

Florida-Friendly Landscaping™ Guidelines for Community Associations: Considerations for Selecting a Landscape Contractor and Writing an Effective Landscaping Contract¹

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Knowledgeable landscape contractors are essential to successfully maintaining Florida-Friendly Landscaping™ (FFL) on community association properties. The University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Extension Florida-Friendly Landscaping™ Program, working with UF/IFAS Extension faculty, industry professionals, community associations, and the UF Levin College of Law, has developed the following guidelines and model language for a landscaping contract. The fundamental logic guiding this process has been to create a vehicle that both improves the quality of Florida's environment and articulates the visions and concerns of individual communities.

Florida-Friendly Landscaping™ protects Florida's unique natural resources by conserving water, reducing waste and pollution, creating wildlife habitat, and preventing erosion.

Any landscape can be Florida-Friendly if it is designed and cared for according to the nine Florida-Friendly Landscaping™ principles. The principles include: (1) planting the right plant in the right place, (2) efficient watering, (3) appropriate fertilization, (4) mulching, (5) attraction of wildlife, (6) responsible management of yard pests, (7) recycling yard waste, (8) reduction of stormwater runoff, and (9) waterfront protection. Additional components include practices such as landscape planning and design, soil analysis, the appropriate use of solid waste compost, minimizing the use of irrigation, and proper maintenance. In 2009, the Florida Legislature found "that the use of Florida-friendly landscaping and other water use and pollution prevention measures to conserve or protect the state's water resources serves a compelling public interest and that the participation of homeowners' associations and local governments

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All chemicals should be used in accordance with directions on the manufacturer's label. Use herbicides and pesticides safely. Read and follow directions on the manufacturer's label.

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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.

is essential to the state's efforts in water conservation and water quality protection and restoration". The Florida-Friendly Landscaping™ Program provides information and guidance on turfgrass and landscape management practices to minimize nonpoint source pollution to conserve and protect Florida's water resources.

Follow the link below to download a model Florida-Friendly Landscaping™ Management Contract that can be modified to reflect site-specific conditions and negotiated terms. https://fll.ifas.ufl.edu/materials/Florida_Friendly_Landscaping_Maintenance_Contract_2018.pdf.

For additional guidance, please contact your county UF/IFAS Extension office.

Benefits of the Contracted Service

Landscape maintenance is often a major expense for communities because the appearance of yards and common areas is aesthetically important to the residents, can enhance the community's reputation for being well-maintained, and protects property values. Healthier, longer-living plants provide valuable services like air and water filtration, carbon sequestration, temperature reduction, and aesthetic enhancement. By carefully contracting these services, property owners can save money, improve the community's appearance, and extend the life of landscape plants. The benefits of contracting landscape maintenance services include the following:

- A properly trained and licensed landscape maintenance contractor has specialized expertise in managing landscapes for plant health and longevity. The contractor can remedy landscape problems and outline a detailed landscape maintenance program.
- Landscape maintenance company personnel have expertise in horticulture, including evaluation and treatment of plant problems (insects, diseases, weeds, nutritional imbalances); proper chemical usage; mowing, pruning and edging methods; and other landscape maintenance practices. Sometimes, a contractor will have specially trained staff members, such as a certified arborist or licensed pest control operator, who can be even more effective, but also more expensive. However, the additional cost for this level of contracted maintenance can be less expensive than replacing plants damaged by diseases, insects, or improper maintenance. Additionally, a certified arborist can identify hazardous trees that are a liability to the community.

- Hiring a contractor versus in-house landscape maintenance eliminates capital outlay for equipment and associated maintenance. Well-maintained mowers, edging equipment, spreaders, sprayers, and specialized hand tools are needed to properly maintain trees, planted beds, and turf. A contractor is experienced in using and servicing landscape maintenance equipment.

Environmental Concerns

Residential development and urbanization are the most rapid forms of land use change in Florida. With this change, constraints on natural resources (e.g., water availability), wildlife conservation, and the preservation of native vegetation in these habitats are becoming more important (<http://1000friendsofflorida.org/florida2070/wp-content/uploads/2017/08/FOF-1080-Newsletter-Spring-2017-v12-web.pdf>). Protecting the environment in Florida communities has become a major issue because of concerns about human and environmental health.

