

Adopting a Florida-Friendly Landscape:

Steps for Converting a Traditional Development Landscape to a Florida-Friendly Landscape¹

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F LORIDA HOMEOWNERS HAVE many reasons to consider converting their existing residential landscape to a Florida-Friendly Landscape. Most importantly, a Florida-Friendly yard is an environmentally sound yard that conserves and protects Florida's waterways, soil, wildlife, and energy. Using the right plants in the right place can filter harmful stormwater runoff, improve the landscape's soil, provide wildlife habitat, and create shade for energy efficiency in the home. Landscaping also adds beauty and creates pleasant outdoor living spaces to increase the value of residential property. (Figures 1A and 1B demonstrate a Florida-Friendly landscape renovation in a residential development in Osprey, Fla.)

Increased use of strict irrigation ordinances in Florida is another reason many homeowners in the Sunshine State are choosing to use plants that are more appropriate for a Florida landscape. Florida-Friendly plants – which include both native plants and adapted, non-native plants – survive with little maintenance and thrive in the climate and soils of the state's varied regions. Use of these low-maintenance plants in residential landscapes reduces the need for water, fertilizer, and pesticides and also reduces the energy required for landscape maintenance. (See figures 2A, 2B.)

Creating a Florida-Friendly yard is not difficult, and such yards do not conform to any particular style. Instead, a Florida-Friendly yard is a type of landscape that is adaptable to many styles and yards and includes plant choices and design that follow the “right-plant/right-place” principle, which entails locating plants in those areas of the landscape that best meet the plants' requirements for growth. (For more on this topic, see *A Guide to Florida Friendly Landscaping: Florida Yards and Neighborhoods Handbook*, <http://edis.ifas.ufl.edu/EP079>, and see the Florida-Friendly Landscaping™ Web site at <http://floridayards.org/index.php>.



FIGURE 1A. Before – January 2009. A traditional development landscape in Osprey, Fla., with a limited variety of plants.



FIGURE 1B. After Florida-Friendly landscape renovation – June 2009. The new landscape includes a large bed with a variety of plants, including Needle Palm, Scorpion Tail, Flax Lily, Adam's Needle, and Pinewood Heliotrope. The large, healthy oak tree and shrubs were retained to provide shade and privacy.

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FIGURE 2A. Before – March 2009. A traditional development landscape in Osprey, Fla., with a large sod area and few plantings.



FIGURE 2B. After Florida-Friendly landscape renovation – June 2009. A Canary Island date palm has been retained in the landscape, and the sod area has been reduced to make room for a large bed with a variety of plants, including seaside goldenrod, pentas, blackeyed Susan, gaillardia, and coontie. The diverse plantings are visually appealing and also attract birds and butterflies. The white markers indicate the location of underground utilities in the new bed.

The Three-Phase/Seven-Step Process

The best approach to transforming a traditional residential yard into a sustainable Florida-Friendly Landscape is to convert the yard in phases. Removal of all existing vegetation at once is generally not feasible as bare soil can promote erosion, stormwater pollution and weed germination. A better approach is to remove small sections of sod and other plant material and to replant those areas before moving on to the next section.

The primary changes to the yard will be more trees and landscape plants, but a Florida-Friendly Landscape should also include sod where appropriate. Sod is a good choice for erosion control, stormwater swales, and for sunny areas to be used for recreation or other activities. Plan these turf areas to be just large enough to be functional and easy to maintain. A simple shape that makes irrigation and mowing easy is best.

The process of incorporating more trees and plants can be accomplished in three phases:

Phase 1: Master Plan

- Step 1 – Conduct a site inventory and analysis
- Select plants
- Draw plant beds and plants

Phase 2: Hardscape and Trees

- Step 2 – Remove sod for new hardscape and new plant beds for trees
- Correct any drainage problems
- Install new irrigation or re-fit existing system
- Step 3 – Install new hardscape (patios, decks, walkways, etc.)
- Step 4 – Install trees and mulch

Phase 3: Plant Beds

- Step 5 – Install Bed #1
- Step 6 – Install Bed #2
- Step 7 – Install Bed #3

Phase 1: Master Plan

Before removing any sod, analyze the site and create a master plan to guide the process. A master plan will ensure that the final design will create a cohesive, organized, and visually interesting landscape. (For more on this topic, see *Landscape Design: Ten Important Things to Consider*, <http://edis.ifas.ufl.edu/EP375>, and see *Design Strategies for a Sustainable Home Landscape*, <http://edis.ifas.ufl.edu/EP374>.)

