent organic groundcover such as mulch, bark, pine needles and yard clippings, unless approved under Florida-friendly landscape principles by the city manager or designee.

(f) *Prohibited species.* The following plant species shall not be planted:

- (1) *Enterolobium cyclocarpum* (Ear tree).
- (2) *Melia azedarach* (Chinaberry tree).
- (3) *Bischofia javanica* (Bishopwood).
- (4) *Scaevola frutescens* (Australian inkberry).
- (5) *Dalbergia sissoo* (Indian rosewood).
- (6) *Sapium sebiferum* (Chinese tallow tree).
- (7) *Ardisia elliptica* (Shoe button ardisia).

This list is an example and shall be subject to revision as exotic plant species are determined to be noxious, invasive, cause environmental degradation to native habitats, or to be detrimental to human health, safety, or the public welfare by the Florida Exotic Pest Plant Council (FLEPPC). The current FLEPPC List of Invasive Plant Species can be found at www.fleppc.org.

(g) *Prohibited invasive exotic species.* In addition to the prohibitions outlined in subsection 30-435(f), the following species or seeds thereof shall not be grown, offered for sale, or transported inter-city or intra-city.

- (1) *Melaleuca* spp. (Punk tree).
- (2) *Schinus terebinthifolius* (Brazilian pepper).
- (3) Any member of the family Casuarinaceae (Australian pine).
- (4) *Rhodomyrtus tomentosus* (Down rosemyrtle).
- (5) *Dioscorea bulbifera* (Air potato).
- (6) *Colubrina asiatica* (Lather leaf).
- (7) *Lygodium* spp. (Climbing fern).
- (8) *Syzygium cumini* (Java plum).
- (9) *Mimosa pigra* (Catclaw mimosa).
- (10) *Acacia auriculiformis* (Ear leaf acacia).
- (11) *Albizia lebbbeck* (Women's tongue).
- (12) *Ficus microcarpa* (Laurel fig).

This list is an example and shall be subject to revision as exotic plant species are determined to be noxious, invasive, cause environmental degradation to native habitats, or to be detrimental to human health, safety, or the public welfare by the Florida Exotic Pest Plant Council (FLEPPC). The current FLEPPC List of Invasive Plant Species can be found at www.fleppc.org.

(h) *Regulations.* Public and private trees and landscaping shall not be planted or replaced in the right-of-way until a permit has been issued by the city manager or designee in accordance with section 42-76. In addition to the standard for issuance contained in subsection 42-76(f), the following standards shall apply. In the event of a conflict, the more restrictive standard shall govern.

1. No permit is required to perform grass maintenance in public right-of-ways.
2. All permitted trees and plant material placed in public rights-of-way do not create or vest any property right in association with a permit, except in the city. Permittees shall be responsible for the

maintenance of such trees and plant material, as provided herein, unless otherwise removed or specified as a condition of the permit issued pursuant to section 42-76.

3. A property owner desiring to privately landscape the public right-of-way shall submit a landscape and irrigation plan to the city manager or designee. The application shall include three sets of detailed plans indicating existing rights-of-way facilities, type and location of proposed plantings, and location of electrical and irrigation systems.
4. After review and acceptance of the landscape and irrigation plans, a landscape agreement shall be signed by the permittee to insure that the permittee or his or her successor or assignee shall be responsible to maintain such material and irrigation systems until removed or otherwise specified. The agreement shall be recorded in the official records of Collier County.
5. Tree planting distance from the edge of the sidewalk on private property shall be no closer than 36" from the trunk of tree. Under no circumstances shall trees be planted within the flow line of a swale regardless of the setback from the edge of the sidewalk.
6. Tree plantings must not interfere with line of sight triangles at anytime or with ingress or egress to the property.
7. Trees planted in the public right-of-way in close proximity (less than ten feet) to underground utilities shall be reviewed and approved by the city manager or designee.
8. Trees planted in the public right-of-way under power supply lines shall be of the type that do not grow taller than 15 feet. The owner shall be responsible to maintain trees under or adjacent to the power supply to prevent power failure.
9. Existing private trees located in the public right-of-way may be adversely impacted by various underground construction activities undertaken by the city. The city shall not be responsible for any adverse impact on existing private trees in the public right-of-way from underground activities undertaken by the city.

(Ord. No. 02-22, § 5, 7-15-2002; Ord. No. 05-02, § 1, 3-21-2005; Ord. No. 09-14, § 4, 10-19-2009; Ord. No. 10-04, § 2.5., 4-19-2010; Ord. No. 11-07, § 2, 6-20-2011; Ord. No. 15-04, § 1, 3-2-2015)

Sec. 30-436. Existing plant material.

- (a) All new and or redevelopment shall retain existing native and mature vegetation to the maximum extent possible. Existing native vegetation shall be retained unless stormwater management design, necessary grade changes, required infrastructure or approved construction footprints necessitate its removal. The need to remove existing vegetation shall be demonstrated by the applicant as part of the building permit or site development plan review process. Areas of retained vegetation shall be preserved in their entirety with all trees, under story, and ground covers left intact and undisturbed provided that prohibited exotic plant materials as defined herein are to be removed.
- (b) During construction, all reasonable steps necessary to prevent the destruction or damaging of existing vegetation shall be taken. No excess soil, additional fill, equipment, liquids, or construction debris shall be placed within the drip line of any vegetation that is required to be preserved, or that will be credited towards the required landscaping.
- (c) Protective barriers shall be installed and maintained beyond the drip line of all retained vegetation unless site improvements prohibit installation of barriers beyond the drip line, and shall remain in place for the duration of the construction process phase. The location of the protective barriers shall be determined by a landscape architect or design professional.

(Ord. No. 02-22, § 6, 7-15-2002)

Sec. 30-437. Tree preservation credits.

Existing native trees may be credited towards meeting the minimum tree planting requirements according to the formula in Table 1. Fractional measurements shall be attributed to the next lowest category.

Table 1. Calculation of Tree Preservation Credits

Existing Crown Spread of Preserved Trees	or	Diameter of Tree at 4.5 Feet Above Natural Grade	=	Number of Tree Credits
50 feet or greater	or	26 inches or greater	=	3
40 to 49 feet	or	20 to 25 inches	=	2
30 to 39 feet	or	13 to 9 inches	=	2
20 to 29 feet	or	8 to 12 inches	=	1
10 to 19 feet	or	2 to 7 inches	=	1
Less than 10 feet	or	1½ to 2 inches	=	1*

*Credited against equivalent required tree only.

(Ord. No. 02-22, § 7, 7-15-2002)

Sec. 30-438. Site distance triangles, signage and berms.

- (a) *Safe sight distance triangles at intersections and access points.* Where an access way intersects a right-of-way or when a property abuts the intersection of two or more rights-of-way, a minimum safe sight distance triangular area shall be established. Within this area, vegetation shall be planted and maintained in a way that provides unobstructed visibility at a level between 18 inches and ten feet above the adjacent access. (See Figure 1).

Where an access way enters a right-of-way, two safe distance triangles shall be created diagonally across from each other on both sides of the access way. Two sides of the triangle shall extend 15 feet each way from the point of intersection from the edge of pavement and the right-of-way line. The third side of the triangle shall be a line connecting the ends of the other two sides.

Where a property abuts the intersection of two rights-of-way, a safe distance triangle shall be created. Two sides of the triangle shall extend 30 feet along the abutting right-of-way lines, measured from the point of intersection. The third side of the triangle shall be a line connecting the ends of the other two sides.

- (b) *Signage located within/adjacent to landscape buffer area.* All trees and shrubs located within a landscape buffer shall be located so as not to block view of signage. Where specimen trees exist, the signage setback location may be administratively reduced per the land development code. Code required plantings should progress in height away from the street. Signs may be permitted within the restricted area of the landscape buffer to a minimum setback of one-half the buffer width along with an overall reduction of the sign size requirements as described by 50 percent.

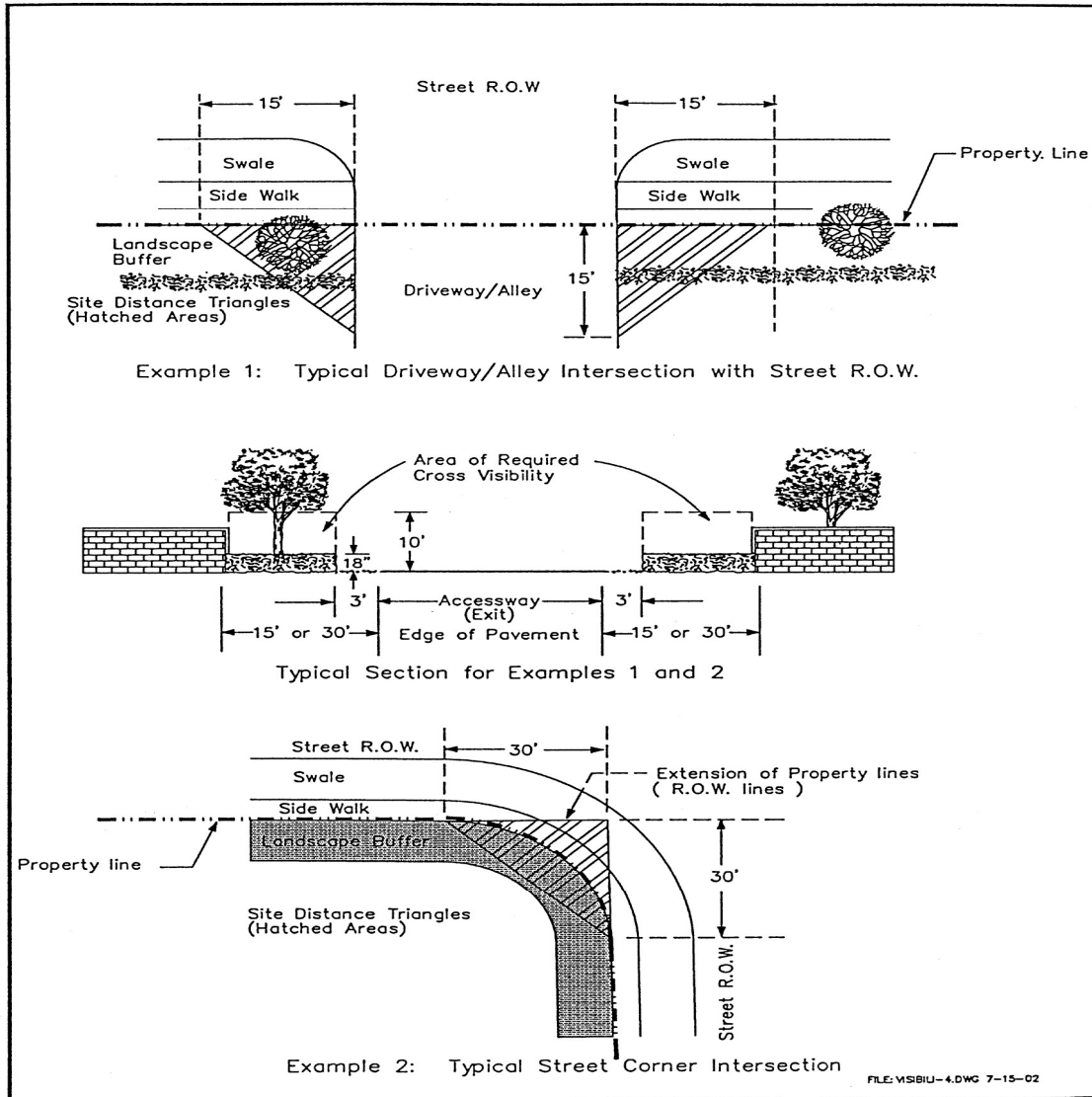


Figure 1. Sight Distance Triangles

- (c) *Landscape berms.* All perimeter landscape berms over two feet in height shall meet or exceed the minimum standards as set forth herein. All grassed berms shall have side slopes no greater than four to one. Berms planted with ground cover and landscaping shall have side slopes no greater than three to one. Existing native vegetation shall be incorporated into the berms with all slopes fully stabilized and landscaped with trees, shrubs, and ground cover. Landscape berms shall not be placed within easements without written approval from all entities claiming an interest under said easement.

(Ord. No. 02-22, § 8, 7-15-2002)

Sec. 30-439. Minimum landscaping required for vehicular use areas.

- (a) Applicability. The provisions of this section shall apply to all new and redevelopment of off-street parking or other vehicular use areas. Existing landscaping which does not comply with the provisions of this code shall be brought into conformity to the maximum extent possible when: the vehicular use area is altered or expanded except for restriping of lots/drives, the building square footage is changed, or the structure or a unit within the structure has been vacant for a period of 30 days or more and a request for an occupational license to resume business is made. These provisions shall apply to all developments with the exception of single-family, two-family, and mobile home dwelling units, on individually platted lots. Any appeal from an administrative determination relating to these regulations shall be to the board of zoning appeals or equivalent.
- (b) Landscaping required in interior of vehicular use areas for multifamily, institutional, and commercial developments. At least ten percent of the amount of vehicular use area on-site shall be devoted to interior landscaping areas. The width of all curbing shall be excluded from the required landscaped areas. All interior landscaped areas not dedicated to trees or to preservation of existing vegetation shall be landscaped with grass, ground cover, shrubs or other landscape treatment. One tree shall be provided for every 250 square feet of required interior landscaped area. Interior landscaped areas shall be a minimum of five feet in width and 150 square feet in area. The amount of required interior landscape area provided shall be shown on landscape plans.
- (c) All rows of parking spaces shall contain no more than ten parking spaces uninterrupted by a required landscaped island, which shall measure inside the curb not less than eight feet in width and at least eight feet in length and at least 100 square feet in area. At least one tree shall be planted in each island. These islands shall not be used as retention areas or as swales. Landscape islands for compact car parking areas shall be at least seven feet in width and at least 100 square feet in area. These tree requirements shall be met with existing native trees whenever such trees are located within the parking areas and may be feasibly incorporated into the landscaping. Where existing specimen trees are retained in landscape islands, the amount of parking spaces in that row may be increased to 15. A parking stall shall be no farther than 50 feet from a tree, measured to the tree trunk. Interior landscaping areas shall serve to divide and break up the expanse of paving at strategic points and to provide adequate shading of the paved area. Perimeter landscaping shall not be credited toward interior landscaping.
- (d) Interior landscaping areas shall be provided within the interior of all vehicular use areas. Landscaped areas, wall structures and walks shall required protection from vehicular encroachment through appropriate wheel stops, curbs or other structures.
- (e) Vehicular overhang of landscape areas. The front of a vehicle may overhang any landscaped area a maximum of two feet, provided the landscaped area is protected by motor vehicle wheel stops or curbing. Two feet of such landscaped area or walkway may be part of the required depth of each abutting parking spaces. Walkways shall be a minimum of six feet in width if a vehicle is to overhang the walkway. The landscaping of the two-foot area of vehicular overhang shall be accomplished with ground covers only that reach height of 12 inches or less and shall not be a woody type plant.

(Ord. No. 02-22, § 9, 7-15-2002)

Sec. 30-440. Minimum landscaping requirements.

- (a) Landscaping for all new development, including single-family, two-family, mobile home, multifamily, commercial, and institutional uses shall include as a minimum, the number of trees set forth below. Areas dedicated as preserves and conservation areas shall not be counted to meet the requirements of this

section. When calculating minimum tree requirements, a fractional unit of 0.50 or greater shall require an additional tree.

- (1) *Single-family, two-family, and mobile home developments.* One canopy tree per 2,500 square feet of lot area, or two canopy trees per lot, whichever is greater, with the maximum number required: 15 trees per lot. One or more canopy trees, palms, or grouping of palms meeting the code requirements shall be located within ten feet of the front property line.
- (2) *Multifamily developments.* One canopy tree per 2,000 square feet of pervious site area excluding preserves. This is in addition to other landscaping requirements.
- (3) *Commercial and institutional developments.* One canopy tree per 3,000 square feet of pervious site area excluding preserves. This is in addition to other landscaping requirements.
- (4) *Building perimeter plantings.* All commercial, institutional, and multifamily developments inclusive of accessory uses shall provide building perimeter plantings in the amount of 100 square feet per 1,000 square feet of proposed building ground level floor area, except within the Elkcam Circle Zoning Overlay. These planting areas shall be located adjacent to the building and shall consist of landscape areas, raised planters, or planter boxes that are a minimum of five feet wide. Seating courtyards, eating areas and plazas may be incorporated within them. Additional design criteria is provided in article VIII.

(Ord. No. 02-22, § 10, 7-15-2002)

Sec. 30-441. Minimum landscape buffering and screening between uses.

- (a) **Applicability.** The buffering and screening shown in Table 1 shall be required under this section and shall apply to all new and redevelopment of commercial, institutional, and multifamily development. Existing landscaping which does not comply with the provisions of this section shall be brought into conformity to the maximum extent possible when the vehicular use area is altered or expanded except for restriping of lots/drives, the building square footage is changed, or the structure or a unit within the structure has been vacant for a period of 30 consecutive days or more and a request for an occupational license to resume business is made.
- (b) The buffering and screening provisions of this code will be applicable at the time of planned unit development (PUD), subdivision plat (PSP), or site development plan (SDP) review, with the installation of the buffering and screening required pursuant to Table 2. Where a more intensive land use is developed contiguous to a property within a similar zoning district, the community development director or designee may require buffering and screening the same as for the higher intensity uses.
- (c) Landscape buffering and screening standards shall conform to the minimum buffering and screening standards of the zoning district it most closely resembles. The community development director or designee may approve alternative landscape buffering and screening standards when such alternative standards have been determined by use of professional acceptable standards to be equivalent to or in excess of the intent of this code.
- (d) **Standards.** Trees and shrubs shall be installed at the height specified in this code, unless otherwise noted.
- (e) **Water management systems,** which shall include retention and detention areas, swales, and subsurface installations, shall be permitted within a required buffer provided they are consistent with accepted engineering and landscaping practice and the following criteria:
 - (1) Water management systems shall not exceed 50 percent of the square footage of any required side, rear, or front yard landscape buffer.