If applied incorrectly, surface and groundwater can be polluted by run-off and leaching of nitrate and phosphorus fertilizers (<http://edis.ifas.ufl.edu/ep236>). Heavy summer rains commonplace in Florida can exacerbate this risk. The best way to reduce this source of pollution is to apply fertilizers correctly and when necessary (<http://edis.ifas.ufl.edu/lh014>). Over-fertilization with nitrogen has also been associated with increased insect and disease problems in the landscape. Thus, landscape contractor employees hired to apply fertilizer must be trained in Florida Green Industries Best Management Practices (GI-BMPs), have a GI-BMP certification, and hold a Limited Urban Commercial Fertilizer Applicator Certification License from the Florida Department of Agriculture and Consumer Services (see Helpful Resources). Companies hired to fertilize landscapes must comply with local and state ordinances that prohibit nitrogen fertilizer applications during particular months (<https://fll.ifas.ufl.edu/fertilizer>), and ensure that fertilizer applications are in compliance with local regulations to avoid a citation, fine, or risk of environmental harm.

Integrated Pest Management (IPM) should be practiced so that the landscape is treated as an ecosystem and is more sustainably managed (<http://edis.ifas.ufl.edu/in109>). Rather than routinely scheduling pesticide applications, IPM is based on systematically inspecting the landscape, identifying infestations, and controlling pests before they become damaging. It is important that turfgrass and other vegetation be inspected during each visit by the landscape contractor for indications of pest problems. Pesticides should only be used when necessary, and the decision to

apply a pesticide must be supported by records of accurately identified pests, pest occurrence, and abundance. Pesticide applications should be targeted to the infested and/or damaged areas, not to the entire landscape. Low-impact (e.g., horticultural oils, insecticidal soaps, naturally-derived pesticides) or reduced-risk products (<https://www.epa.gov/pesticide-registration/reduced-risk-and-organophosphate-alternative-decisions-conventional>) should be applied before using more toxic chemicals, and treatments should be evaluated to determine their effectiveness before making an additional application.

The contractor is legally responsible for any environmental cleanup resulting from chemical or fuel spills that occur while conducting their work. Contract specifications should require the contractor to select a designated area for all equipment refueling and servicing and the mixing or handling of chemicals. Contractors are also required to clean their equipment, including sprayers, and properly dispose of the waste. It is critical that the contract indicate how fuels, oil, fertilizers, and all normal landscape chemicals are contained, if stored in the community.

Selecting a Landscape Maintenance Contractor

1. Get several bids

It is important to get at least three bids to compare prices, services offered, and terms of the contract. The lowest price is not necessarily the best deal. You want to pay for quality service that protects your investment and the environment. There are several ways to locate good landscape maintenance companies. For recommendations, contact the Florida Nursery, Growers and Landscape Association (<http://www.fngla.org/>), local landscape supply stores, or other community associations.

When evaluating a contractor for hire, an association representative should conduct a detailed, on-site inspection with each prospective contractor. This allows both the contractor and the representative to observe specific areas of concern in the existing landscape. The association representative should document items noted during this inspection.

2. Develop a checklist

Before considering a landscape maintenance company's bid, conduct a credit check, obtain a rating from the Better Business Bureau, and contact local landscape supply stores to evaluate the company's payment history. Prepare a checklist for each bidding contractor to determine the most

acceptable quote. Base the final decision on the results of the checklist.

3. Interview

It is important to conduct a due diligence assessment interview with the owner or designed representative of a company prior to hiring them to determine their history, quality, and the diversity of services they provide (for example, how long they have been in business, what services they provide, the size of the company, number of employees, how many contracts they currently have, and the ratio of supervisors to crew members and what other properties they currently maintain).

It is also important to determine if the company has adopted Green Industry Best Management Practices (GI-BMP) and if the employees are certified to implement those practices. Companies that interact with University Extension and participate in green industry events are indicative of more progressive and modern industry practices.

4. Check references

References should be asked to rate the overall performance of the landscape contractor, specific areas of performance (bed maintenance, turf management, and woody plant pruning), and adherence to schedules. Other questions to ask include the length of time the contract has been active, historical data related to any price increases, and response time if there were complaints.

5. Verify that the business is licensed and insured

Verify the contractor has general liability insurance, broad form contractual liability insurance, automobile liability insurance, and workers' compensation insurance to meet all state and local license and insurance requirements for the contract work.