The master plan is a complete plan for the yard and includes all elements and plant material, as well as the locations where these are to be installed. (See Figure 3.)

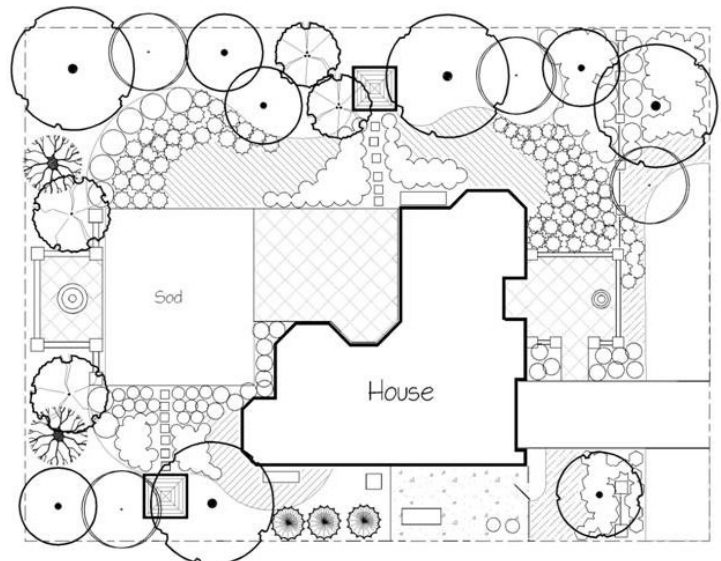


FIGURE 3. A sample Florida-Friendly Landscape Master Plan



FIGURE 4A. Before – March 2009. This traditional development landscape in Osprey, Fla., includes a limited variety of plantings and a large sod area.



FIGURE 4B. After Florida-Friendly landscape renovation – June 2009. The overgrown plants and some of the sod were replaced with a greater variety of plants. The newly installed plants require a thick mulch layer to reduce moisture loss and prevent weeds. These plants will grow quickly and cover the mulch and foundation gravel.

The plan should be drawn to scale on a large sheet of paper and should include the property boundaries from a certified survey and the location of the house and built elements. Before developing the master plan, conduct a site inventory and note on the plan existing vegetation to keep, as well as areas of sun and shade, low areas that collect water, direction of slopes, good and bad views, and utility locations (both overhead and underground).

Be sure to obtain soil tests of the proposed planting areas. Soil tests indicate the pH and the type of soil, such as clay, sand, etc. Soil-test results are used to determine which plants will thrive in the landscape. (For more on this topic, see *Soil Sampling and Testing for the Home Landscape or Vegetable Garden*, <http://edis.ifas.ufl.edu/ss494>.)

As a part of this inventory, homeowners should also decide how the yard will be used and maintained. Be realistic about landscape maintenance, including considering questions such as who will maintain the landscape, how often it will need attention, and what methods will be used (hand weeding or machines).

Once the inventory is complete, determine the location and shape of the plant beds. Beds can be located to take advantage of existing sun or shade or in anticipation of creating shade with new trees. Typically the location of plant beds is determined by the shape of the house and its orientation on the lot. Be sure to locate the plant beds before you choose the plant material, so you know the environmental conditions for each bed.

After locating the beds in the master plan, do some research to determine the best plant to use. Keeping in mind the “right-plant/right-place” principle, create a list of plants that are well suited for the particular site conditions

and activities in your yard. (See figures 4A, 4B.) Helpful lists include the Florida-Friendly Plant Database (<http://floridayards.org/fyplants/index.php>) and the *Florida-Friendly Plant List 2006* (<http://fyn.ifas.ufl.edu/materials/list.pdf>).