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- (2) Water management systems shall not exceed 70 percent of the required buffer width. A minimum five-foot wide 10:1 level planting area shall be maintained where trees and hedges are required.
 - (3) Exceptions to these standards may be granted on a case-by-case basis, evaluated on the following criteria:
 - a. Water management systems, in the form of dry retention, may utilize an area greater than 50 percent of the buffer when existing native vegetation is retained at natural grade.
 - b. For lots of record 10,000 square feet or less in size, water management areas may utilize an area greater than 50 percent of the required side and rear yard buffers. A level planting area of at least three feet in width shall be provided in these buffers.
 - (f) Vehicular use, or any other impervious areas shall not occupy any part of a required alternative A, B, or C type buffer except as written below:
 - (1) Driveways and sidewalks that are constructed perpendicular to the required buffer and provide direct access to the property;
 - (2) Parallel meandering sidewalks occupy the buffer and its width is increased by the equivalent sidewalk width.
 - (g) Types of buffers. Within a required buffer area, the following alternative shall be used based on the matrix in Table 2.

Alternative A: Ten-foot-wide landscape buffer with trees spaced no more than 30 feet on center.

Alternative B: Fifteen-foot-wide, opaque within one year, landscape buffer maintained at six feet in height, which may include a wall, fence, hedge, berm or combination thereof, including trees spaced no more than 25 feet on center. When planting a hedge, it shall be a minimum of ten gallon plants, 48 inches in height, three feet in spread and spaced a minimum four feet on center at planting.

Alternative C: A landscape buffer shall be required adjacent to any road right-of-way external to the development project. Said landscape buffer shall be consistent with the provisions of the city master plan, which is incorporated by reference herein. The minimum width of the perimeter landscape buffer shall vary according to the ultimate width of the abutting right-of-way. Where the ultimate width of the right-of-way is zero to 99 feet, the corresponding landscape buffer shall measure at least ten feet in width. Where the ultimate width of the right-of-way is 100 or more feet, the corresponding landscape buffer shall measure at least 15 feet in width. Developments within the town center mixed use district shall provide a perimeter buffer of at least 20 feet in width, regardless of the width of the right-of-way. The exception to this landscape buffer requirement is property located within the Elcam Circle Overlay as provided for in the land development code. The town center mixed use district right-of-way buffer requirements shall not be applicable to roadways internal to the development or along alleys, however, these areas shall provide the applicable landscape buffer per this code.

Trees shall be provided in an amount equivalent of one tree per 30 feet of buffer length abutting the right-of-way. Trees shall be spaced so to provide for an unimpeded proper and mature growth of the trees being used. Trees with less than a 20 foot crown spread shall not be used within this buffer unless under overhead utilities or are trees above the number required of this code. Applicants whose properties require installation of type "C" buffers within 500 feet of a major arterial or collector roadway intersection shall install required canopy trees at 16—18 feet heights with seven-foot minimum canopy spread, 4 inch diameter caliper and seven-foot clear trunks or palms with 15-foot clear trunks within the type "C" buffer areas.

A double hedge row of at least 24 inches in height at the time of planting and attaining a minimum of three feet height within one year shall be required in the landscape buffer where vehicular areas and parking spaces are adjacent to the road right-of-way.

The remaining area of the landscape buffer shall consist of existing native vegetation, grass, ground cover, or other landscape treatment. Every effort shall be made to retain and incorporate the existing native vegetation in these areas.

Type "C" buffers shall be permitted to utilize the adjacent right-of-way roadway shoulder for landscape and retention area purposes and based upon the following conditions:

- (1) A meandering sidewalk is provided crossing back and forth over the property or right-of-way line.
- (2) Retention areas recreated so to be shallow dry type retention areas and not continuous in line or length. Retention areas must also be interconnected with piped drainage systems and connected into the site's overall system or outfall area.
- (3) Include along each right-of-way one pedestrian entrance/rest area containing decorative paving, one bench, one bike rack and one trash receptacle. The one per right-of-way requirement can be reduced to one if the pedestrian entry/rest area is located at the corner of the property at a roadway intersection and enlarged in areas containing two each of the above listed site furnishings. Parking requirements may be reduced by one space per pedestrian entry/rest area.
- (4) The plan and layout is approved by the city's public works director and the community development director or designee.

Table 2 Table of Buffer Requirements by Land Use Classifications

Subject Property's District/Use	Adjacent Properties District							
	1	2	3	4	5	6	7	8
1.) Residential (RSF) single-family	-	B	B	B	B	*	C	-
2.) Residential RMF-6, RMF-12, RMF-16) multifamily	B	A	A	B	B	*	C	-
3.) Residential Tourist (RT)	B	A	A	A	B	*	C	-
4.) Commercial (C-1, C-1/T, C-2, C-3, C-4, C-5)	B	B	B	A	B	*	C	B
5.) Public Use (P), community facility (CF), Golf Course Clubhouse, Amenity Center	B	B	B	B	A	*	C	A
6.) Planned unit development (PUD)	*	*	*	*	*	*	C	*
7.) Vehicular rights-of-way	C	C	C	C	C	C	-	-
8.) Golf course	-	-	-	-	-	-	-	-

The letter listed under "adjacent properties district" shall be the landscape buffer and screening alternative required. The "-" symbol shall represent that no buffer is required. The PUD district buffer, due to a variety of differing land uses, is indicated by the "*" symbol, and shall be based on the landscape buffer and screening of the district or use with the most similar types, densities and intensities of use. Where a conflict exists between the buffering requirements and the yard requirements of this code, the yard requirements of the subject-zoning district shall apply.

Buffer areas located between commercial out parcels within a shopping center may be shared and a minimum of ten feet wide. This does not apply to right-of-way buffers.

(Ord. No. 02-22, § 11, 7-15-2002)

Sec. 30-442. Marco Island streetscape plan.

(Reserved.)

(Ord. No. 02-22, § 12, 7-15-2002)

Sec. 30-443. Cul-de-sac beautification.

Permission for any cul-de-sac improvements by residents must be submitted to the city public works department for approval. Submissions must include a drawing showing all improvements along with an agreement to provide maintenance for the improvements.

(Ord. No. 02-22, § 13, 7-15-2002)

Sec. 30-444. Tree fund.

The City shall establish a tree fund, which shall be used exclusively for plant replacement and to provide necessary maintenance of damaged trees. Penalties, fines and tree replacement payments, as provided for in this article, shall be deposited into the tree fund. The public may donate money to the city's tree fund to assist the city in its beautification efforts.

(Ord. No. 09-14, § 4, 10-19-2009)

Secs. 30-445—30-480. Reserved.

ARTICLE XIV. VEGETATION REMOVAL AND PROTECTION

Sec. 30-931. Purpose and intent.

The purpose of this division is the protection of existing vegetation within the city by regulating its removal; to assist in the control of flooding, soil erosion, dust, heat, air pollution and noise; to maintain property, aesthetic and health values within the city; to limit the use of irrigation water in open space areas by promoting the preservation of existing plant communities; to limit the removal of existing viable vegetation when no landscape plans have been prepared for the site. It is not the intent of this division to restrict the mowing of nonprotected vegetation in order to meet the requirements of other sections of this code.

(Ord. No. 02-23, § 1, 9-3-2002)

Sec. 30-932. Applicability.

For the purpose of this article, unless listed under exemptions of this code, it shall be unlawful to remove or cause to be removed, native and/or exotic species of vegetation without first obtaining a vegetation removal permit and/or an exotic vegetation removal permit from the community development director.

For the purpose of this article, native vegetation references shall meet the statutory definitions and/or lists found in the state division of forestry, the state department of agriculture and the state department of natural resources. References to a specimen tree(s) in this ordinance shall refer to any tree(s) listed under the U.S. Endangered Species Act, Section 6.

Properties may be subject to provisions contained in the final Deltona Settlement Agreement (1982) which could affect the applicability of this ordinance. It is incumbent upon the property owner to ascertain whether their property is within the settlement area, and to know what limitations may apply subject to the settlement agreement. Inclusion of property in the settlement area may not relieve the owner of other jurisdictional, statutory or agency requirements.

(Ord. No. 02-23, § 2, 9-3-2002)

Sec. 30-933. Exemptions.

A generalized vegetation removal permit is not required for the removal of protected vegetation other than specimen trees when one of the following conditions is met:

- (1) A building permit has been issued for the principal structure.
- (2) The principal structure has been constructed, and the property owner or authorized agent is conducting the removal.
- (3) Property zoned agriculture (A) where the property is to be used for a bona fide agricultural use as defined by the land development code and application for an agricultural clearing permit has been filed with and approved by the community development director.
- (4) A site plan and vegetation protection plans have been reviewed and approved by the community development director as part of the final development order.

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- (5) A state licensed tree farm/nursery, where such vegetation is intended for sale in the ordinary course of the licensee's business and was planted for the described purpose.
 - (6) A state licensed land surveyor in the performance of his/her duties, provided such removal is for individual trees within a swatch less than three feet in width.
 - (7) Mangrove alteration projects that are exempted from state department of environmental protection permit requirements by F.A.C. 17-321.060.
 - (8) The city planning board may grant a variance to the provisions of this section if compliance with the mangrove tree preservation standards of this division would impose a unique and unnecessary hardship on the owner or any other person in control of affected property. Relief shall be granted only upon demonstration by the landowner or affected party that such hardship is peculiar to the affected property and not self-imposed, and that the grant of a variance will be consistent with the intent of this article and the comprehensive plan.

(Ord. No. 02-23, § 3, 9-3-2002)

Sec. 30-934. Vegetation removal permit application requirements.

- (a) The community development director shall not issue a vegetation removal permit until all applicable federal, state, and local approvals have been obtained. These approvals may include, but are not limited to:
 - (1) Building permits.
 - (2) Special treatment (ST) development permits.
 - (3) U.S. Army Corps of Engineers permits/exemptions.
 - (4) State department of environmental protection permits/exemptions.
 - (5) South Florida Water Management District permits/exemptions.
 - (6) Other applicable agency reviews/permits/exemptions.
 - (7) Other city approvals.
- (b) Application for a vegetation removal permit shall be submitted to the community development director in writing on a form provided by the community development department. The application shall include the following information:
 - (1) A generalized vegetation inventory, based upon the most current available information, shall show the approximate location and extent of vegetation upon the site. For nonresidential and multifamily development, the inventory may be in the form of an aerial or a field survey, and may be accompanied by photographs or videotapes illustrating typical areas of vegetation referenced to positions on the aerial or survey.
 - (2) A brief written inventory assessment and evaluation of the plant communities that have been identified on the site shall be prepared by a person knowledgeable in the identification and evaluation of vegetative resources, such as a forester, biologist, ecologist, horticulturist, landscape architect, or certified nurseryman. The assessment shall include an evaluation of character and quality of the plant communities identified, including their rarity, viability, and such other physical characteristics and factors that may affect their preservation.
 - (3) A site plan which includes:
 - a. Property dimensions.
 - b. Location of existing infrastructures and alterations.

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- c. Location of proposed structures, infrastructure and alterations.
 - d. The location and species of all protected vegetation. Large stands of a single species, such as mangroves, may be indicated as a group with an approximate number or area.
 - e. Specific identification of all specimen trees.
 - f. Designation of all protected vegetation proposed for removal.
 - g. Location of detail of protective barricading of the vegetation to be retained.
 - h. Description of any proposed alteration of mangroves.
 - i. Description of any proposed maintenance trimming of mangroves.
- (4) An executed statement that includes:
- a. Name, address, and phone of property owner.
 - b. Name, address, and phone of authorized agent and on-site representative.
 - c. Proof of ownership.
 - d. Legal description.
 - e. Reason for proposed removal.
 - f. Method to distinguish vegetation to be removed from vegetation to be preserved and method of removal. It should be noted that the root system of the vegetation shall also be protected.
 - g. Signature of property owner or copy of a specific contract signed by property owner.
- (5) Vegetation relocation plan. If vegetation relocation is proposed by the applicant prior to site development plan, construction plan or other final approvals, a vegetation relocation permit (vegetation removal permit) may be issued by the community development director provided that it can be demonstrated that early transplantation will enhance the survival of the relocated vegetation. A vegetation relocation plan shall document methods of relocation, timing of relocation, watering provisions, maintenance and other information as required by the development services director.

(Ord. No. 02-23, § 4, 9-3-2002)

Sec. 30-935. Review procedures.

- (a) *Issuance of permit.* Based on the information contained in the application and obtained from the on-site inspection, the community development director may approve or deny an application. An approved vegetation removal permit is valid for a period not to exceed 180 days except for mangrove alteration. Mangrove alteration permits shall be valid for the date of issuance by the state department of environmental protection. An extension requested prior to expiration of the original permit may be granted for good cause shown upon written application to the community development director. The community development director may attach conditions to the permit relative to the methods of designating and protecting vegetation not proposed for removal. A violation of these conditions shall be cause to void the vegetation removal permit.
- (b) *Denial of permit.* In the event the community development director denies an application, the reason(s) shall be noted on the application and returned promptly.
- (c) *Permit fees.* All vegetation removal and clearing permit applications requiring review and approval shall be charged a review fee unless specifically exempted by the community development director pursuant to this code. The city council shall establish and adopt, by resolution, a schedule of fees for vegetation removal,

review and approval permits. The schedule of fees and the resolution establishing such fees shall be on file with the city clerk. The schedule of fees may be changed by resolution of the city council.

(Ord. No. 02-23, § 5, 9-3-2002)

Sec. 30-936. Prohibited exotic vegetation removal.

- (a) Exotic vegetation removal is unlawful without first obtaining a permit. A vegetation removal fee shall not be required to remove currently listed prohibited exotic vegetation. Prior to issuance of a building permit, prohibited exotic vegetation may be removed from lots which are zoned residential single-family (RSF), and mobile home (MH).
- (b) (1) The city may require an adjoining property owner(s) to remove prohibited exotic species from adjacent properties at the time a building permit is issued. And further, the city shall require property owners to remove exotic species that are deemed to present a threat to public health, safety, and welfare. The following list is an example of exotic vegetation found on Marco Island:
 - a. Australian Pine (*Casuarina* spp.).
 - b. Melaleuca (*Melaleuca* spp.).
 - c. Brazilian Pepper (*Schinus terebinthifolius*).
 - d. Earleaf Acacia (*Acacia auriculiformis*).
 - e. Catclaw Mimosa (*Mimosa pigra*).
 - f. Java Plum (*Syzygium cumin*).
 - g. Downy Rosemyrtle (*Rhodomyrtus tomentosus*).
 - h. Women's Tongue (*Albizia lebbbeck*).
- (2) Prohibited exotic vegetation removal and methods of removal shall be conducted in accordance with the specific provisions in each local development order.
- (3) Protection of native vegetation shall be required during prohibited exotic vegetation removal.
- (4) Prohibited exotic vegetation shall be removed:
 - a. From all rights-of-way, common area tracts not proposed for development and easements prior to preliminary acceptance of the phase of the required subdivision improvements;
 - b. From within the associated phase of the final site development plan prior to the issuance of a certificate of occupancy.
 - c. From single-family and two-family lots for all new principal dwelling units before a certificate of occupancy is granted. The removal of prohibited exotic vegetation shall be required in perpetuity.
- (5) Verification of prohibited exotic vegetation removal shall be performed by the community development director's field representative.
 - a. Herbicides utilized in the removal of prohibited exotic vegetation shall have been approved by the U.S. Environmental Protection agency.
 - b. When prohibited exotic vegetation is removed, but the base of the vegetation remains, the base shall be treated with an U.S. Environmental Protection Agency approved herbicide and a visual tracer dye shall be applied.

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- (6) A maintenance plan shall be submitted to the community development director for review on sites which require prohibited exotic vegetation removal prior to the issuance of the local development order. This maintenance plan shall describe specific techniques to prevent reinvasion by prohibited exotic vegetation of the site in perpetuity. This maintenance plan shall be implemented on a yearly basis at a minimum.

(Ord. No. 02-23, § 6, 9-3-2002)

Sec. 30-937. Vegetation protection and removal.

- (a) *Vegetation protection.* In general, during construction, cut and fill activities, land alteration, construction material storage, driving or parking of equipment, or trenching, all reasonable steps necessary to prevent the destruction or damaging of vegetation and public and private trees on city owned property shall be taken, including the installation of protective barriers. All new development not specifically exempted by this article shall retain existing native vegetation to the maximum extent possible, especially where said native vegetation exists within required buffer areas. Vegetation destroyed or receiving major damage must be replaced by vegetation of equal environmental value, as specified by the city manager or designee, before occupancy or use unless approval for their removal has been granted under permit.
- (1) *Filling and construction debris.* During construction, unless otherwise authorized in the vegetation removal permit, no excess soil, additional fill, equipment, liquids, signs or construction debris shall be placed within the dripline of any vegetation or public and private trees on city owned property that is required to be preserved in its present location.
- (2) *Attachments.* Unless otherwise authorized by the vegetation removal permit, no attachments or wires other than those of a protective or nondamaging nature shall be attached to any vegetation and public and private trees on city owned property during construction.
- (3) *Excavation.* Unless otherwise authorized by the vegetation removal permit, no soil is to be removed from within the dripline of any vegetation or public and private trees on city owned property that are to remain in their original location.
- (4) *Protective barriers.* All protective barriers shall be installed and maintained for the period of time beginning with the commencement of any phase of land clearing construction activities, cut and fill activities, land alteration, construction material storage, driving or parking of equipment, trenching or building operations and ending with the completion of that phase of the construction work on the site, unless otherwise approved to be removed by the city manager or designee's field representative. All protective barriers shall be installed pursuant to the Tree Protection Manual for Builders and Developers, Division of Forestry, State of Florida, or other methods approved by the city manager or designee.
- a. Areas to be preserved shall be protected during land alteration, construction activities, cut and fill activities, construction material storage, driving, parking of equipment or trenching, by placing a continuous barrier around the perimeter of the area of vegetation and public and private trees on city owned property to be preserved. This barrier shall be highly visible and constructed of wood stakes set a maximum of eight feet apart, at a height of four feet, all covered continuously with brightly colored, all-weather mesh material or equal-type barrier method. An equivalent method may be substituted with the approval of the city manager or designee.
- b. When the preservation of single trees is required by this Code, a protective barrier shall be placed around the tree at a distance from the trunk of six feet or beyond the dripline, whichever is greater, or as otherwise approved by the city manager or designee's field representative.