Florida law requires licenses for specific services, such as applying fertilizers or pesticides. Check with the company to be sure that the pesticide or fertilizer applicators will be properly licensed. Below is a list of licenses to be aware of while choosing a lawn service:

- Fertilization: Limited Urban Commercial Fertilizer Applicator Certification
- Pesticide application in **shrub** or **flower** beds: Commercial Landscape Maintenance Applicator Certification
- Weed and Pest control in **turf** and **shrubs**: Pest Control Operator Certification

- **Tree pruning or removal:** International Society of Arboriculture Certified Arborist (not required by law, but provides assurance that the job will be done correctly and safely)

6. Ask if the company belongs to any professional association

Associations, such as the Florida Nursery, Growers and Landscape Association (FNGLA), the Landscape Maintenance Association (LMA), the Florida Irrigation Society (FIS), or the International Society for Arboriculture (ISA), have records indicating membership and their certifications.

Companies with professional certifications typically have a higher technical skill level and remain current on laws, regulations, environmental concerns, and technical advancements. Other trade associations, such as the Florida Turfgrass Association (FTGA), the Florida Pest Management Association (FPMA), or the Tree Care Industry Association (TCIA), are also good resources for leads on qualified companies.

7. Have a legal review

Before accepting a contract, the association's attorney should review its legal structure and wording, because requirements such as cancellation and termination laws, contract term, severability, and other matters differ from state to state.

Contractor Direction, Reporting, and Evaluation

Effective and active communication between the community, residents, and landscape maintenance professionals is critical for effective integrated pest management and plant health care. The community association shall state in the contract that one person will be designated to maintain active communication with the landscape contractor. This establishes a communication link, as problems arise during the contract term.

The contract language should describe a structure and timeframe for providing regular reports to the community association. The content of the contractor's written report should include an update of maintenance activities accomplished since the last report; planned activities for the immediate future; a description of deviations from the specifications and schedules; unusual circumstances or problems encountered; and recommendations for

improvements in the specifications, schedules, or maintenance of the landscape.

Language in the contract that addresses termination for failure of the landscape contractor due to unsatisfactory performance should be written or at least reviewed by the community association's attorney. The contract shall also state the amount of time allowed for the contractor to remedy serious performance deficiencies.

Model Florida-Friendly Landscaping™ Management Contract Specifications (Model Language)

The following section is from the Model Florida-Friendly Landscaping™ Management Contract (https://fl.ifas.ufl.edu/materials/Florida_Friendly_Landscaping_Maintenance_Contract_2018.pdf), Appendix B—Regularly Scheduled Work.

This contract is intended to be a model landscape-maintenance contract for use by homeowners' associations and landscape contractors who intend to employ Florida-Friendly Landscaping™ Best Management Practices.

This model contract does not convey legal advice, does not purport to include all of the provisions that may be required to create a binding agreement to the satisfaction of the parties in any given circumstance, and does not create an attorney-client relationship between the user and the University of Florida. This model contract is based upon the laws of Florida and the United States at the time it was posted. These laws may change from time to time. In addition, local government law may apply. Users of this model contract should seek advice from an attorney before using this contract.

This model contract can be modified by anyone who uses it to reflect site-specific conditions and negotiated terms. Many environmental and societal factors can affect the survival of landscape plants installed at any given time and place. **Implementation of BMPs described in this contract do not create any site-specific assurance that landscape plants will perform to the satisfaction of the parties.** Before installing a Florida-Friendly landscape, the parties may wish to consult with a professional.

Regularly Scheduled Work

Mowing, Edging, and Trimming

- A. Contractor shall maintain lawns based on the maintenance requirements of the specific turfgrass species.
- B. Contractor shall mow in a manner consistent with landscape maintenance industry standards that ensures smooth surface appearance without scalping or leaving any uncut grass.
- C. Contractor shall not cut more than one-third ($\frac{1}{3}$) of the leaf blade length per mowing event. Measure mower heights with mowers on a flat, paved surface. Mower blades must be kept sharp to provide a high-quality cut and reduce negative effects on turfgrass health. Contractor shall mow in a different direction each time the grass is cut.
- D. Contractor shall complete all edging at the time of mowing.
- E. Contractor shall maintain grass at the recommended height (Appendix D).
- F. Contractor shall report any detection of turfgrass heat stress, pests, or irrigation malfunctions.
- G. Contractor shall leave no readily visible clumps of clippings on the grass surface after mowing. Contractor shall disperse large clumps of clippings into the turf.
- H. Prior to mowing on individual properties, Contractor shall pick up and dispose of paper and other debris from the grass and around storm drains.
- I. Using string trimmers or blade edgers, as appropriate, Contractor shall edge tree rings, plant beds, buildings, sidewalks, fences, driveways, parking areas, and other hard surfaces bordered by grass. Contractor shall use string trimmers to trim turfgrass adjacent to any water bodies and around in-ground irrigation control boxes to maintain visibility and access. Contractor shall avoid damaging plants with string trimmers.
- J. Contractor shall remove grass clippings and debris on the same day that mowing and trimming is done. Contractor shall remove all grass clippings and debris from sidewalks, streets, drives, gutters, and curbs or surfaces, including those near a stormwater inlet or catch basin. The Contractor shall not allow grass clippings or debris to enter into any inlet, catch basin, or body of water.