When choosing plants, group them into categories – trees, shrubs, or groundcover. Note, too, whether a plant needs sun or shade, as well as the plant’s expected size at maturity (height and spread) and the plant’s shape (spiky blades, soft mounds, etc.) and water requirements. Also note any possible pest problems associated with the plant and typical treatments for the pest problem. Depending on the treatment that may be required, you may choose to keep certain plants away from children’s play areas or away from the house or from other plants.

Plants should also be chosen for their functional role in the landscape. Plants can provide shade to help create a comfortable microclimate. Plants can also be used to create spaces by visually separating areas for activities such as entertaining, children’s play, dog runs or vegetable gardens. Plants also provide buffers or screens for privacy along property boundaries.

Your landscape plan should also take into consideration aesthetics. The intentional use of color, form, and texture in your residential landscape can add beauty and value to your home, so consider the colors, textures and shapes of the individual plants you select, as well as how these plants will look when combined in your landscape. (See figures 5A, 5B.)

Once you have selected appropriate plants for your site conditions and activities, locate the plants in the best possible place for their size, shape, and growing requirements. Draw circles on the plan to represent the



FIGURE 5A. Before – March 2009. A traditional development landscape in Osprey, Fla., with a large sod area and limited plantings.



FIGURE 5B. After Florida-Friendly landscape renovation – June 2009. The new landscape includes a larger plant bed with a variety of plants, including Pentas, Coontie, Salvia, and Flax Lily. A combination of plant colors, textures, and shapes add visual appeal and also attract birds and butterflies.

plants. Remember to layer plants both horizontally (every group of plants is in front of, behind, or beside another group of plant) and vertically (low-growing plants in the front, medium-high shrubs in the middle, and tall trees in the background). Layering in masses creates variety and interest through a mix of color, texture, shape, and size. (For more on layering plants, see *Landscape Design: Ten Important Things to Consider*, <http://edis.ifas.ufl.edu/EP375>.)

Phase 2: Hardscape and Trees

The next phase in the landscape-conversion process begins with removing a portion of the sod to plant trees and/or install hardscape – such as patios, walkways, or decks.

After removing the sod, but before installing hardscape or planting trees, consider stormwater control and collection in your landscape. Grading (shaping) the soil to create shallow swales (low areas), berms, or rain gardens can add variety and interest to the landscape through use of colorful plants and landscape rocks. A rain garden is a low, planted area that collects and holds stormwater on site, filtering pollutants from the water as it is seeping into the ground to recharge groundwater supplies.

This is also a good time in your landscape makeover to consider irrigation and to decide on the best system for your yard – whether in-ground, temporary above-ground, or hand watering. (See Figure 6.) The choice to re-fit an existing irrigation system or install a new system will depend on the type and layout of the existing system and the required layout for the new plant beds. To learn more about irrigation systems and the best choice for your landscape, see *Lawn Sprinkler Selection and Layout for Uniform Water Application* (<http://edis.ifas.ufl.edu/AE084>)

and *Irrigation of Lawns and Gardens* (<http://edis.ifas.ufl.edu/WI003>.)

Once your plans for landscape irrigation and stormwater collection are complete, install hardscape elements. Call your local utility to locate underground utility lines before digging. Design and locate hardscape elements to minimize impact to the ground plane; use piers and stem walls or pervious pavement when possible. To avoid crushing new plants, heavy equipment necessary for installing hardscape elements should be used before plants are installed.

Care should also be taken with heavy equipment to minimize soil compaction; make the travel path as short as possible when moving materials, avoid existing plants, and travel on the same path each time. When feasible, move materials without motorized equipment; use wheelbarrows



FIGURE 6. June 2009. A temporary micro-irrigation system has been installed on top of the mulch in a newly planted Florida-Friendly landscape in Osprey, Fla.. This irrigation system will be removed once the plants are established.

or pull-carts that weigh less and have smaller tire tracks. Protect existing trees with barricades at the drip line (the outer edge of the tree canopy) or beyond.

Once the hardscape is established, trees should be planted before small shrubs and groundcover are planted because trees require more time to establish, and they provide shade and mulch (leaf litter) for smaller plants. (See Figure 7.)



FIGURE 7. June 2009. A recently renovated Florida-Friendly landscape in Osprey, Fla.. The painted orange circles on the new mulch bed mark the location where the new trees will be planted.