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- (5) *Equipment.* No equipment, waste or materials including, but not limited to, paints, oils, solvents, asphalt, concrete, mortar shall be cleaned or stored within the dripline on any public or private trees on city owned property.
 - (6) *De-watering.* During de-watering activities, the discharge from de-watering shall be directed in a manner that does not cause standing water to accumulate at the base of any public or private trees on city owned property.
 - (7) *Silt barriers.* Silt barriers, hay bales, or similar effective erosion silt control barriers shall be required in any area where erosion or siltation may cause damage to any public and private trees on city owned property.
 - (8) *Inspections.* The city manager or designee shall conduct periodic inspections of the construction site in order to ensure compliance with this section.

(Ord. No. 02-23, § 7, 9-3-2002; Ord. No. 09-14, § 5, 10-19-2009)

Sec. 30-938. Restoration and penalties.

- (a) *Restoration standards.* The person(s) responsible for violations of the environmental sections of this article shall be notified according to this article and shall have 30 days to prepare a mitigation plan that is acceptable to the city to resolve the violation. The mitigation plan shall be submitted to the community development director and/or staff for review and comment. Once the community development director accepts the plan, the responsible party shall have 15 days to complete the mitigation unless other arrangements are specified and agreed upon in the mitigation plan.
 - (1) Requirements for a mitigation plan:
 - a. A copy of the deed, contract for sale or agreement for sale or a notarized statement of ownership clearly demonstrating ownership and control of the subject lot or parcel of land, or permission from the landowner to mitigate on his or her site shall be provided.
 - b. The mitigation plan shall be prepared by a person who meets or exceeds the credentials specified in this article.
 - c. The plan shall designate the person's name, address and telephone number that prepared the plan.
 - d. A north arrow, scale, and date shall be required on the plan.
 - e. Existing vegetation areas shall be shown.
 - f. The proposed planting areas shall be clearly defined.
 - g. The plan shall denote the number and location of each plant to be planted, or for the case of ground covers, show them in groupings. Large mitigation areas may be designated by a more simplified method.
 - h. All plants proposed shall be denoted by genus, species, and the common name.
 - i. The plan shall identify what is adjacent to the mitigation areas, i.e. existing forest (provide type), farm, natural buffer area, lake, etc.
 - (2) The mitigation plan shall include the following minimum planting standards:
 - a. In the successful replacement of trees illegally removed, replacement trees shall be of sufficient size and quantity to replace the diameter at breast height (dbh) inches removed. In addition, the understory vegetation shall be restored to the area from which protected trees were unlawfully

removed. The selection of plants shall be based on the characteristics of the Florida Land Use, Covers and Form Classifications System (FLUCCS) Code. Shrubs, ground cover, and grasses shall be restored as delineated in the FLUCCS Code. The species utilized shall be with relative proportions characteristic of those in the FLUCCS Code. The exact number and type of species required may also be based upon the existing indigenous vegetation on the adjacent property at the discretion of the community development director. (Dbh is defined for the purposes of this article as diameter of the tree, measured at a height of 4.5 feet above natural grade.)

- b. Each replacement tree shall be native Florida grade no. 1 as graded by the state department of agriculture and consumer services, grades and standards for nursery plants. All plants not listed in this manual shall conform to FL no. 1 as to health and vitality, conditions of foliage, root system and free of pest or mechanical damage.
 - c. All replacement trees shall be nursery grown, containerized and at a minimum be seven to eight feet in height, have minimum caliper of one to 1½ inches at 12 inches above natural grade.
 - d. Replacement trees shall have a guarantee of 80 percent survivability for a period of not less than three years. A maintenance provision of not less than three years must be provided in the restoration plan to control invasion of currently listed exotic vegetation.
 - e. It shall be at the discretion of the community development director to allow for any deviation from the above specified ratio.
- (3) In the event that identification of the species of trees is impossible for any reason on the property where protected trees were unlawfully removed, it shall be presumed that the removed trees were of a similar species mix as those found on adjacent properties.
 - (4) If the unlawful removal of trees has caused any change in hydrology, ground elevations or surface water flows, then the hydrology, ground elevation or surface water flows shall be restored to pre-violation conditions.
 - (5) In the event of impending development on property where protected trees were unlawfully removed, the restoration plan shall indicate the location of the replacement stock consistent with any approved plans for subsequent development. For the purposes of this article, impending development shall mean that a developer has made application for a development order or has applied for a building permit.
 - (6) The community development director may, at his discretion, allow the replacement stock to be planted off-site where impending development displaces areas to be restored. In such situations, off-site plantings shall be on lands under the control of a public land and/or agency. The off-site location shall be subject to the approval of the community development director.
 - (7) The donation of land and/or of funds under the control of a public agency may be made if none of the above are viable alternatives. This donation of land and/or funds shall be equal to or greater than the total sum it would cost to restore the area in which the violation occurred. (Preservation of different contiguous habitats is to be encouraged.)
 - (8) The existing soil types shall be identified. Plants proposed for planting shall be compatible with the soil type. The 1954 or the 1992 soil survey of Collier County shall be used to determine if the plants proposed for planting are compatible with the existing or proposed soil types.
 - (9) The source and method of providing water to the plants shall be indicated on the plan and subject to review and approval.
 - (10) A program to control prohibited exotic vegetation in the mitigation area shall be required.
 - (11) City review of mitigation plan.

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- a. The community development department will review the plan based on, but not limited to, the preceding requirements within 15 days. Additional relevant information may be required when requested.
 - b. Should the city reject the mitigation plan, the reasons will be provided so the applicant can correct the plan and resubmit for city review.

(12) Monitoring and replanting.

- a. A monitoring program shall be required that would determine the survivability by species of the plants used in the mitigation effort. A minimum of five reports will be submitted. Reports shall be due at one-year intervals.
 - b. Eighty percent survival by species shall be required for a five-year period unless other arrangements are specified and agreed upon in the mitigation plan. Replanting shall be required each year if the mortality exceeds 20 percent of the total number of each species in the mitigation plan.
 - c. The soil and hydrological conditions for some mitigation areas may favor some of the plants and preclude others. Should the city and/or consultant find that over time, some of the species planted simply do not adjust, both the consultant and the city shall reevaluate the mitigation plan, and a revised plan will be instituted. This condition shall not apply to all mitigation areas and each case will be evaluated individually, based on the supporting data submitted by the mitigator.
- (b) *Penalties, fines and imprisonment.* Any person violating any provisions of this code or the conditions of a permit issued here under, and not specifically covered in this article, shall constitute a misdemeanor and each protected living, woody plant, constituting protective vegetation, removed in violation of this code shall constitute a separate and distinct offense and upon conviction shall be punished by a fine not to exceed \$500.00 per violation or by imprisonment in the county jail not to exceed 60 days, or by both such fine and imprisonment. In addition to or in lieu of the penalties provided by general law for violation of ordinance, the city council may bring injunctive action to enjoin the removal of vegetation in violation of this code.

(Ord. No. 02-23, § 8, 9-3-2002)

Sec. 30-939. Appeal from enforcement.

Any person, who feels aggrieved by the application of this division, may file, within 30 days after said grievance, a petition with the community development director, to have the case reviewed by the city code enforcement board.

(Ord. No. 02-23, § 9, 9-3-2002)

Sec. 30-940. Suspension of permit requirement.

The city council may, by emergency resolution, suspend the permit requirement for vegetation removal in the aftermath of a natural disaster, such as a hurricane, when the following conditions are met and contained in the resolution:

- (1) The suspension is for a defined period of time not to exceed 30 days or as otherwise set by the city council.
- (2) The vegetation removal is necessitated by disaster related damage.
- (3) The suspension is not applicable to vegetation within habitats containing listed species.

(4) The vegetation to be removed is not a specimen tree.
(Ord. No. 02-23, § 10, 9-3-2002)

Secs. 30-941—30-960. Reserved.

ARTICLE IV. LANDSCAPING

Sec. 30-431. Title and citation.

This article shall be known and may be cited as the "City of Marco Island Landscape Code."

(Ord. No. 02-22, § 1, 7-15-2002)

Sec. 30-432. Intent and purpose.

The purpose and intent of the landscape code is to:

- (1) Promote the health, safety, and welfare of residents of the city by establishing minimum uniform standards for the installation and maintenance of landscaping;
- (2) Improve the aesthetic appearance of commercial, and residential developments through the requirement of minimum landscaping in ways that harmonize the natural and built environment; promote preservation and planting of native plants and plant communities;
- (3) Improve environmental quality by reducing and reversing air, noise, heat, and chemical pollution through the preservation of canopy trees and the creation of shade and microclimate;
- (4) Reduce heat gain in or on buildings or paved areas through the filtering capacity of trees and vegetation; and
- (5) Promote water conservation by encouraging the use of native and drought-tolerant vegetation and properly zoned irrigation system through xeriscape.

(Ord. No. 02-22, § 2, 7-15-2002)

Sec. 30-433. Landscaping and irrigation plan procedures.

Landscape plan required. Prior to the issuance of any subdivision plat or site development plan, an applicant whose development is covered by the requirements of this code shall submit a complete landscape plan to the community development director or his designee. This includes commercial, institutional, and multifamily developments. The landscape plan shall be prepared by and bear the seal of a registered landscape architect.

- (1) Prior to the issuance of a certificate of occupancy for a single-family residence, the owner or owners' representative shall prepare and submit a copy of the final "as-built" survey that accurately depicts the approximate location of code-required landscaping materials on the property, including the common name of tree species installed, and the height at the time of planting. This landscape plan will be used in conjunction with the final inspection of the single-family residence, and kept as part of the permanent file.

Except in the case of a single-family residence, as described above, the landscape plan shall be drawn to a suitable scale, include dimensions, north arrow, date, title, project owner's name and address, delineate the existing and proposed parking, vehicular use areas, buildings, access points and roadways, show all utility lines or easements, and show the location of existing and proposed planting areas and vegetation communities and designate them by species name. The code-required

landscaping shall be highlighted or indicated on the plan to differentiate from the applicant's provided landscaping that is in addition to that required by this code. Design creativity is encouraged so long as it meets the intent of this code. The plan shall show the location of permanent vegetation protection devices, such as barricades, curbing, and tree wells. The plan shall also include a chart indicating graphic plant symbol, botanical and common name, quantity, height, spread, spacing, native status, drought tolerance rating (as defined by "Florida Friendly Landscaping", as may be amended from time to time, published by Florida Department of Environmental Protection and University of Florida, Florida-Friendly Landscape Guidance Models for Ordinances, Covenants, and Restrictions) and type of industry practices and standards. In addition, a tabulation of the code-required landscaping indicating the calculations necessary to ensure compliance with this code should also appear. A certificate of occupancy permit shall not be issued until approval of the landscaping plan and installation of plants are inspected by the city.

- (2) *Irrigation plan required.* All new single-family residences, multifamily, commercial and institutional developments shall be irrigated by the use of an automatic irrigation system with controller set to apply water in a manner consistent with this code. Irrigation plans for multifamily, commercial and institutional developments shall be prepared by persons qualified to prepare irrigation plans, such as an irrigation designer or landscape architect. Moisture detection devices shall be installed with all automatic sprinkler systems to override the sprinkler activation mechanism during periods of increased rainfall. Where existing irrigation systems are modified requiring the acquisition of a permit, automatic activation systems and overriding moisture detection devices shall be installed in compliance with this code.

Required irrigation installed at single-family residences does not require the submittal of an irrigation plan. The system must be installed by a licensed professional prior to the issuance of a certificate of occupancy. As part of the final inspections for the residence, the irrigation system will be inspected to ensure the inclusion of the following system elements: control valve; vacuum breaker; timer (clock); and rain sensor.

- a. The irrigation plan shall be drawn at the same scale as the landscape plan to: show existing vegetation to remain; delineate existing and proposed buildings and other site improvements, parking spaces, aisles, and driveways; indicate main valve, and pump locations, pipe sizes and specifications; show controller locations and specifications; show backflow preventer and rain-sensing devices and include a sprinkler-zoning plan indication type, specifications, spacing, and coverage. If drip irrigation or soaker hoses are proposed, their layout shall be shown.
 - b. Reference the city public right-of-way ordinance for irrigation system requirements within the public right-of-way. (Reserved.)
- (3) *Existing plant communities.* Existing plant communities and ecosystems shall be maintained in a natural state and shall not be required to be irrigated. Native plant areas that are supplements to an existing plant community or newly installed by the applicant shall be irrigated on a temporary basis only during the period of establishment from a temporary irrigation system, water truck, or by hand watering with a hose.
- (4) *Cultivated landscapes.* Cultivated landscape areas (sod, shrubs, and trees) shall be provided with an automatic irrigation system to improve the survivability of the required landscaping. Sprinkler heads irrigating lawns or other high water demand areas shall be zoned separately from those irrigating trees, shrubbery, groundcover, flowers, or other reduced water requirement areas. Automatically controlled irrigation systems shall be operated by an irrigation controller that is capable of watering "high water" requirement areas at different frequencies and duration than "low water requirement areas". Landscaping shall only be watered on as-needed basis.

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- (5) *Irrigation systems.* Irrigation systems shall be designed for the zoning of high and low water use areas. Plans shall include in schedule form, the irrigation system's total gallons per minute (GPM) for each zone, recommended zone running times in minutes, hours and showing days per week, and estimated zone precipitation rate in inches per hour. The irrigation system shall be generally designed to apply one inch of water per week during two operations per week. The system coverage shall be designed for 100 percent coverage unless specified by the designer. The system shall be generally designed for the 100 percent head-to-head coverage as generally recommended by the irrigation sprinkler manufacturers for matched precipitation. These requirements may be adjusted for retention areas. The irrigation system shall be designed and installed in accordance with the Florida Irrigation Society's, Standards and Specifications for Turf and Landscape Irrigation Systems (as amended). Irrigation systems utilizing well water shall be designed and maintained in a manner which eliminates staining of the building, walks, walls, and other site improvements. All systems shall be designed to minimize the application of water onto sidewalks, driveways, streets, and other impervious areas. Irrigation systems, other than drip or soaker hose systems, shall be operated between the hours of midnight and 8:00 a.m. South Florida Water Management District (SFWMD), the city, or other utility company water use restrictions shall supersede these requirements. There are no operational requirements for irrigation systems utilizing effluent/reused water sources.
- (6) *Installation.* Prior to the issuance of any certificate of occupancy permit for a use required to provide landscaping and irrigation in accordance with this section, all required landscaping and irrigation shall be installed and in place as set out in this code. All plant materials must be installed in accordance with accepted landscape practices in the area and meet the plant material standards contained in this code. Plant materials shall be installed in soil conditions that are conducive to the proper growth and the plant material.

(Ord. No. 02-22, § 3, 7-15-2002; Ord. No. 11-07, § 2, 6-20-2011)

Sec. 30-434. Pruning, maintenance, and removal.

- (a) *Pruning.* Vegetation required by this Code shall be pruned by property owners to promote healthy, uniform, natural growth of the vegetation. Pruning shall be performed in accordance with the current edition of pruning standards published by the American National Standard Institute (ANSI) A300 Pruning Standards, ANSI Z133.1 Safety Standards. Trees shall not be severely pruned in a manner that would damage the vegetation and permanently restrict growth or height. Severely pruned trees are considered damaged and a public nuisance, which shall be replaced with trees equal to the number and height of the damaged trees. A plant's growth habit shall be considered to determine the extent of pruning necessary to maintain healthy growth.
- (1) *Utility pruning.* Utilities shall conform to current ANSI A-300 standards when performing line clearing work within public right-of-way. All utilities shall notify the city manager or designee by electronic communication or mail no later than 30 business days prior to performing any utility line clearing work within public right-of-ways. Franchised utilities, after notifying the city manager or designee, shall meet with the city manager or designee to review and approve plans and schedules for utility line clearing work. Franchised utilities shall have an ISA certified arborist directing the pruning of public and private trees. Utility pruning should only provide minimum safe clearance to protect energized power lines with consideration for the combined movement of the conductors near trees in severe weather, the species of the tree, and the voltage of the conductor.
- (2) *Canopy and root pruning.* When activities affect public or private trees so that more than 50 percent of the area within the dripline is disturbed, or when pruning must be performed on the crown of a public or private tree, the following arboricultural techniques are required:

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- a. When the area within the dripline will be disturbed, the affected roots must be severed by clean pruning cuts where the activity impacts the roots. Roots may be pruned by utilizing trenching equipment that is specifically designed for this purpose or by hand digging a trench and pruning roots with a chain saw, pruning saw or other equipment designed for tree pruning. Roots within the dripline shall be pruned to a depth of 12 inches below existing grade or to the depth of the disturbance if less than 12 inches from the existing grade. When underground utilities are to be installed through the dripline, root pruning requirements may be waived by the city manager or designee if the lines are installed via tunneling or directional boring.
 - b. All pruning of public or private trees shall conform to the current ANSI standards defined herein and shall be supervised by an ISA certified arborist. There shall be no flush cuts, stub cuts, or lion's tailing of the crown of the tree.
 - c. It shall be a violation of this section to perform the techniques of topping, hatracking or other pruning techniques that remove the vertical leader stems or other pruning which results in an unnecessary reduction of shade of public or private trees.
- (b) *Maintenance.* The owner shall be responsible for the continued maintenance and upkeep of all required landscaping so as to present a healthy plant in a condition representative of the species. Tree and palm staking shall be removed between six and 12 months after installation. All landscapes shall be kept free of refuse, debris, disease, pests, and weeds and shall be fertilized and irrigated to maintain plants in a healthy condition. Special maintenance requirements necessary to preserve the design professional's intent shall be noted on the planting plan.
- (1) *Care and maintenance of permitted private trees on city owned property.* The care and maintenance of all private trees permitted on city owned property shall be the responsibility of the adjacent property owner. A permit shall be obtained from the city manager or designee prior to planting a private tree in the public right-of-way or on other city property. Property owners shall adhere to the maintenance and pruning standards contained herein when maintaining privately-owned trees on city property. Property owners must apply for a vegetation removal permit from the city manager or designee in accordance with Code article XIV and a permit to replace any private tree in the right-of-way in accordance with Code section 30-435.
 - (2) *Care and maintenance of public trees on city owned property.* The city manager shall designate a department to be responsible for the care and maintenance of public trees on city owned property. Public trees are city street trees, median trees and cul-de-sac trees as defined in section 30-10. The department shall adhere to the maintenance and pruning standards contained herein when maintaining public trees on city property. The department director shall make reports and requests for funds for the care and maintenance of public trees, including needed planting and replanting, to the city council as part of the annual budget approval process. Before removing any public tree from the right-of-way, the department director shall notify the city manager and any other affected department directors.
 - (3) *Private care and maintenance of public trees on city owned property.* Private property owners may make a written request to the city manager or designee for permission to care for and maintain public trees on public property. Property owners shall adhere to the maintenance and pruning standards contained herein when maintaining publically owned trees on city property. Before replanting, removal or replacement of any public tree, a private property owner shall obtain the permission of the city manager or designee to plant the tree, shrub or other vegetation and if necessary apply for a vegetation removal permit from the city manager or designee in accordance with article XIV. If the replanting shall be in the right-of-way, the property owner shall obtain a permit from the city manager or designee in accordance with section 42-76. Fees for a permit for vegetation removal or replanting shall be waived for public trees.