Contractor shall deposit grass clippings into the planted landscape.

- K. During extended rainy or dry periods, Contractor shall mow as conditions dictate. If weather conditions prevent mowing or edging on the scheduled day, then Contractor shall perform the mowing and edging the following day. If the wet or dry weather persists, Contractor shall coordinate with Owner to set up an alternate schedule. Contractor shall not mow wet or severely drought-stressed turf.

Mulching

- A. Contractor shall maintain mulch at a depth of at least two inches after settling. When additional mulch is necessary, Contractor should present a separate bid for approval.
- B. The use of mulches made from sustainable materials, such as recycled hardwood mulch, Melaleuca trees, Eucalyptus, pine needles, and pine bark, is recommended. Contractor shall not use Grade B cypress mulches made from whole-tree wood.
- C. Contractor shall apply mulch to bedded areas and around trees and palms. Contractor shall leave a 2-inch space between the trunks of plants and the mulch. Contractors shall mulch within at least a 12- to 18-inch radius from the trunk for any size of tree.
- D. Contractor shall apply new mulch in a level profile consistent with pre-existing grades so that the final uniform mulch depth comprised of both existing and new layers will be a minimum of 2 inches, but will not exceed 3 inches. Contractor shall not apply new mulch material against trunks or plant stems but will taper down to the soil at those locations. In all locations where the existing mulch bed is in contact with a paved surface (i.e., sidewalks, roadway edges, or curbing and driveways), Contractor shall lightly trench the mulch-hard surface bed line to better contain the existing and applied mulch.
- E. Contractor shall rake or sweep mulch off paved areas and turfgrass into beds as the mulch application progresses. Contractor shall rake smooth any mounded areas so that depth does not exceed 3 inches.
- F. If mulch is installed improperly, Contractor shall correct any problems at no additional charge to Owner.

Pruning

- A. When pruning, Contractor shall use current techniques and standards approved by UF/IFAS and the International Society of Arboriculture. Contractor shall prune selectively to improve structure and health and to enhance fruiting, flowering, or appearance.
- B. When performing corrective pruning, Contractor shall maintain the structural integrity, natural shape, and characteristics of the species.
- C. Contractor shall disinfect pruning tools prior to and after each property and plant to prevent disease transmission.

SHRUBS

- a. Contractor shall lightly prune shrubs based on the need of each species. Certain flowering shrubs have specific times when they should or should not be pruned. Generally, Contractor shall prune shrubs with hand pruners as needed to provide shape, fullness, and flowering. Contractor shall not prune spring-flowering shrubs until after the bloom period.
- b. Contractor shall maintain shrubs to avoid contact with structures and provide clearance of 12-18 inches.
- c. Contractor may prune formal hedges with power shears. Contractor shall ensure that the top of the hedge is maintained at a width narrower than the bottom to allow sunlight to reach lower foliage.
- d. Contractor shall remove dead or broken branches when noted. Selective removal of small sections of branches as a form of insect pest control is also acceptable, providing the natural shape of the shrub is maintained. Contractor shall not prune during or immediately after growth flushes.

TREES

- a. Contractor shall insure that the central leader (trunk) of all trees is maintained (no topping/heading, hat-racking, or shearing). Contractor shall remove interfering or crossed limbs. Contractor shall remove all branches using “collar cuts.” Contractor shall follow UF/IFAS pruning recommendations, which are set forth at the following website: <http://gardeningsolutions.ifas.ufl.edu/care/pruning/pruning-and-maintaining-trees.html>.