Large trees act as structural plants, providing organization in the landscape and creating screens for unwanted views while also adding aesthetic appeal to the property. Planting trees will also help create wildlife habitat and will reduce stormwater runoff. (To learn more about attracting wildlife, such as birds and butterflies, see *Landscaping Backyards for Wildlife: Top Ten Tips for Success*, <http://edis.ifas.ufl.edu/UW175>, *A Bird's-Eye View: How Birds Select Habitat*, <http://edis.ifas.ufl.edu/UW174>, and *Getting Started in Butterfly Gardening*, <http://edis.ifas.ufl.edu/IN564>.)

Phase 3: Plant Beds

The final phases for your landscape conversion includes removing sod in small sections over time and installing plants and mulch. The order in which the sod sections are removed is based on the master plan layout and the needs and desires of the homeowner. An important consideration in creating the plant beds is the boundary of each newly planted area. The beds should be determined by logical stop-and-start points that will give the garden some organization, even as it is being dismantled and rebuilt in phases. (See figures 8A, 8B.)



FIGURE 8A. Before – March 2009. A typical side-yard in a traditional development landscape in Osprey, Fla.. The landscape includes a large area of sod and exposed gutters and utilities.



FIGURE 8B. After Florida-Friendly landscape renovation – August 2009. The new landscape includes large beds with a variety of plants and a stone walkway, which gives form to the plant beds. The trellis will support a Coral Honeysuckle Vine to hide the utilities.

From Traditional Development Landscape to Florida-Friendly Landscape

The step-by-step diagrams in this publication illustrate the phased removal of sod and the addition of trees and plant material in mulch beds to convert a traditional development landscape into a Florida-Friendly Landscape. Figures 9A and 9B illustrate the differences between a traditional development landscape – a near monoculture with a large

amount of sod, a few trees, and a small variety and number of plants – and a Florida-Friendly Landscape, which includes more visual diversity and smaller, yet functional sod areas, as well as a greater variety and number of trees and plants located in larger beds throughout the yard.



FIGURE 9A. Traditional Development Landscape.

Number of Trees– 4
Number of Plants– 55
Variety of Trees– 1 species
Variety of Plants– 2 species



FIGURE 9B. After Florida-Friendly Landscape renovation.

Number of Trees– 19
Number of Plants– 436
Variety of Trees– 6 species
Variety of Plants– 18 species