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- (c) *Removal of damaged or nuisance trees.* Ongoing maintenance to prohibit the establishment of prohibited exotic species is required. Any plant materials of whatsoever type or kind required by these regulations shall be replaced within 30 days of their demise and/or removal.
 - (d) *Compliance.* Code compliance will inspect areas affected by this code and issue citations for violations. If the required corrective action is not taken within the time allowed, the city may use any available means of enforcement to secure compliance including, but not limited to:
 - (1) Prosecution before the city code enforcement board;
 - (2) Withholding of any permit, construction plan approval, certificate of occupancy, or inspection by the city; and
 - (3) Placing a lien on the property, to include all administrative, legal, material and installation costs.

(Ord. No. 02-22, § 4, 7-15-2002; Ord. No. 09-14, § 4, 10-19-2009; Ord. No. 11-07, § 2, 6-20-2011)

Sec. 30-435. Plant material and installation standards.

- (a) *Quality.* Plant materials used to meet the requirements of this section shall meet the standards for Florida No. 1 or better, as set out in Grades and Standards for Nursery Plants, part I and part II, Department of Agriculture, State of Florida (as amended). Root ball sizes on all transplanted plant materials shall also meet state standards.
 - (1) At least 50 percent of the trees and 50 percent of the shrubs used to fulfill these requirements shall be native or naturalized Southern Floridian species, as determined by accepted valid scientific reference. The "Recommended Trees and Shrubs for the City of Marco Island List" is available for reference at city hall.
 - (2) In addition, for all sites, at least 50 percent of the trees and shrubs used to fulfill these requirements shall be drought-tolerant species as listed in the South Florida Water Management District's Plants for Your Florida-Friendly Landscape. Reference to be used in the native determination may include, but not be limited to:

Long, R.W., and O. Lakela, 1976. A Flora of Tropical Florida. Small, J.K., 1933. A Manual of the Southeastern Flora. Wunderlin, R.P., 1982. Guide to the Vascular Plants of Central Florida.
 - (3) Where Florida-friendly plants are to be utilized, use the South Florida Water Management District Plants for Your Florida-Friendly Landscape (as amended) as a reference.
- (b) *Trees and palms.* All required new individual trees shall be species having an average mature spread or crown of greater than 20 feet and having trunk(s), which can be maintained in a clean condition with over ten feet of clear wood. Trees adjacent to walkways, bike paths and rights-of-way shall be maintained in a clean condition with over ten feet of clear wood. Trees having an average mature spread or crown less than 20 feet may be substituted by grouping the same so as to create the equivalent of a 20-foot crown spread. For code-required trees, at least 50 percent of the trees shall be canopy type trees and 50 percent may be palms. The minimum size of the trees at the time of installation shall be as follows:

Single-family single story structures.

Canopy trees:

(50 percent) Ten feet, four-foot spread, 1.75 inch caliper (at 12 inches above the ground).

(50 percent) Eight feet, three-foot spread, 1.50 inch caliper (at 12 inches above the ground).

All other single story structures (multifamily, commercial, and institutional).

Canopy trees: (50 percent) Twelve to 24 feet on average height, six-foot spread, three-inch caliper, six- to seven-foot clear trunk, 65 gallon minimum. Container or ball and burlaped (B&B).

Palms: (50 percent) Twelve feet clear trunk height minimum with 15-foot minimum mature clear trunk height.

All multiple story structures (single-family, multifamily, commercial, and institutional).

Canopy trees:

(25 percent) Twelve to 14 feet on average height, six-foot spread, three-inch caliper, seven-foot clear trunk, 65-gallon minimum. Container or ball and burlaped (B&B).

(25 percent) Sixteen to 18 feet on average height, seven-foot spread, four-inch caliper, seven-foot clear trunk, 100 gallon minimum. Container or ball and burlaped (B&B).

Palms:

(25 percent) Twelve-foot clear trunk height minimum with 15-foot minimum mature clear trunk height.

(25 percent) Fifteen-foot clear trunk height minimum with 18-foot minimum mature clear trunk height.

A grouping of three palm trees will be equivalent to one canopy tree. Exceptions will be made for Roystonea spp. (Florida Royal Palm) and Phoenix spp. (Canary Island Date Palm not including Roebelenii) which shall count one palm tree for one canopy tree. Also, exceptions will be made for Cocos spp. (Coconut Palm) and Arecastrum spp. (Queen Palm) which shall count two palm trees for one canopy tree. In side and rear yard locations, palms can only be substituted for 50 percent of the canopy tree requirement. Front yards may have 75 percent palms, and are encouraged within commercial zoning districts.

- (c) *Tree species mix.* When trees are required to be planted to meet the requirements of this code, a mix of species shall be provided. The number of species to be planted shall vary according to the overall number of trees required to be planted. The minimum numbers of species to be planted are indicated below.

Required Species Mix

Required Number of Trees	Minimum Number of Species
2—10	2
11—20	3
21—30	4
31+	5

- (d) *Screening/buffering.* Where screening is required (refer to Table 2) it shall be accomplished by the use of or combination of hedges, shrubs, ground covers, berming, and decorative fences or walls in combination with shrubs, vines and ground covers covering 50 percent or more of the fence or wall. The screening/buffering shall be designed to create within 12 months a 100 percent opaque visual screen/buffer, to be maintained in perpetuity, except for visibility requirements at vehicular access points, street intersections, and pedestrian access points.

- (1) *Minimum shrub sizes for opaque hedges at time of installation.* Ten-gallon container, 48-inch height, 36-inch spread minimum, with the 48-inch height measured from the top of the root ball to the extent of the upper most foliage planted four feet on center.
- (2) *Minimum shrub sizes at time of installation adjacent to right-of-way and vehicular use areas.* Three-gallon container minimum planted 36 inches on center with a minimum height of 24 inches and spread consistent to the species of plant, but meeting a Florida No. 1 or better nursery grown grade. The 24-inch height is measured from the top of the root ball to the extent of the upper most foliage.

(e) *Ground covers.* Prior to the issuance of a site permit, certificate of completion or certificate of occupancy for any single-family residence, multifamily, commercial, or institutional development, ground coverings, as described below, shall be installed. Artificial turf or similar synthetic turf materials are expressly prohibited as ground covers unless otherwise approved by standards and specifications approved by city council.

(1) *Lawn grass.* All lawn areas shall be sodded and/or planted with turf species normally grown as permanent lawns within the Southwest Florida area. Solid sod shall be used in swales or other areas subject to erosion. The use of drought-tolerant species is encouraged. Reference the city public right-of-way ordinance for requirements within the public right-of-way.

(2) *Florida-friendly landscape.* Florida-friendly landscape practices are encouraged in all zoning districts. Landscape areas utilizing Florida-friendly designs are those that comply with the principals of Florida-Friendly Landscape consistent with the standards provided in the following publications, as may be amended from time to time:

- "Florida Yards and Neighborhoods (FYN) and Environmental Landscape Management (ELM)," the University of Florida Cooperative Extension Service (UF-IFAS)
- "Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries (2008)," Florida Water Management Districts
- "The Florida Yards & Neighborhoods Handbook", Florida Water Management Districts
- "Waterwise Florida Landscape Guide," Xeric Landscaping with Florida Native Plants," Association of Florida Nurseries
- "Waterfront Property Owner's Guide," Florida Department of Environmental Protection

Landscape designs utilizing the Florida-friendly landscape principles are encouraged for the protection of water quality and water conservation and should incorporate the following nine principals:

- a. The right plant in the right place;
- b. Efficient watering with properly zoned irrigation systems;
- c. Appropriate fertilization;
- d. Mulching properly;
- e. Attraction of wildlife;
- f. Responsible management of yard pests with limited use of chemicals;
- g. Recycling yard waste;
- h. Reduction of stormwater runoff; and
- i. Waterfront protection.

(3) *Impervious surfaces, single-family districts.* No more than 67 percent of the total lot area within a single-family zoning district shall be covered with impervious surfaces. The use of pervious pavers will be considered in the calculation to the extent the applicant provides credible evidence of the permeability of the surface. Impervious surfaces may not cover a French drain, if required, except that up to two four-foot-wide walkways to a dock facility may be used;

(4) *Pervious surfaces, all districts.* Pervious yard areas shall include no more than 20 percent coverage with non-organic material such as stone, gravel or pavers unless approved under Florida-friendly landscape principles by the city manager or designee. Pervious yard areas shall include no more than 30 percent organic groundcover such as mulch, bark, pine needles and yard clippings, unless approved under Florida-friendly landscape principles by the city manager or designee.

(f) *Prohibited species.* The following plant species shall not be planted:

- (1) *Enterolobium cyclocarpum* (Ear tree).
- (2) *Melia azedarach* (Chinaberry tree).
- (3) *Bischofia javanica* (Bishopwood).
- (4) *Scaevola frutescens* (Australian inkberry).
- (5) *Dalbergia sissoo* (Indian rosewood).
- (6) *Sapium sebiferum* (Chinese tallow tree).
- (7) *Ardisia elliptica* (Shoe button ardisia).

This list is an example and shall be subject to revision as exotic plant species are determined to be noxious, invasive, cause environmental degradation to native habitats, or to be detrimental to human health, safety, or the public welfare by the Florida Exotic Pest Plant Council (FLEPPC). The current FLEPPC List of Invasive Plant Species can be found at www.fleppc.org.

(g) *Prohibited invasive exotic species.* In addition to the prohibitions outlined in subsection 30-435(f), the following species or seeds thereof shall not be grown, offered for sale, or transported inter-city or intra-city.

- (1) *Melaleuca* spp. (Punk tree).
- (2) *Schinus terebinthifolius* (Brazilian pepper).
- (3) Any member of the family Casuarinaceae (Australian pine).
- (4) *Rhodomyrtus tomentosus* (Down rosemyrtle).
- (5) *Dioscorea bulbifera* (Air potato).
- (6) *Colubrina asiatica* (Lather leaf).
- (7) *Lygodium* spp. (Climbing fern).
- (8) *Syzygium cumini* (Java plum).
- (9) *Mimosa pigra* (Catclaw mimosa).
- (10) *Acacia auriculiformis* (Ear leaf acacia).
- (11) *Albizia lebbbeck* (Women's tongue).
- (12) *Ficus microcarpa* (Laurel fig).

This list is an example and shall be subject to revision as exotic plant species are determined to be noxious, invasive, cause environmental degradation to native habitats, or to be detrimental to human health, safety, or the public welfare by the Florida Exotic Pest Plant Council (FLEPPC). The current FLEPPC List of Invasive Plant Species can be found at www.fleppc.org.

(h) *Regulations.* Public and private trees and landscaping shall not be planted or replaced in the right-of-way until a permit has been issued by the city manager or designee in accordance with section 42-76. In addition to the standard for issuance contained in subsection 42-76(f), the following standards shall apply. In the event of a conflict, the more restrictive standard shall govern.

1. No permit is required to perform grass maintenance in public right-of-ways.
2. All permitted trees and plant material placed in public rights-of-way do not create or vest any property right in association with a permit, except in the city. Permittees shall be responsible for the

maintenance of such trees and plant material, as provided herein, unless otherwise removed or specified as a condition of the permit issued pursuant to section 42-76.

3. A property owner desiring to privately landscape the public right-of-way shall submit a landscape and irrigation plan to the city manager or designee. The application shall include three sets of detailed plans indicating existing rights-of-way facilities, type and location of proposed plantings, and location of electrical and irrigation systems.
4. After review and acceptance of the landscape and irrigation plans, a landscape agreement shall be signed by the permittee to insure that the permittee or his or her successor or assignee shall be responsible to maintain such material and irrigation systems until removed or otherwise specified. The agreement shall be recorded in the official records of Collier County.
5. Tree planting distance from the edge of the sidewalk on private property shall be no closer than 36" from the trunk of tree. Under no circumstances shall trees be planted within the flow line of a swale regardless of the setback from the edge of the sidewalk.
6. Tree plantings must not interfere with line of sight triangles at anytime or with ingress or egress to the property.
7. Trees planted in the public right-of-way in close proximity (less than ten feet) to underground utilities shall be reviewed and approved by the city manager or designee.
8. Trees planted in the public right-of-way under power supply lines shall be of the type that do not grow taller than 15 feet. The owner shall be responsible to maintain trees under or adjacent to the power supply to prevent power failure.
9. Existing private trees located in the public right-of-way may be adversely impacted by various underground construction activities undertaken by the city. The city shall not be responsible for any adverse impact on existing private trees in the public right-of-way from underground activities undertaken by the city.

(Ord. No. 02-22, § 5, 7-15-2002; Ord. No. 05-02, § 1, 3-21-2005; Ord. No. 09-14, § 4, 10-19-2009; Ord. No. 10-04, § 2.5., 4-19-2010; Ord. No. 11-07, § 2, 6-20-2011; Ord. No. 15-04, § 1, 3-2-2015)

Sec. 30-436. Existing plant material.

- (a) All new and or redevelopment shall retain existing native and mature vegetation to the maximum extent possible. Existing native vegetation shall be retained unless stormwater management design, necessary grade changes, required infrastructure or approved construction footprints necessitate its removal. The need to remove existing vegetation shall be demonstrated by the applicant as part of the building permit or site development plan review process. Areas of retained vegetation shall be preserved in their entirety with all trees, under story, and ground covers left intact and undisturbed provided that prohibited exotic plant materials as defined herein are to be removed.
- (b) During construction, all reasonable steps necessary to prevent the destruction or damaging of existing vegetation shall be taken. No excess soil, additional fill, equipment, liquids, or construction debris shall be placed within the drip line of any vegetation that is required to be preserved, or that will be credited towards the required landscaping.
- (c) Protective barriers shall be installed and maintained beyond the drip line of all retained vegetation unless site improvements prohibit installation of barriers beyond the drip line, and shall remain in place for the duration of the construction process phase. The location of the protective barriers shall be determined by a landscape architect or design professional.

(Ord. No. 02-22, § 6, 7-15-2002)

Sec. 30-437. Tree preservation credits.

Existing native trees may be credited towards meeting the minimum tree planting requirements according to the formula in Table 1. Fractional measurements shall be attributed to the next lowest category.

Table 1. Calculation of Tree Preservation Credits

Existing Crown Spread of Preserved Trees	or	Diameter of Tree at 4.5 Feet Above Natural Grade	=	Number of Tree Credits
50 feet or greater	or	26 inches or greater	=	3
40 to 49 feet	or	20 to 25 inches	=	2
30 to 39 feet	or	13 to 9 inches	=	2
20 to 29 feet	or	8 to 12 inches	=	1
10 to 19 feet	or	2 to 7 inches	=	1
Less than 10 feet	or	1½ to 2 inches	=	1*

*Credited against equivalent required tree only.

(Ord. No. 02-22, § 7, 7-15-2002)

Sec. 30-438. Site distance triangles, signage and berms.

- (a) *Safe sight distance triangles at intersections and access points.* Where an access way intersects a right-of-way or when a property abuts the intersection of two or more rights-of-way, a minimum safe sight distance triangular area shall be established. Within this area, vegetation shall be planted and maintained in a way that provides unobstructed visibility at a level between 18 inches and ten feet above the adjacent access. (See Figure 1).

Where an access way enters a right-of-way, two safe distance triangles shall be created diagonally across from each other on both sides of the access way. Two sides of the triangle shall extend 15 feet each way from the point of intersection from the edge of pavement and the right-of-way line. The third side of the triangle shall be a line connecting the ends of the other two sides.

Where a property abuts the intersection of two rights-of-way, a safe distance triangle shall be created. Two sides of the triangle shall extend 30 feet along the abutting right-of-way lines, measured from the point of intersection. The third side of the triangle shall be a line connecting the ends of the other two sides.

- (b) *Signage located within/adjacent to landscape buffer area.* All trees and shrubs located within a landscape buffer shall be located so as not to block view of signage. Where specimen trees exist, the signage setback location may be administratively reduced per the land development code. Code required plantings should progress in height away from the street. Signs may be permitted within the restricted area of the landscape buffer to a minimum setback of one-half the buffer width along with an overall reduction of the sign size requirements as described by 50 percent.