- b. Contractor shall remove sucker growth at the base of trees with pruners and shall not use herbicides for that purpose.
- c. Contractor shall perform aesthetic pruning by removing dead and broken branches as often as necessary so that trees appear neat and remain safe at all times.
- d. Contractor shall maintain branches and limbs a minimum of two feet away from all buildings, especially roofs. Contractor shall maintain trees near sidewalks and parking lots to provide clearance for pedestrians and vehicles. Contractor shall follow FDOT recommendations set forth at the following website: http://www.fdot.gov/maintenance/RDW/Guide_LandscapeandTreeMaintenance.pdf
- e. Contractor shall monitor trees that are staked. Contractor shall loosen or remove support, when appropriate, to prevent girdling of the trunk.
- f. Contractor shall inform Owner or Association of trees that are diseased or dying that should be considered for removal.

PALMS

- a. Contractor shall prune palms as per current UF/IFAS recommendations (<http://edis.ifas.ufl.edu/ep443>).
- b. Contractor shall not remove green leaves and shall prune only dead or browning leaves. Contractor shall remove all palm flower and fruit clusters by handsaw without damaging live tissue to prevent seedlings.
- c. Contractor shall make reasonable efforts to avoid removing leaves that are growing horizontally or upward (i.e., retain all leaves within a “9-3” frame). Contractor shall cut leaves close to the petiole base but shall not damage living trunk tissue.
- d. Contractor shall assess discoloration of lower palm leaves for nutritional deficiencies.
- e. Contractor shall not throw palm leaves or any other pruned material into any lake or other water body.

GROUNDCOVERS

- a. Groundcovers require minimal pruning. Contractor shall confine and maintain groundcovers within plant beds. Contractor shall not allow groundcover to grow over paved areas.

- b. After all pruning operations, Contractor shall make all reasonable efforts to remove all cuttings and debris relative to ground-cover type and ensure an aesthetically clean appearance.

Fertilization

- A. Contractor shall follow current UF/IFAS guidelines for turfgrass fertilization. Contractor shall ensure that all of Contractor's employees who specify, handle, or apply fertilizer have a valid Florida Department of Agriculture and Consumer Services Limited Urban Commercial Fertilizer Applicator Certification (FDACS LUFAC). Contractor shall ensure that fertilization scheduling does not exceed the fertilizer label rate prescribed and complies with state and local ordinances. It is important to note that local fertilizer regulations may prohibit the use of nitrogen fertilizers during the summer months. Be aware of local ordinances to avoid fines or citations (<https://fl.ifas.ufl.edu/fertilizer>).
- B. Contractor shall notify Owner of any plant or turfgrass nutrient deficiency symptoms and what measures are recommended for correction.
- C. Contractor shall treat deficiencies of specific nutrients with applications of the lacking nutrient in accordance with UF/IFAS recommendations until deficiencies are corrected. The fertilizer application rate and number of applications depends on the type of plant material. Contractor shall apply the minimal amount of fertilizer needed.
- D. Contractor shall adjust fertilizer rates according to health, maturity, and desired growth patterns.
- E. During the establishment phase for shrubs, trees, and ground covers, Contractor shall fertilize landscape plants with a slow-release fertilizer as per UF/IFAS recommendations.

APPLICATION

- a. Contractor shall use deflector shields on all application equipment to minimize inadvertent applications of fertilizer to non-plant areas. Contractor shall blow, sweep, or wash back into the landscape, any fertilizer deposited on paved or impervious surfaces.
- b. Contractor shall use and enforce the "Ring of Responsibility" (discussed in Appendix A) around or along the shoreline of canals, lakes, ponds, or waterways to reduce

risk of fertilizers and other lawn chemicals coming into direct contact with surface waters.

- c. Contractor shall apply fertilizer only when plants are actively growing.
- d. Contractor shall clean up spilled fertilizer materials immediately as per UF/IFAS recommendations. Contractor may apply collected material as a fertilizer.
- e. Contractor shall store nitrate-based fertilizers separately from solvents, fuels, and pesticides, because nitrate fertilizers are oxidants and can accelerate a fire. Owner shall work with Contractor to secure fertilizers and other chemicals stored at the Worksite.
- f. After fertilizing (unless water restrictions are in place or a rain event is predicted), Contractor shall irrigate with at least a ¼ inch of water following fertilization to avoid the loss of nitrogen and increase uptake efficiency. If water restrictions apply, Contractor may irrigate as permitted but no more than ½ inch following fertilization.