PHASE 1: Step 1 – Develop a Master Plan

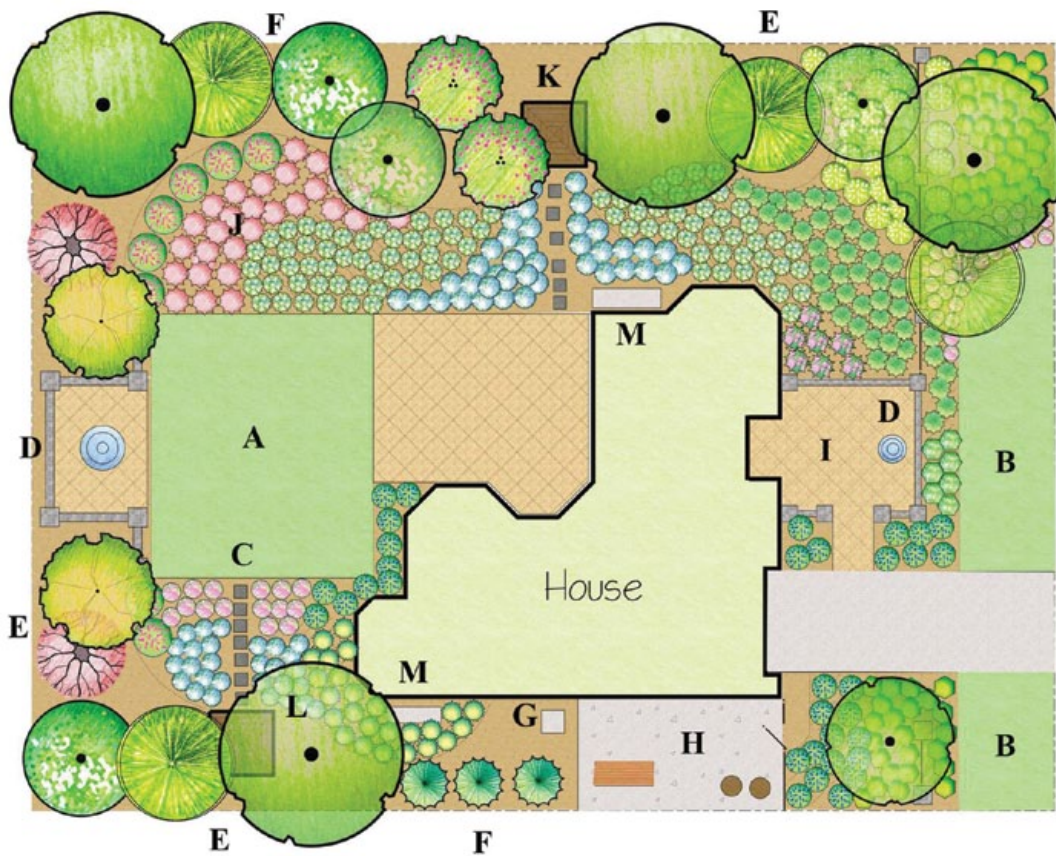


FIGURE 10. A Florida-Friendly yard includes design elements that are aesthetically pleasing and ecologically sound to create an attractive and environmentally healthy yard.

Design Considerations

The master plan might include the following elements:

- A. Lawn panel.** Use hard edging to frame a small, but functional play area.
- B. Functional lawn areas.** Wide lawn strips trap and filter rainwater and keep mulch from washing onto the sidewalk. These areas also serve as a design element to give a more formal appearance to the plant material if a mix of natives is used. A neatly mown strip of sod is a design “cue” that the landscape is being cared for, an important element in the perception that a landscape is attractive.
- C. Pathways and small buildings.** These provide structure in a large space by dividing it into smaller spaces or “rooms.”
- D. Focal points.** Organizational elements capture attention and draw the eye to a specific location in the garden. The focal elements (statuary or pottery) are on axis (in line) with the front and back doors.
- E. Energy efficiency.** Group trees to create shade on the south, east, and west sides of the house.
- F. Screens and buffers.** Locate trees and large shrubs around the perimeter to block views.
- G. AC unit and utilities.** Keep areas around the AC unit and meters clear of shrubs that block air flow and prevent easy access to meters. (Trees can be used to provide high overhead shade.)
- H. Work/trash area.** Locate the work area and trash receptacles conveniently next to the garage.
- I. Entry.** The entry area is a well defined focal point with an entry courtyard.
- J. Wildlife area.** Locate plantings that attract wildlife so they can be easily viewed from the patio
- K. Playhouse.** Locate the playhouse under trees for shade and for easy viewing from the patio.
- L. Garden shed and compost bin.** The compost area is located out of sight from the patio, but in a location convenient to the garden shed and to the side garage door/work area for easy access.
- M. Cisterns or rain barrels.** These are located by downspouts to harvest rainwater for later use in irrigation.

PHASE 2: Step 2 – Remove Sod for New Hardscape and Trees



FIGURE 11. Remove sod and add mulch to create plant beds for additional trees.

Design Considerations

Locate and mark the proposed tree and hardscape locations on your master plan.

- For more efficient mowing and to make sod removal easier in later phases, remove the sod in wide strips, rather than small circles at the marked location of each tree.
- Make the mulched area wide enough so the existing and installed trees will not be damaged by a mower or rotary trimmer during maintenance.
- The mulched bed is determined by the trunk diameter; the mulch should be about 2 feet in diameter for each inch of trunk diameter and should be increased as the tree grows. (For more on this topic, see *Specifications for Planting Trees and Shrubs in the Southeastern United States*, <http://edis.ifas.ufl.edu/EP112>.)
- To correct any drainage problems on the site, re-grade the new bed before planting the trees. Create shallow swales to collect and direct rainwater, or create low areas for a planted rain garden.

Removal and Installation Considerations

Mark the edge of the plant bed with a hose or rope and paint with marker paint.