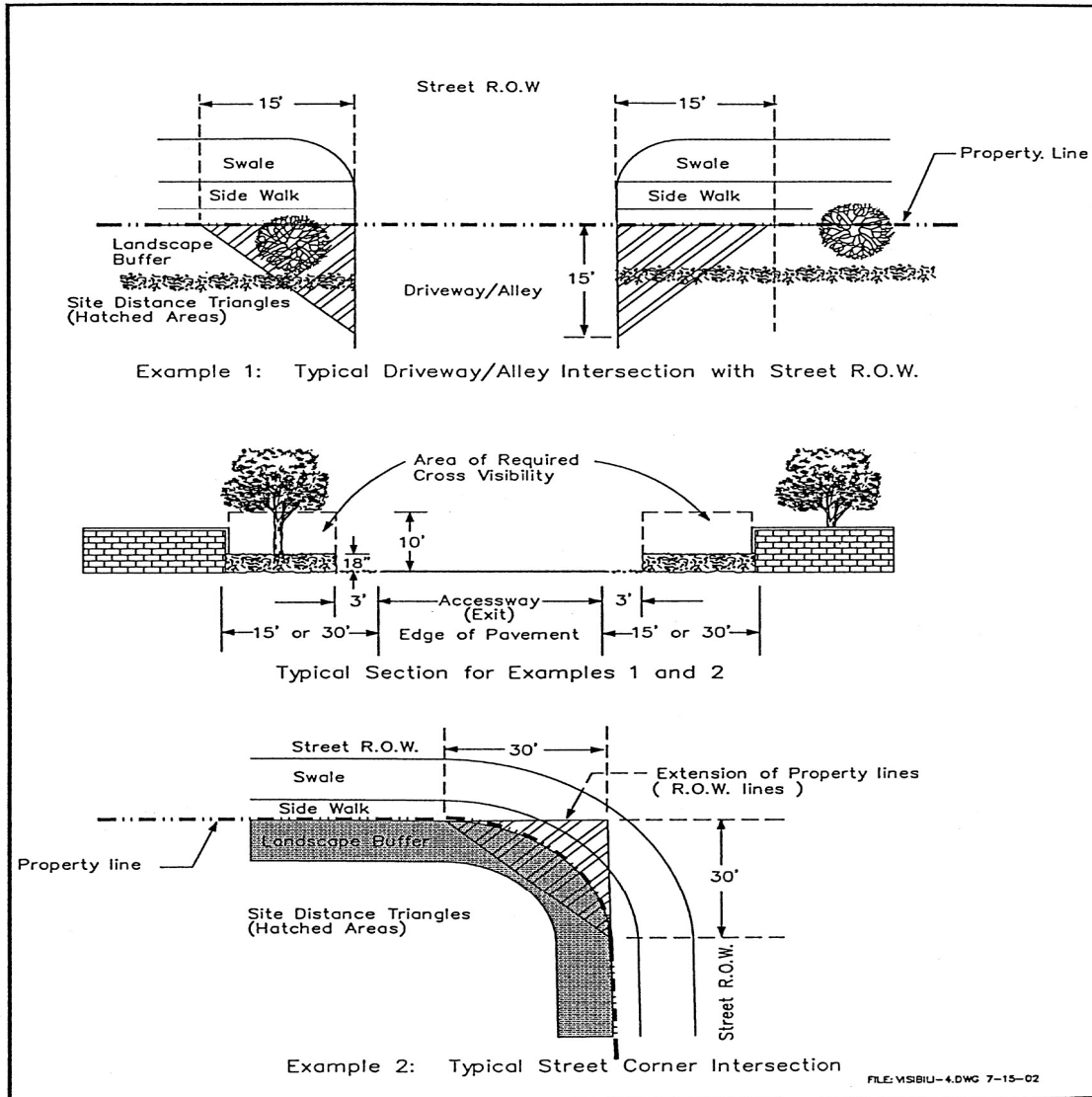


Figure 1. Sight Distance Triangles

- (c) *Landscape berms.* All perimeter landscape berms over two feet in height shall meet or exceed the minimum standards as set forth herein. All grassed berms shall have side slopes no greater than four to one. Berms planted with ground cover and landscaping shall have side slopes no greater than three to one. Existing native vegetation shall be incorporated into the berms with all slopes fully stabilized and landscaped with trees, shrubs, and ground cover. Landscape berms shall not be placed within easements without written approval from all entities claiming an interest under said easement.

(Ord. No. 02-22, § 8, 7-15-2002)

Sec. 30-439. Minimum landscaping required for vehicular use areas.

- (a) Applicability. The provisions of this section shall apply to all new and redevelopment of off-street parking or other vehicular use areas. Existing landscaping which does not comply with the provisions of this code shall be brought into conformity to the maximum extent possible when: the vehicular use area is altered or expanded except for restriping of lots/drives, the building square footage is changed, or the structure or a unit within the structure has been vacant for a period of 30 days or more and a request for an occupational license to resume business is made. These provisions shall apply to all developments with the exception of single-family, two-family, and mobile home dwelling units, on individually platted lots. Any appeal from an administrative determination relating to these regulations shall be to the board of zoning appeals or equivalent.
- (b) Landscaping required in interior of vehicular use areas for multifamily, institutional, and commercial developments. At least ten percent of the amount of vehicular use area on-site shall be devoted to interior landscaping areas. The width of all curbing shall be excluded from the required landscaped areas. All interior landscaped areas not dedicated to trees or to preservation of existing vegetation shall be landscaped with grass, ground cover, shrubs or other landscape treatment. One tree shall be provided for every 250 square feet of required interior landscaped area. Interior landscaped areas shall be a minimum of five feet in width and 150 square feet in area. The amount of required interior landscape area provided shall be shown on landscape plans.
- (c) All rows of parking spaces shall contain no more than ten parking spaces uninterrupted by a required landscaped island, which shall measure inside the curb not less than eight feet in width and at least eight feet in length and at least 100 square feet in area. At least one tree shall be planted in each island. These islands shall not be used as retention areas or as swales. Landscape islands for compact car parking areas shall be at least seven feet in width and at least 100 square feet in area. These tree requirements shall be met with existing native trees whenever such trees are located within the parking areas and may be feasibly incorporated into the landscaping. Where existing specimen trees are retained in landscape islands, the amount of parking spaces in that row may be increased to 15. A parking stall shall be no farther than 50 feet from a tree, measured to the tree trunk. Interior landscaping areas shall serve to divide and break up the expanse of paving at strategic points and to provide adequate shading of the paved area. Perimeter landscaping shall not be credited toward interior landscaping.
- (d) Interior landscaping areas shall be provided within the interior of all vehicular use areas. Landscaped areas, wall structures and walks shall required protection from vehicular encroachment through appropriate wheel stops, curbs or other structures.
- (e) Vehicular overhang of landscape areas. The front of a vehicle may overhang any landscaped area a maximum of two feet, provided the landscaped area is protected by motor vehicle wheel stops or curbing. Two feet of such landscaped area or walkway may be part of the required depth of each abutting parking spaces. Walkways shall be a minimum of six feet in width if a vehicle is to overhang the walkway. The landscaping of the two-foot area of vehicular overhang shall be accomplished with ground covers only that reach height of 12 inches or less and shall not be a woody type plant.

(Ord. No. 02-22, § 9, 7-15-2002)

Sec. 30-440. Minimum landscaping requirements.

- (a) Landscaping for all new development, including single-family, two-family, mobile home, multifamily, commercial, and institutional uses shall include as a minimum, the number of trees set forth below. Areas dedicated as preserves and conservation areas shall not be counted to meet the requirements of this

section. When calculating minimum tree requirements, a fractional unit of 0.50 or greater shall require an additional tree.

- (1) *Single-family, two-family, and mobile home developments.* One canopy tree per 2,500 square feet of lot area, or two canopy trees per lot, whichever is greater, with the maximum number required: 15 trees per lot. One or more canopy trees, palms, or grouping of palms meeting the code requirements shall be located within ten feet of the front property line.
- (2) *Multifamily developments.* One canopy tree per 2,000 square feet of pervious site area excluding preserves. This is in addition to other landscaping requirements.
- (3) *Commercial and institutional developments.* One canopy tree per 3,000 square feet of pervious site area excluding preserves. This is in addition to other landscaping requirements.
- (4) *Building perimeter plantings.* All commercial, institutional, and multifamily developments inclusive of accessory uses shall provide building perimeter plantings in the amount of 100 square feet per 1,000 square feet of proposed building ground level floor area, except within the Elkcam Circle Zoning Overlay. These planting areas shall be located adjacent to the building and shall consist of landscape areas, raised planters, or planter boxes that are a minimum of five feet wide. Seating courtyards, eating areas and plazas may be incorporated within them. Additional design criteria is provided in article VIII.

(Ord. No. 02-22, § 10, 7-15-2002)

Sec. 30-441. Minimum landscape buffering and screening between uses.

- (a) **Applicability.** The buffering and screening shown in Table 1 shall be required under this section and shall apply to all new and redevelopment of commercial, institutional, and multifamily development. Existing landscaping which does not comply with the provisions of this section shall be brought into conformity to the maximum extent possible when the vehicular use area is altered or expanded except for restriping of lots/drives, the building square footage is changed, or the structure or a unit within the structure has been vacant for a period of 30 consecutive days or more and a request for an occupational license to resume business is made.
- (b) The buffering and screening provisions of this code will be applicable at the time of planned unit development (PUD), subdivision plat (PSP), or site development plan (SDP) review, with the installation of the buffering and screening required pursuant to Table 2. Where a more intensive land use is developed contiguous to a property within a similar zoning district, the community development director or designee may require buffering and screening the same as for the higher intensity uses.
- (c) Landscape buffering and screening standards shall conform to the minimum buffering and screening standards of the zoning district it most closely resembles. The community development director or designee may approve alternative landscape buffering and screening standards when such alternative standards have been determined by use of professional acceptable standards to be equivalent to or in excess of the intent of this code.
- (d) **Standards.** Trees and shrubs shall be installed at the height specified in this code, unless otherwise noted.
- (e) **Water management systems,** which shall include retention and detention areas, swales, and subsurface installations, shall be permitted within a required buffer provided they are consistent with accepted engineering and landscaping practice and the following criteria:
 - (1) Water management systems shall not exceed 50 percent of the square footage of any required side, rear, or front yard landscape buffer.

-
- (2) Water management systems shall not exceed 70 percent of the required buffer width. A minimum five-foot wide 10:1 level planting area shall be maintained where trees and hedges are required.
 - (3) Exceptions to these standards may be granted on a case-by-case basis, evaluated on the following criteria:
 - a. Water management systems, in the form of dry retention, may utilize an area greater than 50 percent of the buffer when existing native vegetation is retained at natural grade.
 - b. For lots of record 10,000 square feet or less in size, water management areas may utilize an area greater than 50 percent of the required side and rear yard buffers. A level planting area of at least three feet in width shall be provided in these buffers.
 - (f) Vehicular use, or any other impervious areas shall not occupy any part of a required alternative A, B, or C type buffer except as written below:
 - (1) Driveways and sidewalks that are constructed perpendicular to the required buffer and provide direct access to the property;
 - (2) Parallel meandering sidewalks occupy the buffer and its width is increased by the equivalent sidewalk width.
 - (g) Types of buffers. Within a required buffer area, the following alternative shall be used based on the matrix in Table 2.

Alternative A: Ten-foot-wide landscape buffer with trees spaced no more than 30 feet on center.

Alternative B: Fifteen-foot-wide, opaque within one year, landscape buffer maintained at six feet in height, which may include a wall, fence, hedge, berm or combination thereof, including trees spaced no more than 25 feet on center. When planting a hedge, it shall be a minimum of ten gallon plants, 48 inches in height, three feet in spread and spaced a minimum four feet on center at planting.

Alternative C: A landscape buffer shall be required adjacent to any road right-of-way external to the development project. Said landscape buffer shall be consistent with the provisions of the city master plan, which is incorporated by reference herein. The minimum width of the perimeter landscape buffer shall vary according to the ultimate width of the abutting right-of-way. Where the ultimate width of the right-of-way is zero to 99 feet, the corresponding landscape buffer shall measure at least ten feet in width. Where the ultimate width of the right-of-way is 100 or more feet, the corresponding landscape buffer shall measure at least 15 feet in width. Developments within the town center mixed use district shall provide a perimeter buffer of at least 20 feet in width, regardless of the width of the right-of-way. The exception to this landscape buffer requirement is property located within the Elcam Circle Overlay as provided for in the land development code. The town center mixed use district right-of-way buffer requirements shall not be applicable to roadways internal to the development or along alleys, however, these areas shall provide the applicable landscape buffer per this code.

Trees shall be provided in an amount equivalent of one tree per 30 feet of buffer length abutting the right-of-way. Trees shall be spaced so to provide for an unimpeded proper and mature growth of the trees being used. Trees with less than a 20 foot crown spread shall not be used within this buffer unless under overhead utilities or are trees above the number required of this code. Applicants whose properties require installation of type "C" buffers within 500 feet of a major arterial or collector roadway intersection shall install required canopy trees at 16—18 feet heights with seven-foot minimum canopy spread, 4 inch diameter caliper and seven-foot clear trunks or palms with 15-foot clear trunks within the type "C" buffer areas.

A double hedge row of at least 24 inches in height at the time of planting and attaining a minimum of three feet height within one year shall be required in the landscape buffer where vehicular areas and parking spaces are adjacent to the road right-of-way.

The remaining area of the landscape buffer shall consist of existing native vegetation, grass, ground cover, or other landscape treatment. Every effort shall be made to retain and incorporate the existing native vegetation in these areas.

Type "C" buffers shall be permitted to utilize the adjacent right-of-way roadway shoulder for landscape and retention area purposes and based upon the following conditions:

- (1) A meandering sidewalk is provided crossing back and forth over the property or right-of-way line.
- (2) Retention areas recreated so to be shallow dry type retention areas and not continuous in line or length. Retention areas must also be interconnected with piped drainage systems and connected into the site's overall system or outfall area.
- (3) Include along each right-of-way one pedestrian entrance/rest area containing decorative paving, one bench, one bike rack and one trash receptacle. The one per right-of-way requirement can be reduced to one if the pedestrian entry/rest area is located at the corner of the property at a roadway intersection and enlarged in areas containing two each of the above listed site furnishings. Parking requirements may be reduced by one space per pedestrian entry/rest area.
- (4) The plan and layout is approved by the city's public works director and the community development director or designee.

Table 2 Table of Buffer Requirements by Land Use Classifications

Subject Property's District/Use	Adjacent Properties District							
	1	2	3	4	5	6	7	8
1.) Residential (RSF) single-family	-	B	B	B	B	*	C	-
2.) Residential RMF-6, RMF-12, RMF-16) multifamily	B	A	A	B	B	*	C	-
3.) Residential Tourist (RT)	B	A	A	A	B	*	C	-
4.) Commercial (C-1, C-1/T, C-2, C-3, C-4, C-5)	B	B	B	A	B	*	C	B
5.) Public Use (P), community facility (CF), Golf Course Clubhouse, Amenity Center	B	B	B	B	A	*	C	A
6.) Planned unit development (PUD)	*	*	*	*	*	*	C	*
7.) Vehicular rights-of-way	C	C	C	C	C	C	-	-
8.) Golf course	-	-	-	-	-	-	-	-

The letter listed under "adjacent properties district" shall be the landscape buffer and screening alternative required. The "-" symbol shall represent that no buffer is required. The PUD district buffer, due to a variety of differing land uses, is indicated by the "*" symbol, and shall be based on the landscape buffer and screening of the district or use with the most similar types, densities and intensities of use. Where a conflict exists between the buffering requirements and the yard requirements of this code, the yard requirements of the subject-zoning district shall apply.

Buffer areas located between commercial out parcels within a shopping center may be shared and a minimum of ten feet wide. This does not apply to right-of-way buffers.

(Ord. No. 02-22, § 11, 7-15-2002)

Sec. 30-442. Marco Island streetscape plan.

(Reserved.)

(Ord. No. 02-22, § 12, 7-15-2002)

Sec. 30-443. Cul-de-sac beautification.

Permission for any cul-de-sac improvements by residents must be submitted to the city public works department for approval. Submissions must include a drawing showing all improvements along with an agreement to provide maintenance for the improvements.

(Ord. No. 02-22, § 13, 7-15-2002)

Sec. 30-444. Tree fund.

The City shall establish a tree fund, which shall be used exclusively for plant replacement and to provide necessary maintenance of damaged trees. Penalties, fines and tree replacement payments, as provided for in this article, shall be deposited into the tree fund. The public may donate money to the city's tree fund to assist the city in its beautification efforts.

(Ord. No. 09-14, § 4, 10-19-2009)

Secs. 30-445—30-480. Reserved.



FLORIDA CHAPTER of the INTERNATIONAL SOCIETY OF ARBORICULTURE

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DETERMINING THE MITIGATION VALUE OF ROADSIDE VEGETATION

May 31st, 2000

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Key Words and Definitions

- o *Diameter* - a standard measurement for forest trees recorded at 54" (inches) above grade.
- o *Caliper* - a standard measurement for nursery trees recorded at 6" (inches) above grade on trees up to and including 4" (inches) in caliper, and 12" above grade for larger trees.
- o *Diminution* - the depreciation factor(s) of a tree's condition expressed as a percentage multiplier.
- o *Square inch value* - the monetary value of one square inch of trunk area, *contained within* a caliper or diameter measurement, derived from the value of one 6" caliper replacement tree.
- o *Qualified nursery grower* - a wholesale plant nursery registered with the Division of Plant Industry; with promulgated prices.
- o *Replacement cost method(s); cost to cure, and appraisal methodologies* - values of plants and tree appraisal methodologies are based on, "Florida #1 or better," plants from a qualified nursery grower as outlined in, *Grades and Standards for Nursery Plants*. Florida Department of Agriculture and Consumer Services, Division of Plant Industry. 2nd Edition: February 1998.
- o *Pruning, Fertilization, and Safety* - all work on trees, shrubs, and woody plants shall conform to ANSI A-300 Part 1 & 2, and ANSI 2133.1. American National Standards Institute. 11 West 42nd Street, New York, New York 10036
- o *Collector* - a person or company who finds palm trees growing in situations where the collector purchases the subject tree; harvests, delivers, and installs to an end user.