TURF FERTILIZATION

- a. Contractor shall use only fertilizers for urban turf that are formulated and have application instructions in accordance with requirements and directions provided by Rule 5E-1.003, Florida Administrative Code, Labeling Requirements for Urban Turf Fertilizers.
- b. Contractor shall not exceed the annual nitrogen recommendations in the Fertilizer Guidelines for Established Turfgrass Lawns in the climatic regions of Florida as provided on the label.
- c. Contractor shall obtain a soil analysis before planting. Soil samples shall be analyzed for pH, lime requirement, and available plant nutrients (P, K, Ca, and Mg). A soil pH test will indicate whether pH adjustment is necessary. For more information on soil sampling and testing, go to (<http://soilslab.ifas.ufl.edu/ESTL%20Home.asp>).
- d. Contractor shall adjust fertilizer rates to achieve healthy, mature, desirable growth.
- e. Contractor shall follow UF/IFAS evidence-based recommendations for turfgrass fertilization practices based on turfgrass species, soil properties, time of year, and other factors (<https://edis.ifas.ufl.edu/pdf/LH/LH01400.pdf>, http://edis.ifas.ufl.edu/topic_lawn_fertilization).

PLANT BEDS, TREES, SHRUBS, PALMS, FLOWERS, GROUND COVERS

- a. If landscape plants exhibit nutrient deficiency symptoms, they may not be suited to the planting site due to soil pH, drainage, salinity, limited soil volume, water quality, or mineral content of the soil. Contractor shall discuss with Owner replacing such plants with others better-adapted to the site's conditions. Contractor shall follow current UF/IFAS fertilization recommendations for landscape plants.
- b. Contractor shall broadcast fertilizer uniformly over the desired areas of the landscape. Contractor shall consider root location, fertilization objectives, and plant species when applying fertilizer. In areas where tree or shrub fertilization zones overlap with lawn fertilization zones, Contractor shall fertilize one or the other of the plant types, but not both.
- c. Contractor shall start with the lowest recommended rate and slowly increase the amount up to the maximum recommendation as evidenced by the plant's response.

PALM FERTILIZATION

- a. Palms have different nutritional requirements from other landscape plants. They suffer quickly and conspicuously from inadequate mineral nutrition, whether due to insufficient or incorrect fertilization. Contractor shall follow current UF/IFAS fertilization recommendations for palms and palm deficiencies, see http://edis.ifas.ufl.edu/topic_palm_nutrition.
- b. Contractor shall fertilize palms with a granular slow-release fertilizer three to four times per year. An acceptable formulation is 8-0-12-4 (N, P, K, Mg plus micro-elements). Mature palms require five pounds of 8-0-12-4 fertilizer per application. For palms under ten feet tall, two pounds of 8-0-12-4 per application will be adequate.

Management of Pests in the Landscape

- A. Contractor shall use pesticide applications in accordance with the rules and regulations governing use of pesticides in Florida. Contractor shall follow all provisions of Florida Statute 482. Contractor shall use Integrated Pest Management (I.P.M.) principles and methods (<http://edis.ifas.ufl.edu/in109>). Contractor shall intervene with chemical pest control only when the pest is causing or is expected to cause more damage than can be reasonably and economically tolerated. Contractor shall implement a control strategy that reduces the pest numbers to an

acceptable level while minimizing risks to non-targeted organisms.

- B. The Contractor shall post appropriate application signs following each treatment in line with Florida Department of Agriculture and Consumer Service regulations. Per Florida statutes, Contractor shall arrange for pesticide-sensitive persons living in the Community to be notified before treatment.
- C. Contractor shall keep records of pest problems identified, location, and control treatment applied. Contractor shall record (in the records) whether the control measures reduced or prevented pest damage, were economical, and minimized risks. Contractor shall provide a copy of the records to Owner. Contractor shall refer to past corrective actions when making similar decisions in the future. Contractor shall dispose of used containers in compliance with label directions to prevent water contamination.
- D. Contractor shall follow current UF/IFAS pest management recommendations for implementing an IPM program as per IFAS Publication ENY-298, *Landscape Integrated Pest Management*, at <http://edis.ifas.ufl.edu/in109>. Contractor shall also utilize available pest-specific information available through UF/IFAS Extension.