- There are several methods to remove the sod, depending on area and time. The fastest method is to use a sod cutter, which is particularly useful for large areas.
- Another method is to use a nonselective herbicide (glyphosate) in two applications, with the second application 14 days after the first, and then removing the thatch with a sod cutter and power rake or shovel and hand rake (For more on this topic, see *Establishing Your Florida Lawn*, <http://edis.ifas.ufl.edu/lh013>.)
- To protect the soil, lay down a layer of mulch 3-4-inches thick. (For more information, see *Mulches for the Landscape*, <http://edis.ifas.ufl.edu/mg251>.)
- The most common mulch choices include pine-bark and pine-straw. Choose mulch based on origin, durability and attractiveness. (To learn more, see *Landscape Mulches: What Are the Choices in Florida?* <http://edis.ifas.ufl.edu/fr079>.)

PHASE 2: Step 3 – Install New Hardscape (patios, walkways, decks, etc.)



FIGURE 12. Install hard surfaces, such as patios or courtyards, before adding new plant material.

Design Considerations

Use porous pavers (A) or aggregates, such as gravel, (B) when possible to allow stormwater drainage.

- Design hardscape in simple forms that will minimize the amount of cutting and waste of materials.
- Whenever possible use reclaimed, reprocessed, or recycled-content materials (For more on this topic, see *Design Strategies for a Sustainable Home Landscape*, <http://edis.ifas.ufl.edu/ep374>.)
- Use the most durable materials possible. Long-lasting materials will not have to be replaced or repaired as often and will not end up in the waste stream as quickly.
- Choose materials that use green manufacturing processes and sustainable harvesting techniques. Sustainable techniques minimize damage to the environment, using practices that protect water resources and using non-toxic processing solutions, machinery and extraction techniques less destructive to natural habitats.
- Use materials with good reuse or recycling potential and design, so materials can be disassembled and used again.

Installation Considerations

- If possible, install all new hardscape at the same time to save money and ensure that materials from the same lot will be used.
- Minimize the movement of heavy trucks and equipment in the yard to avoid soil compaction.
- Protect trees from equipment damage with barricades set at the drip lines (outside edge of canopy) or farther out from the tree if possible. (For more on this topic, see *How Trees Grow in the Urban Environment*, <http://edis.ifas.ufl.edu/fr002>.)
- Use installation methods that require the least site disturbance (build on piers or stem walls).
- Call your local utility for the location of underground utility lines before digging.
- Consider your landscape irrigation system and install any below-ground conduits under walkways or patios. Install piping and drains on pool decks if needed.
- Slope hard surfaces so water drains away from the house and into planted areas.

PHASE 2: Step 4 – Install Trees and Mulch

Design Considerations

- Give trees room to grow. Locate trees so they will not interfere with overhead or below-ground utility lines. (For more on this topic, see *Specifications for Planting Trees and Shrubs in the Southeastern United States*, <http://edis.ifas.ufl.edu/EP112>.)
- Locate trees to act as a buffer, to screen views, and to shade the air-conditioning unit, patios and play spaces.
- Choose trees that are appropriate for the regional climate, including in regards to wind, moisture, and salt tolerance. (To learn more about trees, see *Dooryard Fruit Varieties*, <http://edis.ifas.ufl.edu/MG248>, and *Checklist of New, Improved and Underutilized Trees for North and Central Florida*, <http://edis.ifas.ufl.edu/EP331>.)
- Wind-proof trees by grouping them closely to deflect high winds (For more on this topic, see *Design Solutions for a More Wind-Resistant Urban Forest*, <http://edis.ifas.ufl.edu/pdffiles/EP/EP30900.pdf>.)
- For energy efficiency, use large shade trees on the west, east and south sides of your home. Deciduous trees will create shade in summer and allow for sun in winter. (For more on this topic, see *Enviroscaping to Conserve Energy: A Guide to Microclimate Modification*, <http://edis.ifas.ufl.edu/EH143>.)
- Avoid using monocultures (only one type), but also avoid creating a landscape in which every tree is a different type. Use three or four different trees and group them in different combinations to create aesthetic interest.
- Consider the natural shape and size of the tree when choosing its location. Don't plan to force a shape or size by pruning. However, use selective pruning to keep the trees healthy, influence fruit production, and encourage branching and fullness in foliage for aesthetics. (For more on this topic, see *Pruning Landscape Trees and Shrubs*, <http://edis.ifas.ufl.edu/mg087>.)
- Install cisterns or rain barrels to use for irrigation. Locate the cisterns (A) next to downspouts and areas where future plantings will be installed. (To learn more about



FIGURE 13. Group trees of various sizes throughout the mulch bed.

capturing rainwater see *Rain Barrels: A Homeowner's Guide*, Southwest Florida Water management District, http://www.swfwmd.state.fl.us/publications/files/rain_barrels_guide.pdf.)