Appraisal Methodologies

1. Trees 6" caliper or less - replacement cost method
 - o Three (3) wholesale values from a qualified nursery grower
 - o Average wholesale cost of casualty replacement tree (same species)
 - o x 2.5 mark-up of the average wholesale plant price
 - o x diminution rating
 - o = mitigation cost

Example:

- o A 4" sweetgum tree (*Liquidambar styraciflua*) is removed
- o A 4" sweetgum tree (replacement) averages \$155.00 wholesale cost
- o $\$155.00 \times 2.5 = \387.50
- o $\$387.50 \times \text{diminution of } 70\% = \271.25
- o mitigation cost = \$271.25

2. Trees 6" diameter or greater - replacement cost method
 - o Three (3) wholesale values from a qualified nursery grower
 - o Average wholesale cost of largest available replacement tree (same species) (6" diameter)
 - o x 2.5 mark-up of the average wholesale plant price
 - o x the diameter of the subject casualty tree
 - o x diminution rating
 - o = mitigation cost

Example:

- o An 18" live oak tree (*Quercus virginiana*) is removed
- o A 6" live oak tree (replacement) averages \$550.00 wholesale cost
- o $\$550.00 \times 2.5 = \1375.00
- o $\$1375.00 \div 6"$ (replacement tree) = \$229.00 per diameter inch
- o 18" (casualty tree) x \$229.00 (replacement tree) = \$4,122.00
- o $\$4,122.00 \times$ diminution of 70% = \$2885.40
- o mitigation cost = \$2,885.40

3. Trees larger than 36" diameter - replacement cost method
 - o Trunk area mitigation method
 - o Average of three (3) wholesale values from qualified nursery growers
 - o Average wholesale cost of largest same species replacement tree (6" diameter)
 - o Determine square area of inches within diameter
 - o x square inch value
 - o x diminution rating
 - o = mitigation cost

Example

- o A 37" live oak tree (*Quercus virginiana*) is removed
- o A 6" live oak tree (replacement) averages \$550.00 wholesale cost
- o $\$550.00 \times 2.5 = \$1,375.00$
- o A 6" diameter tree has 28 square inches of trunk area (0.785 d²)
- o $\$1,375.00 \div 28$ square inches (6" replacement tree) = \$49.11 per square inch of Trunk Area
- o 37" subject casualty live oak tree = 1075 square inches of Trunk Area
- o 1075 (square inches of trunk area) x \$49.11 = \$52,793.25
- o $\$52,793.25 \times$ diminution of 70%
- o mitigation cost = \$36,955.28

4. Shrubs - Cost to Cure method
 - o Three (3) wholesale values from a qualified nursery grower
 - o using same replacement plant species and size as casualty plant species
 - o x 2.5 mark-up of the average wholesale plant price
 - o x the actual number of casualty plants
 - o x diminution rating
 - o = mitigation cost

Example

- o Twenty (20), 4' x 4' ligustrum plants are removed
- o A 4' x 4' ligustrum replacement plant averages \$22.50
- o $\$22.50 \times 2.5 = \56.25 each
- o $\$56.25 \times 20$ removed ligustrum plants = \$1,125.00
- o $\$1,125.00 \times$ diminution of 70% = \$787.50
- o mitigation cost = \$787.50

5. Palm Trees - replacement cost method

- o Three (3) wholesale values from a qualified nursery grower or collector
- o Average wholesale cost of same size and species replacement palm tree, if available. If replacement palm tree is not available from wholesale grower or collector, then the average wholesale cost of a replacement palm tree (same species) will be calculated by over-all height, clear trunk, clear wood, or other measurement as defined in “*Replacement cost method(s); cost to cure, and appraisal methodologies*” (Refer to Key Words and Definitions)
- o x 2.5 mark-up of the average wholesale plant price
- o x the diameter of the subject casualty tree
- o x diminution rating
- o = mitigation cost

Example (Palm replacement tree available)

- o A 16’ Washington palm tree (*Washingtonia robusta*) is removed
- o A 16’ Washington palm tree replacement averages \$8.00 per foot wholesale cost or collector cost
- o $\$8.00 \times 2.5 = \20.00 per foot
- o $\$20.00 \times 16' = \320.00
- o $\$320 \times \text{diminution of } 70\% = \224.00
- o mitigation cost = \$224.00

Example (Palm replacement tree **not** available)

- o A 40’ Washington palm tree (*Washingtonia robusta*) is removed
- o A 40’ Washington palm tree replacement is not available from a wholesale grower or collector
- o The wholesale or collectors cost is \$8.00 per foot (based on a 16’ replacement tree)
- o $\$8.00 \times 2.5 = \20.00 per foot
- o $\$20.00 \times 40' = \800.00
- o $\$800.00 \times \text{diminution of } 70\% = \560.00
- o mitigation cost = \$560.00

6. Transplant - cost to cure method

- o The cost to transplant, install, and establish plants (including trees) into a remainder site or other FDOT approved site.

7. Timber cruise method

- o Valuations based upon the methodologies outlined in *Forestry Handbook*, 2 nd Edition, Society of American Foresters, 1984.

Note: The appraisal methodologies outlined above are intended for application by qualified professionals with Advanced Training in Roadside Vegetation, provided by the Florida Chapter, International Society of Arboriculture. This document is incorporated by reference in Rule 14-40.030, Florida Administrative Code.

DETERMINING THE MITIGATION VALUE OF ROADSIDE VEGETATION

Key Words and Definitions

- *Diameter* - a standard measurement for trees recorded at 54" (inches) above grade.
- *Condition Rating* – assessment of the health and structure of a tree expressed as a percentage multiplier.
- *Replacement Tree* - the tree located in the marketplace which shall be used as a basis of valuation for the casualty tree.
- *Qualified Nursery Grower* - a wholesale plant nursery registered with the Division of Plant Industry; with promulgated prices. The name and phone number of the qualified nursery grower shall be included in the report.
- *Average Wholesale Value* – average of three (3) wholesale values from a qualified nursery grower. When three (3) wholesale values are not found utilize available data and/or comparative species for comparable.
- *Installed price* – the average wholesale value times 2.5

Appraisal Methodologies

1. Replacement Cost Method – Utilize this method for those trees (other than Palm Trees) that can be found in the open marketplace of the same species, cultivar, and size of the casualty tree.

- Three (3) wholesale values from a qualified nursery grower
- Average wholesale cost of casualty replacement tree, same size, same species and cultivar
x 2.5 mark-up of the average wholesale plant price
x condition rating
= mitigation cost

Example:

A 4" diameter sweetgum tree (*Liquidambar styraciflua*) is removed
A 4" diameter sweetgum tree (replacement) averages \$155.00 wholesale cost
 $\$155.00 \times 2.5 = \387.50 (installed price)
 $\$387.50 \times \text{condition rating of } 70\% = \271.25
mitigation cost = \$271.25

2. Inch for Diameter Inch Replacement Method – Utilize this method for casualty trees (other than Palm Trees) which cannot be found in the open marketplace in the same or similar size.

- Three (3) wholesale values from a qualified nursery grower
- Average wholesale cost of, at minimum, a 3" diameter replacement tree, same species and cultivar
x 2.5 mark-up of the average wholesale plant price
 $\div 3$ (total diameter inches of the replacement tree, same species and cultivar)
x the diameter of the subject casualty tree
x condition rating

= mitigation cost

Example:

An 18" diameter live oak tree (*Quercus virginiana*) is removed. An 18" diameter live oak tree is not found in the open marketplace.

A 3" diameter live oak tree (replacement tree, same species and cultivar) averages \$275.00 wholesale

$\$275.00 \times 2.5 = \687.50 (installed price of 3" replacement tree, same species and cultivar)

$\$687.50 \div 3$ (total diameter inches of the 3" replacement tree, same species and cultivar)

= \$229.17 per diameter inch

18 (casualty tree) $\times$ \$229.17 (diameter inch value) = \$4,125.06

$\$4,125.06 \times$ condition rating of 70% = \$2,887.54

mitigation cost = \$2,887.54

3. Relative Comparison Analysis Approach – Utilize this method when the casualty plant or tree cannot be found growing or for sale in the open marketplace at any size. This approach to value establishes the cost of the replacement species similar to the function and/or attributes of the casualty species. Once the comparative species is identified, value the replacement tree as found in the Inch for Diameter Inch Replacement model.

Example:

A species of tree is a casualty and cannot be found in the open marketplace. Based on the information in the *Species Rating List, published by the International Society of Arboriculture*, it is discovered that a bottlebrush is a comparative function/attribute species. Use this comparative species utilizing the Inch for Diameter Inch Replacement Model to value the casualty tree.

4. Replacement Cost Method - Shrubs

Use same replacement plant species, cultivar and size as casualty plant species

Three (3) wholesale values from a qualified nursery grower

$\times 2.5$ mark-up of the average wholesale plant price

$\times$ the actual number of casualty plants

$\times$ condition rating

= mitigation cost

Example (Replacement shrub available)

Twenty (20), 4' x 4' ligustrum plants are removed

A 4' x 4' ligustrum replacement plant averages \$22.50 per plant

$\$22.50 \times 2.5 = \45.00 each

$\$45.00 \times 20$ removed ligustrum plants = \$900

$\$900 \times$ condition rating of 70% = \$630

mitigation cost = \$630

Note: If the casualty plant is larger than the largest replacement plant in the open marketplace, determine the per foot value of the largest replacement plant to be used as a multiplier for the casualty plant size.

Example (Replacement shrub not available)

A 6' x 6' ligustrum plant is removed

A 4' x 4' ligustrum is known to be valued at \$45.00 each

$\$45.00 \div 4 = \11.25 per foot

$\$11.25 \times 6 = \67.50

$\$67.50 \times 2.5 = \168.75 each

$\$168.75 \times \text{condition rating of } 70\% = \118.13

mitigation cost = \$118.13

5. Replacement Cost Method - Palm Trees

Note: Palm trees may be measured by over-all height, clear trunk or clear wood.

- Three (3) wholesale values from a qualified nursery grower or collector
- Average wholesale cost of same size and species replacement palm tree
- x 2.5 mark-up of the average wholesale palm tree price
- x the unit of measurement of the subject casualty palm tree
- x condition rating
- = mitigation cost

Example (Palm replacement tree available)

A 16' tall Washington palm tree (*Washingtonia robusta*) is removed

A 16' tall Washington palm tree replacement averages \$8.00 per foot wholesale cost or collector cost

$\$8.00 \times 2.5 = \20.00 per foot

$\$20.00 \times 16' = \320.00

$\$320.00 \times \text{condition rating of } 70\% = \224.00

mitigation cost = \$224.00

Note: If replacement palm tree is not available from wholesale grower or collector, then the average wholesale cost of the replacement palm tree, same species will be calculated by over-all height, clear trunk or clear wood.

Example (Palm replacement tree **not** available)

A 40' tall Washington palm tree (*Washingtonia robusta*) is removed

A 40' tall Washington palm tree replacement is not available from a wholesale grower or collector

The wholesale or collector cost is \$8.00 per foot (based on a 16' tall replacement palm tree)

$\$8.00 \times 2.5 = \20.00 per foot

$\$20.00 \times 40' = \800

$\$800 \times \text{condition rating of } 70\% = \560.00

mitigation cost = \$560.00

Note: The appraisal methodologies outlined above are intended for application by qualified professionals and/or tree care practitioners.

Authored with the assistance of: Joseph Samnik, *Expert Tree Consultants, LLC*

Tree Risk Assessment Methods: A Comparison of Three Common Evaluation Forms¹

Andrew K. Koeser, Gitta Hasing, Drew McLean, and Rob Northrop²

Introduction

All trees pose some level of risk to nearby people, structures, and utilities. Typically, this risk is minimal and is far outweighed by the environmental, social, and economic benefits offered by the tree in question. As trees age or become weakened by pests, disease, and/or other stresses, this balance may shift, requiring a tree owner or manager to decide what risk level he or she is willing to accept and what modifications, if any, are needed. Experienced arborists can aid in this decision process by conducting a professional risk assessment that specifies the likelihood of whole or partial tree failure, the consequences of such a failure, and the potential targets affected.

A variety of risk assessment methods have been developed to guide professionals through the tree inspection process. In North America, three risk assessment methods have gained the greatest acceptance among tree care professionals, municipal urban forestry programs, and government agencies. These methods are:

- **International Society of Arboriculture (ISA) Tree Hazard Evaluation Method** (Matheny and Clark 1994)
- **United States Department of Agriculture (USDA) Forest Service Community Tree Risk Evaluation Method** (Pokorny 2003)

- **ISA Tree Risk Assessment Best Management Practice (BMP) Method** (Dunster et al. 2013; Smiley et al. 2011)

Sidebar 1.

Quantitative vs. Qualitative Risk Assessment

Although the ISA Tree Hazard Evaluation Form and the USDA Forest Service Community Tree Risk Evaluation Form both generate a numerical rating as a final product of the assessment process, they are not quantitative assessment methods. The numeric inputs used to generate a final score are qualitative or subjective ratings of defect severity, size of defective part, and target. To help eliminate this confusion and the false sense of accuracy that was often experienced with these qualitative, mathematical formulas, the updated International Society of Arboriculture Best Management Practice method has replaced numerical rankings with descriptive categories, such as “improbable,” “possible,” “probable,” and “imminent” for likelihood of failure. Users are guided through a series of decision matrices to determine the overall risk rating. If using one of the risk assessment forms that generates a final, numerical rating, note that this value is intended for assessing populations of trees. No concrete risk threshold can be applied to categorize a single tree as either “safe” or “hazardous” (everything rated greater than seven must be removed). Instead, numerical ratings allow users to prioritize risk reduction efforts by addressing the trees that pose the greatest potential threat to people and property first and, as resources and time permit, working down the list to lower-rated trees.

Each risk assessment method is paired with its own data collection form. These forms serve many functions and in particular, they:

1. Pull out and summarize key concepts within each assessment methodology

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U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, dean for UF/IFAS Extension.

2. Guide the user through a systematic assessment of root, trunk, and crown conditions
3. Ensure the collection of standardized data
4. Provide a written record of the assessment and any prescribed risk abatement measures

Throughout this article, we use risk assessment *method* and *form* interchangeably because both are closely and deliberately linked by their associated developers. This does not suggest, however, that a potential user can gain all the background he or she needs from the form alone. Each risk assessment method included in this review is thoroughly documented with its own user manual. These manuals should be repeatedly referenced until the user becomes sufficiently experienced in the method used. Face-to-face training may also be available for the USDA Forest Service Community Tree Risk Evaluation method and the ISA Tree Risk Assessment BMP method.

For this article, we field tested the ISA Hazard Evaluation, the USDA Forest Service Community Tree Risk Evaluation, and the ISA Tree Risk Assessment Best Management Practice (BMP) risk assessment processes on three different trees in a botanical garden (Figure 1). In comparing the three methods and their data collection forms, we assessed the:

- similarities and differences,
- perceived advantages and disadvantages,
- time required for completion of a basic visual assessment, and
- potential application in commercial arboriculture and municipal forestry settings.



Figure 1. The three risk assessment processes reviewed all included data entry forms to facilitate the systematic collection of standardized information.

Credits: Gitta Hasing, UF/IFAS

These evaluations offer practical insights for arborists and urban foresters wanting to adopt a tree risk assessment method to aid in their professional responsibilities.

General Comparison of Data Collected

Sidebar 2.

Risk vs. Hazard

Something is considered a hazard if it simply has the potential (no matter how small) to cause harm. In contrast, risk is the *likelihood* that a potential hazard will cause harm, and risk is situation dependent. For example, even very hazardous waste materials can pose minimal risk to health and safety, if handled and contained appropriately. Similarly, large trees with compromised structures near targets are more likely to cause harm than small trees with the same probability of failure in remote areas.

Risk Assessment Background, Perceived Advantages/Disadvantages, Time Requirements, and Applicability in Arboriculture and Urban Forestry ISA Tree Hazard Evaluation Form (from A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas)

Background: The ISA Tree Hazard Evaluation Form, which was developed by Nelda Matheny and James Clark and last updated in the second edition of *A Photographic Guide to the Evaluation of in Urban Areas* (1994), has been widely used and modified by municipalities and commercial arborists. Though the ISA (working with Matheny) has since published the ISA Tree Risk Assessment BMP, a new risk assessment approach, the original form is still used by many in the industry.

Advantages: The ISA Tree Hazard Evaluation Form summarizes an industry-accepted method for documenting risk and prioritizing hazard abatement efforts. The level of detail is suitable for a basic visual assessment of an individual or small group of trees. When used correctly, the hazard rating can prioritize pruning, removals, and other mitigation options.

Disadvantages: The time required to complete this form makes it difficult to assess large populations of trees in a municipal setting. However, the final numerical rating used for comparing the relative risk of trees plays a prominent role in the process and is a key focal point in the form. As such, the final hazard rating runs the risk of being

misused by commercial or consulting arborists who inspect individual trees in a residential setting (see *Quantitative vs. Qualitative Risk Assessment* sidebar).

Time Required to Complete: Approximately 20 minutes for a basic, 360-degree visual assessment, using a diameter tape and a digital hypsometer (Figure 2). Time required should decrease as the user gains greater familiarity with the process and form.



Figure 2. Urban trees can often impact multiple targets.
Credits: Gitta Hasing, UF/IFAS

Use in Arboriculture and Urban Forestry: The ISA Tree Hazard Evaluation Form is best suited for a commercial arborist or urban forester working with smaller tree populations (e.g., the trees present on a residential lot or a high-use municipal property). Given the time requirements and labor costs, its usefulness in assessing large populations of urban trees will be limited for most cities.

Form: To view the form, see the appendix or visit http://www.isa-arbor.com/education/resources/educ_TreeHazard-Form.pdf.

USDA Forest Service Community Tree Risk Evaluation Process and Form

Background: The USDA Community Tree Risk Evaluation Form was developed by Jill Pokorny et al. (2003) as part of the USDA Forest Service guide, *Urban Tree Risk Management: A Community Guide to Program Design and Implementation*. The form summarizes and leads the user through a seven-step process, which includes identifying

defective trees in target areas and determining the defects' severity, the consequences of failure, and the remedial action recommendations intended to reduce tree risk. Numeric tree risk ratings that are generated as part of this process can aid communities by prioritizing the application of corrective actions.

Advantages: The USDA Forest Service Community Tree Risk Evaluation Form is fairly simple to use, concise (10 trees per printed page), and relatively fast to complete compared with the other methods assessed. The risk rating and tree defect codes standardized data collection and made paper data entry faster. Similarly, using standard corrective action codes can prescribe remedial measures for evaluated trees at the time of assessment. While this nomenclature can be an initial hurdle, with time its use should further reduce the time needed to assess each tree.

In our assessment, the time required to complete the USDA Forest Service Community Tree Risk Evaluation Form took about 10 minutes or about half the time required for the other forms. This factor alone makes this form a compelling choice for urban foresters and others charged with managing large populations of trees.

Disadvantages: With the increased efficiency of the USDA Forest Service Community Tree Risk Evaluation Form comes some sacrificed detail, especially with regard to site history and condition (factors that are provided as background information, but are largely excluded from the actual ratings produced by either of the ISA forms). Site history can be crucial because certain parts of Florida are more prone to hurricanes and thunderstorms. Similarly, site development is important because rising water tables can injure tree roots and predispose them to catastrophic failure.

Additionally, while the standard codes facilitate the rapid recording of defects, the user has limited flexibility in describing unique problems encountered in the urban environments (e.g., utility conflicts, invasive species prone to specific modes of failure, or poor spacing). While including notes in the optional "Other Risks Factor Ratings" column alleviates some of this, data consistency may become an issue. Alternatively, one could add the list of defect codes to match typical conditions in a given region.