WEED MANAGEMENT

- a. Contractor shall use IPM methods to reduce weeds in turf area. This includes accurate weed identification, monitoring for weed emergence, and implementing timely control measures (<http://edis.ifas.ufl.edu/ep141>).
- b. Primary weed control depends on proper cultural practices, chiefly mowing turfgrass at the UF/IFAS recommended height and maintaining adequate mulch in plant beds. Weed control in landscape beds can be difficult due to the variety of plant material that may be vulnerable to herbicides. Thus, preventive weed control is important and typically the most effective weed control approach. Weed infestations will probably have to be removed by hand, as there are a limited number of herbicides available that can be safely applied over the top of and around most landscape plants; see (<http://edis.ifas.ufl.edu/ep523>).
- c. If significant and continuing competition between weeds and desired landscape plants occur, Contractor shall notify Owner and request authorization for use of a preemergent herbicide. After Owner authorizes use of the herbicide, Contractor shall apply the herbicide per the label and in accordance with local and state ordinances.

d. If it is not economical or practical to reduce weeds after they have emerged and established in lawns or ornamental plant beds, postemergent herbicides may be required. Contractor shall notify Owner and request authorization for use of a postemergent herbicide; see <http://edis.ifas.ufl.edu/wg059>.

INSECTS

a. Effective insect pest control is best achieved in landscapes by implementing preventive cultural practices to promote healthy plants, reduce conditions favorable for pests, and conserve natural biological control organisms.

b. Contractor shall use IPM practices to manage insects in the landscape, which include:

- Proper insect identification
- Active monitoring for insect activity and abundance
- Utilizing mechanical and cultural practices first, when available
- Preserving natural, biological control organisms
- Spot-treating pest-infested areas when possible, rather than making calendar-based cover spray applications to the landscape
- c. When possible, Contractor shall use selective, reduced-risk insecticides rather than broad-spectrum, non-selective products. This helps conserve natural predators and parasitoids in the landscape that are attacking plant pests.

d. Contractor shall treat fire-ant mounds individually as they occur with bait formulas.

- Surround each mound with fresh bait without disturbing the mound itself.
- Contractor may use broadcast baiting and broadcast treatment in recreation and common areas only as needed.

e. Insects, including southern chinch bug, fall armyworm, tropical sod webworm, hunting billbug, and mole crickets, can be monitored using UF/IFAS-recommended soapy water flushes and scouting for symptoms of plant damage. See <http://edis.ifas.ufl.edu/ig001> for turfgrass pest-specific recommendations.

f. When available, contractor shall treat sap-feeding pests like southern chinch bug, mealybugs, and scale insects using systemic or translaminar products that get into plant material to be ingested by the pest insect.

g. Contractor shall utilize current UF/IFAS management recommendations for specific landscape insect pests.

PLANT DISEASES

a. Plant diseases occur when excessive moisture is present for extended periods. Correct cultural practices are the key to control of plant diseases, especially with respect to proper irrigation.

b. Contractor shall notify Owner of any fungal disease outbreaks that occur and shall reduce the frequency of irrigation if they do occur. If disease is significant and persistent, Contractor may apply an appropriate fungicide if Owner approves.

c. Tree and palm diseases that are serious include Ganoderma Butt Rot (<http://edis.ifas.ufl.edu/pp100>) and Fusarium (<http://edis.ifas.ufl.edu/pp278>). Contractor shall seek and follow advice from the UF/IFAS Extension Service if those problems are discovered.

Irrigation System Management

A. Contractor shall adjust irrigation frequency and timing to comply with all state and local regulatory requirements. Contractor shall calibrate the irrigation system so that all areas receive adequate coverage. Contractor shall use only certified irrigation technicians for irrigation work.

B. In accordance with section 373.62(2), Florida Statutes, if Contractor installs or performs work on an automatic landscape irrigation system, Contractor shall test for the correct operation of each inhibiting or interrupting device or switch on the system. If such devices are not installed or are not functioning properly, Contractor shall install new devices or repair the existing ones and ensure that each is operating properly before completing other work on the system.

C. Contractor shall ensure that no more than ½ to ¾ inch of water is applied during a single irrigation event. The exact amount of irrigation needed for each event depends on a plant's needs for growth, fruiting, and dormancy for that time of year, and soil characteristics, which can be determined based on UF/IFAS recommendations (<http://gardeningolutions.ifas.ufl.edu/care/irrigation/>).