Installation Considerations

- Call your local utility to locate underground utility lines before digging.
- Choose trees carefully at the nursery. Consider the shape, size, and health of the tree. (For more on this topic, see *Selecting Quality Trees from the Nursery*, <http://edis.ifas.ufl.edu/pdffiles/EP/EP31300.pdf>.)
- Use proper installation techniques to ensure survival of the trees. (For more on this topic, see *Specifications for Planting Trees and Shrubs in the Southeastern United States*, <http://edis.ifas.ufl.edu/ep112>.)
- Install a temporary micro-irrigation system that allows water to seep into the ground (under the mulch), rather than spraying water on each tree above ground, or plan to hand-water until tree is established. (For more on this topic, see *Irrigating Landscape Plants during Establishment*, <http://edis.ifas.ufl.edu/EP113>.)

PHASE 3: Step 5 – Install Plant Bed #1

Design Considerations

- Consult your master plan to decide where to install the first planted area. Base your choice on the bed organization and the use of different areas. You may choose to begin with the area of the yard you use the most, usually the back yard, or the area most visible to the public, typically the front yard.
- To determine the extent of the planted area, use logical boundaries – walkways, fences, house corners or viewsheds (the visible area) from important viewpoints, such as windows or patios.
- Remove a portion of sod (about 1/4 - 1/3 of the existing sod) and test the soil prior to planting. (For more on this topic, see *Soil Sampling and Testing for the Home Landscape or Vegetable Garden*, <http://edis.ifas.ufl.edu/ss494>.)
- Relocate existing plants as noted on your master plan and space and install new plants as indicated in the plan.

Installation Considerations

- If you are not installing the plants, hire landscape contractors certified in Florida-Friendly Best Management Practices (BMPs). (For more on this topic, see *Frequently Asked Questions about Florida-Friendly Landscaping*, <http://edis.ifas.ufl.edu/wq144>.)
- If your landscape already has an irrigation system, determine whether the location of sprinkler heads are compatible with the bed shape and turf area. If a separate zone (a group of sprinklers that water at the same time) is in a plant bed, you may be able to refit zones with micro-irrigation (smaller sprinklers that discharge a small amount of water at the base of the plants) in the plant beds.
- If not (and if you choose not to hand-water), install a new underground irrigation system in Bed #1 before installing



FIGURE 14. Install Plant Bed #1 in a highly visible and well used area.

the plants, or install a temporary, above-ground system after installing the plants. Use sprays on turf areas and use emitters, bubblers or micro-sprays (irrigation heads that release a small amount of water close to the plant base) on plants. (See *Home Irrigation and Landscape Combinations for Water Conservation in Florida*, <http://edis.ifas.ufl.edu/ae287>.)

- Use proper installation practices for planting. (For more on this topic, see *Specifications for Planting Trees and Shrubs in the Southeastern United States*, <http://edis.ifas.ufl.edu/EP112>.)
- Mulch newly installed plants to control weeds and reduce runoff. (To learn more about mulches, see *Mulches for the Landscape*, <http://edis.ifas.ufl.edu/mg251>.)
- Follow a recommended irrigation schedule until plants are established then reduce irrigation as needed. (For more on this topic, see *Irrigating Landscape Plants during Establishment*, <http://edis.ifas.ufl.edu/EP113>.)

PHASE 3: Step 6 – Install Plant Bed #2



FIGURE 15. Plant Bed #2 is typically installed adjacent to Plant Bed #1.