As with many tools developed in the northern United States, there are species-specific issues that can arise when using this form in the South. For example, in Florida, live oaks (*Quercus virginiana*) are commonly used in the urban environment. This species typically has branches with sharp

bends or twists that, given the examples outlined in the guide, should be described as Poor Tree Architecture (PTA) in the list of available defect codes. However, history and research show live oaks are one of the more resilient species in high-wind events. Conversely, in cases where a known defect leads to a greater species failure rate, the “Other Risk Factor Rating” (0 to 2 points) can be used to increase the risk rating. This also applies to cases of a tree’s location site that may increase its susceptibility; for example, a laurel oak (*Quercus laurifolia*) that is established in areas where water tables are rising.

While it’s not considered a disadvantage, the USDA Forest Service Form does not include a section for tree height measurements, and the stem diameter is the sole size measurement. Tree height data combined with DBH can yield important information on a tree’s vulnerability to the elements (i.e. for calculating wind loading). Also, the form’s layout does not include sufficient space to list all defect codes for trees with multiple issues; thus, increasing this area would improve the form’s functionality.

Time Required to Complete: Approximately 10 minutes for a basic, 360-degree visual assessment, using a diameter tape. Time required should decrease as the user gains greater familiarity with the process and form.

Use in Arboriculture and Urban Forestry: The USDA Forest Service Community Tree Risk Evaluation Form is well suited for commercial arborists or urban foresters working with key urban tree populations (e.g., downtown street trees or trees along evacuation routes).

Form: To view the form, see the appendix or visit http://www.na.fs.fed.us/spfo/pubs/uf/utrm/utrm3_sec8.pdf.

ISA Tree Risk Assessment Best Management Practice Form

Background: The International Society of Arboriculture (ISA) Basic Tree Risk Assessment Method was developed in conjunction with the ISA’s Tree Risk Assessment Best Management Practice (BMP) Manual. The assessment form and the BMP manual, which represent the work of E. Thomas Smiley, Nelda Matheny, and Sharon Lilly, draw on insights gained from risk analysis theory. The ISA Tree Risk Assessment Form is intended for trees receiving a basic (level 2) risk assessment is not designed to collect information from the advanced (level 3) or limited visual (level 1) tree risk assessments. The form serves as a replacement for the older ISA Tree Hazard Evaluation Form and is often

called the “TRAQ form,” given its use as part of ISA’s Tree Risk Assessment Qualification.

Sidebar 3.

Levels of Risk Assessment (as defined by the ANSI A300 Standards for Tree Care Operations)

- Level 1—Limited Visual: A limited visual risk assessment is sometimes referred to as a *walk by* or a *drive by* assessment. It is most common in urban forest scenarios where trees are abundant and resources for inspection are relatively scarce. A limited visual is not necessarily a complete 360-degree inspection and may be employed in situations where access is limited. Professionals conducting a limited visual assessment identify high-risk trees that are mitigation priorities.
- Level 2—Basic Visual: A basic visual assessment is a 360-degree inspection from the ground that is more thorough and typically includes height and diameter measurements. An assessor may use binoculars for crown inspections, a mallet for sounding hollows, a probe for inspecting cavities, and other common tools to conduct the inspection.
- Level 3—Advance Assessment: An advanced assessment can be an aerial assessment or an assessment that includes quantitative decay detection, health evaluation, wind load assessment, and static load assessment. Given the more advanced tools and methodologies employed, this service is often offered at a premium to the customer and typically reserved for heritage or high-value trees.

Advantages: A major innovation in risk assessment methodology is this form’s listing of multiple targets for a single tree. The earlier ISA Tree Hazard Evaluation Form and the USDA Forest Service Community Tree Form allow the user to identify multiple defects, but they are both lumped together with respect to one target rating. Even though the urban environment can make risk assessment a complex endeavor (Figure 3), this form provides a flexible, yet standardized means of coping with multi-faceted assessment scenarios.

Figure 3. The final numeric hazard rating plays a prominent role in the older ISA Tree Hazard Evaluation Form.
Credits: Gitta Hasing, UF/IFAS

Like the older ISA Tree Hazard Evaluation Form, this form is two pages and is designed to guide the user through a thorough, basic visual assessment. It also includes gridded spaces for the user to map targets and draw major trunk defects.

Finally, this new assessment method discards numerical ratings that were useful for urban foresters assessing tree populations but were often misunderstood and misused by

tree care practitioners. Instead, the overall risk ratings are derived from a sequence of decision matrices, which factor in target, likelihood of failure, and consequence of failure with regard to target.

Disadvantages: The level of detail required to complete this form significantly increases the time required to complete an assessment. While replacing numerical ratings makes sense methodologically, reducing the final, cumulative rating to four possible outcomes (low, moderate, high, and extreme) could potentially limit one's ability to prioritize tree mitigation efforts when dealing with tree populations. As such, this form's use may be limited in assessing sizeable tree populations that urban forestry managers administer, unless individual trees of local or historical significance are being evaluated.

Time Required to Complete: Approximately 20–25 minutes for a basic, 360-degree visual assessment, using a diameter tape and a digital hypsometer. Time required should decrease as the user gains greater familiarity with the process and form.

Use in Arboriculture and Urban Forestry: The ISA Tree Hazard Evaluation Form is best suited for a commercial arborist or urban forester working with individual trees or smaller tree populations.

Form: To view the form, see the appendix or visit http://www.isa-arbor.com/education/resources/BasicTreeRiskAssessmentForm_FirstEdition.pdf.

To view more detailed, step-by-step instructions for this form, see the *ISA Tree Risk Assessment Manual* or visit http://1-www2.champaign.isa-arbor.com/education/resources/ISABasicTreeRiskAssessmentForm_Instructions.pdf.

Conclusions

All of the methodologies above draw on the same core risk principal, and assess potential targets, the likelihood of failure, and the consequences of partial or whole tree failure. These key similarities serve as an indication that any method could suit arborists and urban foresters in the field. The additional site data collected, coding, or refinements to the final rating derivation process may make a particular method stand out to a certain user group, depending on the group's needs and resources.

The need for collecting risk assessment data efficiently is critical to both private arborists and urban forestry

programs. Care must be taken, however, to ensure the speed of data collection does not lead to a loss of accuracy and consistency, which are integral for an effective risk rating. It must also be kept in mind that these three risk assessment methods do not substitute for a more thorough level three assessment or an advanced assessment, where and when warranted. It is the arborist's or urban forester's responsibility to ensure that no unwarranted mitigation, including tree removal, occurs because of his or her assessments. All trees are unique, and no set of procedures can be standardized to successfully meet all clients' specific needs and their tree resources. The client, whether it's a private landowner or municipal government, relies on the arborist's or urban forester's training and experience to use the most appropriate risk assessment tools.

Finally, as technology advances and becomes less expensive, all or key parts of the forms can be programed with off-the-shelf data collection programs. This allows the user to use mobile devices, such as an iPad or Android/Windows-based tablet, to decrease data entry errors, to minimize the time required for data entry, and to increase organization and updating when the user returns to his or her office. Regardless of data collected through paper or electronic means, accurately assessed and collected tree risk information is critical to minimize injury and property damage when trees fail.

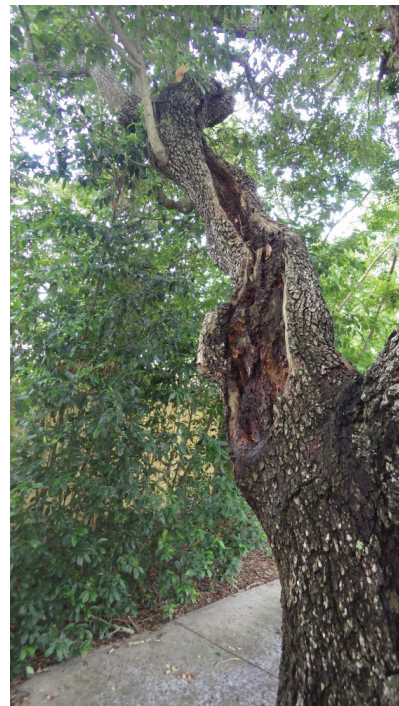


Figure 4. All three forms include qualitative ratings for size of affected part and probability of failure (given defect type). Credits: Gitta Hasing, UF/IFAS

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Table 1. Comparison of inspection meta-data (inspector, client, date, etc.), location, and site information collected from the ISA Tree Hazard Evaluation, the USDA Forest Service Community Tree Risk Evaluation, and the ISA Tree Risk Assessment BMP forms.

	ISA Tree Hazard Evaluation Form	USDA Forest Service Community Tree Risk Form	ISA Tree Risk Assessment BMP Form
Inspection Data			
• Client Information	X	X	X
• Inspector/Assessor	X	X	X
• Date/Time	X	X	X
• Address/Location	X	X	X
• Last Inspection Date	X		
• Time Frame ²			X
• Assessment Tools Used			X
Site Condition/History			
• Site Type/Zoning	X		
• Past Construction Activity	X		X
• Root Conflicts/Restrictions	X		X
• Soil Conditions/ Drainage	X		X
• Wind Conditions/Exposure	X		X
• Sign obstruction	X	X	
² Time frame in which assessments of likelihood of failure are made (e.g., the tree has an imminent likelihood of failure in the next five years).			

Table 2. Comparison of tree health and defect data collected from the ISA Tree Hazard Evaluation, the USDA Forest Service Community Tree Risk Evaluation, and the ISA Tree Risk Assessment BMP forms.

	ISA Tree Hazard Evaluation Form	USDA Forest Service Community Tree Risk Form	ISA Tree Risk Assessment BMP Form
Tree Health			
• Vigor Rating	X		X
• Foliar Condition	X		X
• Woundwood Development	X		X
• Pest/Disease	X		X
• Species Failure Profile ²		X ^y	X
Tree Structure			
• Height	X		X
• DBH	X	X	X
• Root/Root Crown Defect List	X	X	X
• Trunk Defect List	X	X	X
• Scaffold Branches/ Limbs Defect List	X	X	X
• Crown/Branches Defect List	X	X	X
² Observed weaknesses in a given species, variety, or cultivar, given typical and severe weather events			
^y Can be incorporated in the optional Other Risk Factors column (1–2 pts)			

Table 3. Comparison of initial ratings, which include Target Assessment, Likelihood of Failure, and Consequences of Failure, with Final Ratings in the ISA Tree Hazard Evaluation, USDA Forest Service Community Tree Risk Evaluation, and ISA Tree Risk Assessment BMP forms.

	ISA Tree Hazard Evaluation Form	USDA Forest Service Community Tree Risk Form	ISA Tree Risk Assessment BMP Form
Target Assessment			
• Form Section Title	<i>Target Rating</i>	<i>Probability of Target Impact</i>	<i>Likelihood of Impacting Target</i>
• Rating Type	Numeric (1–4 Points)	Numeric (1–3 Points)	Descriptive (4 Categories)
• Levels	(1) Occasional Use (2) Intermittent Use (3) Frequent Use (4) Constant Use	(1) Occasional Use (2) Intermediate Use (3) Frequent Use	Very Low Low Medium High
Likelihood of Failure			
• Form Section Title	<i>Failure Potential</i>	<i>Probability of Failure</i>	<i>Likelihood of Failure</i>
• Rating Type	Numeric (1–4 Points)	Numeric (1–4 Points)	Descriptive (4 Categories)
• Levels	(1) Low (2) Medium (3) High (4) Severe	(1) Low (2) Moderate (3) High (4) Extremely High	Improbable; Possible; Probable; Imminent
Consequences of Failure			
• Form Section Title	<i>Size of Part</i>	<i>Size of Defective Part(s)</i>	<i>Consequences of Failure</i>
• Rating Type	Numeric (1–4 Points)	Numeric (1–3 Points)	Descriptive (4 Categories)
• Levels (in inches)	(1) less than 6 (2) 6–18 (3) 18–30 (4) greater than 30	(1) less than 4 (2) 4–20 (3) greater than 20	Negligible Minor Significant Severe
Final Rating			
• Form Section	<i>Hazard Rating</i>	<i>Risk Rating</i>	<i>Risk Rating</i>
• Rating Type	Numeric (3–12 Points)	Numeric (3–10 points + 2 optional points)	Descriptive (4 categories)
• Derived from	Sum of “Failure Potential Rating,” “Size of Part,” and “Target Rating”	Sum of “Probability of Failure,” Size of Defective Part,” and “Probability of Target”	Series of guided decision matrices
• Levels	Number from 3–12	Number from 3–10 (12)	Low; Moderate; High; Extreme

MRTF Suggestions for the Town of Fort Myers Beach Vegetation Ordinances

1. Add Enforcement and Penalty sections to both Open Space, Buffering and Landscaping as well as Tree Protection divisions (similar to other FMB Town ordinances).
2. In Sec. 10-420 on Plant material standards the same list of invasive plants should be listed for removal as well as prohibited. Direct to the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) website <https://plants.ifas.ufl.edu/education/invasive-plants/> which has current resources on invasive plants including the Florida Exotic Pest Plant Councils (FLEPPC) list published for the state. (The rationale for not naming specific plants in the ordinance is due to the possible addition or delineation of various species.)
3. In Sec. 10 – 416 Landscaping standards, at the time of application for a permit for new construction, following the survey, irrigation and landscaping design should be submitted in a drawing to scale. (New construction will need to be clearly defined. Will it include new exterior decks, pools, etc.?)
4. Add the following terms and definitions to Article V on Tree Protection:
 - a) Crown – means the main mass of branching of a plant above the ground.
 - b) Drip line - means the outermost perimeter of the crown of a plant as projected vertically to the ground.
 - c) Girdling – a term also called ring-barking, is the complete removal of the bark around the entire circumference of a branch or tree. This results in the death of the area above the girdling. It is a prohibited method for removal of trees.
 - d) Hat-racking – a practice in which part or all of the top of a tree, known as the canopy, is removed, leaving vital branches exposed.
 - e) Land-clearing stage - means a stage in the construction process in which trees and/or vegetation are removed from the land, i.e., proposed right-of-way excavation and paving, drainage systems excavation; utility clearings and prebuilding construction projects.
 - f) Landscape area or green space - means an area or areas including beautification strips, consisting of those materials, such as, but not limited to trees, hedges, planted ground cover, sodded and grassed areas and planted floral installations, all of which must be composed of natural plantings only, as distinguished from artificially manufactured planting reproductions.
 - g) Mangrove - means rooted trees and seedlings of the following species, but only when having a coastal or estuarine association: Red Mangrove (*Rhizophora mangle* L.), White Mangrove (*Laguncularia racemosa* Gaertn.), Black Mangrove (*Avicennia germinans*), Buttonwood Mangrove (*Conocarpus erecta*).

- h) Overall height (OH)- means the height, in feet, of a tree measured from the top of the root ball/system to the top of the uppermost foliage branches.
 - i) Transplant - means the act of digging up a tree from one location and planting the same tree in another place.
 - j) Tree, historic - means a tree which has been found by a professional forester, horticulturist or other professional plantsman to be of notable historic interest to the city and/or county, because of its age, type, size or historic association and has been so designated by resolution of the city commission of the city.
 - k) Tree protection zone - means a circular zone around each protected tree defined as follows:
 - (1)If the drip line is less than six feet from the trunk of the tree, the zone shall be that area within a radius of six feet around the tree.(2)If the drip line is more than six feet from the trunk of the tree, but less than 20 feet, the zone shall be that area within a radius of the full drip line around the tree.(3)If the drip line is 20 feet or more from the trunk of the tree, the zone shall be that area within a radius of 20 feet around the tree.
 - l) Tree shade/canopy- means an evergreen or deciduous tree that can be maintained with a clear trunk of not less than six feet and with a spreading branching structure of at least 15 feet and opaque foliage habit such that a reasonably dense shade pattern is provided during peak daylight hours in the late spring, summer and early fall months of the year. For the purposes of this section, palms shall not be considered shade/canopy trees.
5. Add the following terms and definitions to Division 6- Open Space, Buffering and Landscaping
- a) Buffer zone – means a combination of trees, hedges, shrubs, and ground covers.
 - b) Florida-friendly landscape – means Florida-friendly landscape practices are encouraged in all zoning districts. Landscape areas utilizing Florida-friendly designs are those that comply with the nine principals as designated by the University of Florida Institute of Food and Agricultural Science (UF/IFAS).
 - c) Hand removal - means removal of vegetation by use of hand tools.
 - d) Hand tools - means handheld and hand-operated tools such as axe, saw, chain saw, wheelbarrow, etc., not including self-propelled wheeled or track vehicles.
 - e) Hedge - means a dense row of shrubs or bushes forming a boundary.
 - f) Impervious surfaces – means any hard surface that prevents or hinders the absorption of water into the soil.
 - g) Invasive exotic vegetation – means a plant species introduced to Florida, purposely or accidentally, from a natural range outside of Florida, which is able to proliferate and aggressively alter or displace indigenous biological communities, and identified on the Florida Exotic Pest Plant Council's List: <http://www.fleppc.org>
 - h) Land-clearing stage - means a stage in the construction process in which trees and/or vegetation are removed from the land, i.e., proposed right-of-way excavation and paving, drainage systems excavation; utility clearings and prebuilding construction projects.
 - i) Mechanical removal - means using mechanical equipment (not hand tools) to remove vegetation from parcels of land, e.g., bulldozers, root rakes, backhoes, or hydro axe, etc.

- j) Native plants – means those plant species whose natural range included Florida at the time of European contact (1500 A.D.) as identified on the Atlas of Vascular Plants Website, which is located as follows: Atlas of Vascular Plants, University of South Florida Institute for Systematic Botany: <http://www.plantatlas.usf.edu/default.asp>
- k) New development - means the initial development of a principal structure on a vacant parcel of land.
- l) Pervious surfaces – means organic groundcover such as vegetation or mulch, bark, pine needles and yard clippings. It also may include non-organic material such as stone, gravel or pavers.
- m) Pruning/trimming - means removal of the leaf surface of any individual plant.
- n) Redevelopment- means the development of a principal structure on a parcel of land that was previously developed with a principal structure.
- o) Removal - means killing/destroying, i.e., cutting down, girdling, poisoning or up-rooting.
- p) Shrub - means a low-growing perennial, woody or evergreen plant with persistent stem.

Additionally – revise the definition of Open Space Sec. 10-412 - to include the following verbiage on points number 3 and 4

(3) Archaeological and historical sites, including any area that contains historic, cultural or socially significant evidence of past human activity ranging from large mound and midden

complexes to a group of artifacts, the boundary and extent of which is determined by a survey by a professional archaeologist.