D. Contractor shall provide a recommended seasonal operating schedule for each irrigation zone for both

- establishment and maintenance conditions, based on seasonal average precipitation rates.
- E. Contractor shall adjust the irrigation schedule seasonally, based on weather conditions.
 - F. Micro-irrigation is recommended for tree and shrub beds. Contractor shall separate those ones from lawn areas to allow for irrigation efficiency.
 - G. Contractor shall encourage the use of smart irrigation technology when planning for system expansion and upgrades.
 - H. Contractor shall ensure that irrigation takes place early in the morning, if possible.
 - I. Contractor shall provide detailed irrigation reports consisting of run times and volume being used.
 - J. Contractor shall instruct Owner regarding how to turn off the irrigation system in case of emergency.
- f. Inspect filtration systems per manufacturer's specifications;
 - g. Reset irrigation controllers and timers seasonally to account for plant growth requirements and local climatic conditions;
 - h. Check distribution uniformity annually;
 - i. Contractor shall, in a timely manner, report to Owner the need for any repairs and work beyond the scope of Contractor's capability;
 - j. Contractor shall promptly repair damaged or defective systems after Contractor discovers the damage or defect; and
 - k. Use replacement parts that have the same characteristics (e.g., discharge-pressure relationship, jet size, and colors) as the original components.

IRRIGATION SYSTEM MAINTENANCE AND REPAIR

Contractor shall perform the following preventive maintenance tasks and provide monthly invoices with a breakdown of services rendered:

- a. Inspect irrigation systems monthly to identify and correct problems, including checking timers, valves, and rain sensing devices; cleaning filters; cleaning and adjusting sprinkler heads; replacing missing or damaged heads and micro-irrigation emitters; repairing leaking or broken pipes and tubing; adding or relocating heads in water-deficient areas; repairing time clocks; replacing or rebuilding valves; locating and repairing cut wires; and conducting other routine irrigation maintenance;
- b. Report by zone and irrigation controller, all irrigation deficiencies, and recommend water saving solutions;
- c. Test and replace batteries in irrigation controllers at least annually during similar time periods;
- d. Calibrate irrigation system seasonally and, upon any changes made to the irrigation system, apply no more than $\frac{1}{2}$ to $\frac{3}{4}$ inch per application;
- e. Flush micro-irrigation distribution systems quarterly;

Appendix I

Table 1. UF/IFAS-recommended mowing heights. Suggested mowing heights and mower types for Florida home lawns. Frequency of cut will vary based on species and time of year.

Turfgrass Species	Optimal Mowing Height (inches)	Preferred Mower Type	Additional resources
Bahiagrass	3.0–4.0	Rotary	http://edis.ifas.ufl.edu/lh006
Bermudagrass	0.5–1.5	Reel/Rotary	http://edis.ifas.ufl.edu/lh007
Centipedegrass	1.5–2.0	Rotary	http://edis.ifas.ufl.edu/lh009
St. Augustinegrass	2.5–4.0*	Rotary	http://edis.ifas.ufl.edu/lh010
Zoysiagrass (Coarse types)	2.0–2.5	Rotary	http://edis.ifas.ufl.edu/lh011

*Dwarf and semi-dwarf cultivars of St. Augustinegrass (Captiva, Delmar, Seville) are the only cultivars of this species that should be mowed at 2.5" Other cultivars should be mowed at 3.5–4".

Appendix II

Sample Monthly Irrigation Work Report

Month _____

Preventive Maintenance Tasks Accomplished (please check)

- _____ Set controllers (seasonal requirement)
- _____ Inspect irrigation systems (valves, timers, filters, emitters, etc.)
- _____ Inspect and test rain shutoff devices (annual requirement)
- _____ Flush micro-irrigation systems (quarterly requirement)
- _____ Turn irrigation controllers to off position (rainy season)
- _____ Recalibrate six randomly selected property systems (annual requirement)

Repair Work Accomplished (please list)

Labor Hours and Charge _____

Materials Required

Materials Cost _____

Other Comments

TOTAL COST FOR MONTH _____

Helpful Resources

Florida Green Industry Best Management Practices for Protection of Water Resources in Florida, 2002. http://ffl.ifas.ufl.edu/pdf/GIBMP_Manual_Web_English_2015.pdf

The Florida Lawn Handbook: Best Management Practices for Your Home Lawn in Florida, Laurie E. Trenholm and J. Bryan Unruh, University Press of Florida, 2005.

The Florida-Friendly Landscaping™ Guide to Plant Selection & Landscape Design. http://ffl.ifas.ufl.edu/pdf/FYN_Plant_Selection_Guide_2015.pdf

A Guide to Florida-Friendly Landscaping: Florida Yards & Neighborhoods Handbook, 2006. http://ffl.ifas.ufl.edu/materials/FYN_Handbook_2015_web.pdf

UF/IFAS Extension Publications: <http://edis.ifas.ufl.edu/>

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