(4) Protected trees are of historic, cultural, botanical or socially significant interest

6. Give an intent and purpose for Division 6 on Open Space, Buffering and Landscaping.
 - (a) It is the legislative intent of this section to protect and preserve the appearance, character, value and safety of the town's area and nearby properties and, by so doing, promote the general welfare of the community.
 - (b) The purpose is to improve the appearance of properties within the city through the protection, installation, and maintenance of trees and landscaping for screening and aesthetic effects, and to recognize the importance of such trees and landscaping, in the enhancement of property values, the improvement of air quality, and their contribution to the cooling of our environment. It is also recognized that native landscape species are most compatible with the city's climate and soil conditions, require less irrigation and fertilization than do exotic species, and therefore help to conserve water and reduce the pollution in stormwater runoff, which in turn helps to maintain the water quality of Estero Bay and the Gulf of Mexico. Therefore, the use of native landscape species, and removal of invasive exotic trees and vegetation, is strongly encouraged. The planting of exotic trees and vegetation is to be generally prohibited.
 - (c) Topography, flooding characteristics, soil conditions, and the existence of wetlands or other areas containing protected species or habitats are among the factors which make some areas environmentally sensitive. In order to protect environmentally sensitive lands, it may be necessary to prohibit development, or limit the allowable density and intensity of development, in these areas. Protection of environmentally sensitive land promotes the well-being of the

residents of the city because those areas perform vital functions, such as providing habitat for fish, birds, mammals, and reptiles. Protection of environmentally sensitive land also results in the protection of community recreation opportunities, such as fishing, nature observation and photography, as well as the protection of aesthetics and property values.

7. In Sec. 10 – 416 Landscaping standards, under Building edge plantings, add that Florida Friendly Landscape shrubs and groundcover plants must be used (in #4).
8. In Sec. 10 – 416 Landscaping standards, the description of Internal landscaping should limit in (f) the amount of impervious material to a certain percentage (TBD).
9. In Sec. 10 – 416 Landscaping standards, the notes describing the Buffer Types in Table 10-9 should include Trees and palms shall have mature canopy maintained a minimum of 15' above the ROW to avoid vehicular conflicts. (*this will limit the tree selection for these areas)
10. In Article V on Tree Protection, Sec. 14 - 379 - consider placing this list of protected trees in an Appendix.
11. Throughout documents, add after director or designee.
12. Create a tree fund - The Town of FMB shall establish a tree fund, which shall be used exclusively for plant replacement and to provide necessary maintenance of damaged trees. Penalties, fines and tree replacement payments, as provided for in this article, shall be deposited into the tree fund. The public may donate money to the town's tree fund to assist the town in its beautification efforts.

Respectfully submitted to MRTF by a sub-committee consisting of the following members:
Rose Larkin – Marine Resource Task Force member
Donn Davids – Master Gardener Volunteer of Lee County
Anita Parmer – Estero Island Garden Club member

Synopsis of MRTF Suggestions for the Town of Fort Myers Beach Vegetation Ordinances

1. Add Enforcement and Penalty sections to both Open Space, Buffering and Landscaping as well as Tree Protection divisions of the current FMB ordinances.
2. Use the same list of invasive plants for removal as well as prohibited by directing to the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) website <https://plants.ifas.ufl.edu/education/invasive-plants/> which has current resources on invasive plants including the Florida Exotic Pest Plant Councils (FLEPPC) list published for the state.
3. At the time of application for a permit for new construction, following the survey, irrigation and landscaping design should be submitted in a drawing to scale. (New construction will need to be clearly defined. Will it include new exterior decks, pools, etc.?).
4. Recommend Florida Friendly Landscaping principles be used.
5. Add additional terms and definitions to both vegetation ordinances for clarification.
6. Provide an intent and purpose for the Open Space, Buffering and Landscaping ordinance. (This already exists for the Tree Protection ordinance.)
7. Ensure trees planted along the ROW shall have a mature canopy maintained at a minimum of 15 feet.
8. Throughout both vegetation ordinances, add or designee after director.
9. Establish a tree fund for the Town of FMB, which shall be used exclusively for plant replacement and to provide necessary maintenance of damaged trees.

The 2021 Florida Statutes

[Title XI](#)
COUNTY ORGANIZATION AND
INTERGOVERNMENTAL RELATIONS

[Chapter 163](#)
INTERGOVERNMENTAL
PROGRAMS

[View Entire
Chapter](#)

163.045 Tree pruning, trimming, or removal on residential property.—

(1) A local government may not require a notice, application, approval, permit, fee, or mitigation for the pruning, trimming, or removal of a tree on residential property if the property owner obtains documentation from an arborist certified by the International Society of Arboriculture or a Florida licensed landscape architect that the tree presents a danger to persons or property.

(2) A local government may not require a property owner to replant a tree that was pruned, trimmed, or removed in accordance with this section.

(3) This section does not apply to the exercise of specifically delegated authority for mangrove protection pursuant to ss. [403.9321-403.9333](#).

History.—s. 1, ch. 2019-155.

1. **Requested Motion:**

American Rescue Plan Act

Meeting Date: January 13, 2022

Why the action is necessary:

What the action accomplishes:

2. **Agenda:**

ITEMS FOR DISCUSSION

3. **Requirement/Purpose:**

5. **Background:**

Possible suggested uses:

- Water
- Stormwater
- Landscaping cisterns
- Solar/Renewable energy
- E-Vehicle Chargers
- Broadband
- Purchase environmentally sensitive land
- Customer Relationship Management (CRM) system
- Public Safety concerns
- Assist local NFP

Attachments:

1. ARPA Informational Document

Financial Impact:

6. **Alternative Action**

7. **Staff Recommendations:**

8. **Recommended Approval:**

Amy Baker, Town Clerk

Date: January 07,
2022

John R Herin Jr, Town Attorney

Date: January 07,
2022

Roger Hernstadt, Town
Manager

Date: January 07,
2022



AMERICAN RESCUE PLAN ACT

December, 2021

Overview

Signed into law on March 11, 2021, The American Rescue Plan Act of 2021 (“ARPA”) provides \$350 billion in additional funding for state and local governments. The State of Florida, through the Florida Division of Emergency Management, will disburse Coronavirus Local Fiscal Recovery Funds to non-entitlement units of local government (NEUs), which are local governments typically serving a population under 50,000. The Town of Fort Myers Beach will receive \$3,553,046.00 in direct funding assistance. The first half of the award has been received and the second half is expected in mid-2022.

State of Florida was allocated \$8,816,581,838.70. Below is a list of ARPA allocations in our area:

Lee County	\$149,675,549
City of Cape Coral	\$25,439,699
City of Fort Myers	\$15,759,486
Village of Estero	\$14,000,000
City of Bonita Springs	\$7,241,423
Town of Fort Myers Beach	\$3,553,046
Sanibel	\$3,111,000
Collier County	\$74,762,701
City of Naples	\$2,563,890
City of Marco Island	\$1,746,191
Charlotte County	\$36,693,553
City of Punta Gorda	\$2,445,907
Hendry County	\$8,162,281
Glades County	\$2,682,625

All NEU’s are required to report progress on the plan for using the ARPA funds in April, 2022. The funds do not need to be obligated until December 2024, and must be used by December, 2026. Eligible reimbursement for expenses can be from March, 2021 and forward.

Counties were required to submit their plans by August, 2021. To view the plans submitted:

[Workbook: RFA Prototype Batch2 \(tableau.com\)](#)

Uses

Expenses must be eligible under Section 603 of the American Rescue Plan Act, the Treasury Interim Final Rule and any subsequent Treasury Guidance. The final ruling on eligible expenses should be released in early 2022. The funds do not have to be obligated until December 31, 2024, and unexpended funds are not subject to recapture or return until December 31, 2026.

Eligible uses for ARPA funds are broken into four categories:

1. to respond to the public health emergency with respect to COVID-19 or its negative economic impacts, including assistance to households, small businesses, and nonprofits, or aid to impacted industries such as tourism, travel and hospitality;
2. to respond to workers performing essential work during the COVID-19 public health emergency by providing premium pay to eligible workers of the non-entitlement unit of local government that are performing such essential work, or by providing grants to eligible employers that have eligible workers who perform essential work;
3. for the provision of government services to the extent of the reduction in revenue of such non-entitlement unit of local government due to the COVID-19 public health emergency relative to revenues collected in the most recent full fiscal year of the non-entitlement unit of local government; or
4. to make necessary investments in water, sewer, or broadband infrastructure.

These four uses are split into 7 summary expenditure categories:

1. Public Health
2. Negative Economic Impacts
3. Services to Disproportionately Impacted Communities
4. Premium Pay
5. Infrastructure
6. Revenue Replacement
7. Administrative

All SLFRF award funds must be used in compliance with these requirements. The IRF details compliance responsibilities, and provides additional information on eligible and restricted uses. Each expenditure category has distinct reporting requirements.

Frequently Asked Questions: (from NLC.org & NACO.org)

Can recovery funds be used to fund lost revenue?

Yes, recipients can use Fund dollars to fund lost revenue. This is one of the eligible uses of ARPA funds. The definition of General Revenue draws on the Census definition of General Revenue of Own Sources (excluding utilities). The IRF gives recipients broad latitude to use funds to provide government services to the extent of the reduction in revenue. Government services can include but are not limited to, maintenance of infrastructure, modernization of cybersecurity, health services, school or educational services, and public safety services. When calculating lost revenue, recipients should sum across all revenue streams covered as general revenue, for administrative ease.

Would investments in improving outdoor spaces (e.g. parks) be an eligible use of funds as a response to the public health emergency and/or its negative economic impacts?

There are multiple ways that investments in improving outdoor spaces could qualify as eligible uses:

1. Services provided to Qualified Census Tracts (QCTs) such as investments in parks, public plazas, and other public outdoor recreation spaces that may be responsive to the needs of disproportionately impacted communities by promoting healthier living environments and outdoor recreation and socialization to mitigate the spread of COVID-19.
2. Recipients may provide assistance to small businesses in all communities. Assistance to small businesses could include support to enhance outdoor spaces for COVID-19 mitigation (e.g., restaurant patios) or to improve the built environment of the neighborhood (e.g., façade improvements).
3. Many governments saw significantly increased use of parks during the pandemic that resulted in damage or increased maintenance needs. The Interim Final Rule recognizes that “decrease[s to] a state or local government’s ability to effectively administer services” can constitute a negative economic impact of the pandemic.

Can funds be used to prevent and respond to crime and support public safety?

Below are some examples of how Fiscal Recovery Funds can be used to address public safety:

- In all communities, recipients may use resources to rehire police officers and other public servants to restore law enforcement and courts to their pre-pandemic levels. Additionally, Funds can be used for expenses to address COVID-related court backlogs, including hiring above pre-pandemic levels, as a response to the public health emergency. See FAQ 2.19.

- In communities where an increase in violence or increased difficulty in accessing or providing services to respond to or mitigate the effects of violence, is a result of the pandemic they may use funds to address that harm. See FAQ 4.8 for a full list of spending examples.
- Recognizing that the pandemic exacerbated mental health and substance use disorder needs in many communities, eligible public health services include mental health and other behavioral health services, which are a critical component of a holistic public safety approach.
- Recognizing the disproportionate impact of the pandemic on certain communities, a broader range of services are eligible in those communities than would otherwise be available in communities not experiencing a pandemic-related increase in crime or gun violence. These eligible uses aim to address the pandemic's exacerbation of public health and economic disparities and include services to address health and educational disparities, support neighborhoods and affordable housing, and promote healthy childhood environments. The Interim Final Rule provides a non-exhaustive list of eligible services in these categories.

Can recovery funds be used for stormwater projects and expenses?

Recipients may use Coronavirus State and Local Fiscal Recovery Funds to invest in necessary improvements to their water and sewer infrastructures, including projects that address the impacts of climate change. Recipients may use this funding to invest in an array of drinking water infrastructure projects, such as building or upgrading facilities and transmission, distribution, and storage systems, including the replacement of lead service lines.

Recipients may also use this funding to invest in wastewater infrastructure projects, including constructing publicly-owned treatment infrastructure, managing and treating stormwater or subsurface drainage water, facilitating water reuse, and securing publicly-owned treatment works.

To help jurisdictions expedite their execution of these essential investments, Treasury's Interim Final Rule aligns types of eligible projects with the wide range of projects that can be supported by the Environmental Protection Agency's Clean Water State Revolving Fund and Drinking Water State Revolving Fund. Recipients retain substantial flexibility to identify those water and sewer infrastructure investments that are of the highest priority for their own communities.

Can my city decrease taxes after receiving these funds?

The rule that would prohibit tax decreases is a restriction only on states. The local government section of the bill contains no prohibition on lowering taxes.

What infrastructure projects can funds be used on?

General infrastructure spending is not covered as an eligible use outside of water, sewer, and broadband investments or above the amount allocated under the revenue loss provision.

Recipients may use funds for maintenance of infrastructure or pay-go spending for building of new infrastructure under general services, but it is capped at the amount of revenue lost due to the public health emergency. For more information on acceptable infrastructure projects, recipients should refer to eligible uses as outlined in the IRF and the Compliance and Reporting Guidance.

Can recovery funds be used to cover administrative costs?

Yes, funds may be used to pay administrative costs, including payment to consultants and/or payroll to assist with the implementation of ARPA projects. This includes costs of consultants to ensure effective project management, as well as legal and regulatory compliance. Funds may be used to increase staff capacity in order to stabilize government operations.

Can recovery funds be used to relieve other payroll costs?

Under the Interim Final Rule, recipients may use funds for premium pay for essential public safety, public health, health care, human services, and similar employees for their time responding to the COVID-19 public health emergency. This premium pay is in addition to a worker's regular rate of wages, and is not a substitute for normal earnings. Employees who worked remotely from a residence are not eligible for premium pay. This pay may be applied retrospectively for work performed since the beginning of the COVID-19 public health emergency. Cities can transfer these funds third-party employers with eligible workers performing essential work.

Workers that are eligible for premium pay include:

- Any work performed by an employee of the state, local or tribal government
- Staff at nursing homes, hospitals, and home care settings
- Workers at farms, food production facilities, grocery stores, and restaurants
- Janitors and sanitation workers
- Truck drivers, transit staff and warehouse workers
- Public health and safety staff
- Childcare workers, educators and other school staff
- Social service and human services staff

Can recovery funds be used for pensions?

The statute provides that recipients may not use Fiscal Recovery Funds for “deposit into any pension fund.” For the reasons discussed below, Treasury interprets “deposit” in this context to refer to an extraordinary payment into a pension fund for the purpose of reducing an

accrued, unfunded liability. More specifically, the interim final rule does not permit this assistance to be used to make a payment into a pension fund if both:

1. the payment reduces a liability incurred prior to the start of the COVID-19 public health emergency, and
2. the payment occurs outside the recipient's regular timing for making such payments.

Under this interpretation, a "deposit" is distinct from a "payroll contribution," which occurs when employers make payments into pension funds on regular intervals, with contribution amounts based on a pre-determined percentage of employees' wages and salaries.

Can cities transfer their allotted funds to counties?

The statute provides four categories in which a city can transfer funds.

1. A private nonprofit organization
2. A public benefit corporation involved in the transportation of passengers or cargo
3. A special-purpose unit of State or local government
4. A state government

For the full list of FAQ's from each organization see the following websites:

[American Rescue Plan Act: Coronavirus State & Local Fiscal Recovery Fund FAQs \(naco.org\)](https://www.naco.org/american-rescue-plan-act/coronavirus-state-local-fiscal-recovery-fund-faqs)

[ARPA Local Relief Frequently Asked Questions - National League of Cities \(nlc.org\)](https://www.nlc.org/arpa-local-relief-frequently-asked-questions)

AGENDA MANAGEMENT

289	Ordinance 22-01: 2nd Reading, Text Amendment Minimum Setbacks	PW	added 11.09.2021	01.24.2022
292	Ordinance 22-02: 1st Reading, Repeal Sec. 2-50 (Personnel Manual)	Clerk	added 12.01.2021	01.24.2022
290	Flock Safety Agreement	TC	added 12.08.2021	01.24.2022
307	Purchase of Marina Pumps	Utilities	added 01.04.2022	01.24.2022
283	Playground Equipment BORC/Beach School	PW	added 11.09.2021	01.24.2022
303	Replacement of Utilities Transit van	Utilities	added 01.04.2022	01.24.2022
304	Special Exception: SEZ20210115 - 2301/2307 Estero Blvd	PL&Z	added 01.04.2022	01.24.2022
305	Variance: VAR20210102 -5503 Estero Blvd	PL&Z	added 01.04.2022	01.24.2022
306	Variance: VAR20210012 -50 Aberdeen Ave	PL&Z	added 01.04.2022	01.24.2022
292	Ordinance 22-02: 2nd Reading, Repeal Sec. 2-50 (Personnel Manual)	Clerk	added 12.01.2021	02.07.2022
282	Discussion (Ord) Registration of rental co's requiring lights/bells on bicycles	TC	added 11.04.2021	02.10.2022 M&P
296	Updated Draft - Water Sports/Chair Rental Ordinance	Attorney	added 12.08.2021	02.10.2022 M&P
280	Seasonal use of Voice (LCSO)	TC	added 11.04.2021	02.10.2022 M&P
299	Motorized Single Wheel Vehicles (BV)	TC	added 12.08.2021	02.10.2022 M&P
300	Prop Guards on Rental Boats (BV)	TC	added 12.08.2021	02.10.2022 M&P
302	FMB Citizen's Academy graduation	Clerk	added 01.05.2022	03.07.2022
301	Local Mitigation Strategy adoption	PW	added 12.10.2021	April TC mtg
226	Resolution: Renewal of Multi-jurisdictional PPI	P&Z	added 08.23.2021	TBD TC mtg
294	Greenwire Agreement	TC	added 12.08.2021	TBD TC mtg
254	Committee Reorganizations (BV)	TC	added 10.07.2021	TBD M&P
205	Memorial Naming Options (Dan Hughes)	TC	added 06.07.2021	TBD M&P
267	Mooring Field Upland Services site discussion	PW	added 09.28.2021	TBD M&P
291	Discussion: CB Zoning District vision	TC	added 11.15.2021	TBD M&P

County Estero Blvd. Update at the M&P each month

** Town Manager evaluation (Feb 1 - May 31)*

*** Town Attorney evaluation (September)*