Design Considerations

- Allow time for the plants in Bed #1 to establish before removing the sod for Bed #2.
- Follow the procedure used for Bed #1 to install Plant Bed #2.
- The location of Bed #2 is also determined by bed organization and use. You may choose to plant the area that is contiguous to Bed #1 for continuity and a more finished look, or you may decide to plant another area of the garden that is used more often or used for a different purpose.
- Another consideration for locating Bed #2 may be the size of the trees and the amount of shade they provide.
- In the example plan, the location of Bed #2 was chosen for two reasons – to continue Bed #1 and because the area is highly visible from the backyard patio.
- Remember the plant material in Bed #2 will be smaller than the plants in Bed #1, but the plants in Bed #2 will quickly catch up and fill in the space.

Installation Considerations

- Follow the same installation procedures used for plant Bed #1.
- If a temporary, above-ground irrigation system was used for Bed #1, the system can be relocated to use in Bed #2.
- If using an existing irrigation system, check again to determine whether the sprinkler locations are compatible for the bed size and shape. If yes, it may be possible to refit the zone with an appropriate micro-irrigation system.
- If a re-fit will not provide adequate coverage, use a temporary system or install a new underground system, unless you choose to hand-water.
- See maintenance considerations under Step 7.

PHASE 3: Step 7 – Install Plant Bed #3



FIGURE 16. Plant Bed #3 is the last planted area to be installed for a finished Florida-Friendly landscape.

Design Considerations

- Follow the procedure used in Step 6 to install Bed #3.
- The area designated for final installation on the example plan was the backyard corner. This area is not highly visible from the patio and is separated from the rest of the yard by the lawn panel. In addition, the garden shed and compost are located in this area, which is adjacent to the work zone, where the AC unit and storage/trash area are located.
- Remember the plant material in Bed #3 will be smaller than the plants in Bed #1 and Bed #2, but the plants in Bed #3 will also quickly catch up to the size of the plants in beds #1 and #2.

Installation and Maintenance Considerations

- Follow the same installation procedures used for Bed #2.
- If a temporary above-ground irrigation system was used for Bed #2, the system can be relocated again to use in Bed #3.
- If using an existing irrigation system, check to see if the sprinkler locations are compatible for the bed shape to determine whether a re-fit is possible. If a re-fit will not provide adequate coverage, use a temporary system or install a new underground system.
- Maintain the entire yard with proper irrigation, pruning, fertilizer, composting, and mulching methods. (For more on this topic, see *A Guide to Florida Friendly Landscaping: Florida Yards and Neighborhoods Handbook*, <http://edis.ifas.ufl.edu/EP079>.)
- Use Integrated Pest Management (IPM), including using the least toxic alternatives for pesticides and natural enemies of pests. (For more on this topic, see *Landscape Integrated Pest Management*, <http://edis.ifas.ufl.edu/IN109>.)
- If you are not maintaining the landscape, hire a landscape contractor who is certified in Florida-Friendly Best Management Practices (BMPs). (For more on this topic, see *Frequently Asked Questions about Florida-Friendly Landscaping*, <http://edis.ifas.ufl.edu/wq144>.)

Sources for Information

EDIS Publications (<http://edis.ifas.ufl.edu/>)

- Alexander, Amy et al. (2007) A Guide to Florida Friendly Landscaping: Florida Yards and Neighborhoods Handbook. (<http://edis.ifas.ufl.edu/ep079>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Black, R., Gilman, E., Knox, G. & Ruppert, K. (2003) Mulches for the Landscape. (<http://edis.ifas.ufl.edu/mg251>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Duryea, M. (2008) Landscape Mulches: What are the Choices in Florida? (<http://edis.ifas.ufl.edu/fr079>) School of Forest Resources and Conservation, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Duryea, M. & Malavasi, M. (2009) How Trees Grow in the Urban Environment. (<http://edis.ifas.ufl.edu/fr002>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Gilman, E. (1998) Irrigating Landscape Plants During Establishment. (<http://edis.ifas.ufl.edu/ep113>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Gilman, E. (2003) Specifications for Planting Trees and Shrubs in the Southeastern United States. (<http://edis.ifas.ufl.edu/ep112>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Gilman, E. & Black, R. (2005) Pruning Landscape Trees and Shrubs. (<http://edis.ifas.ufl.edu/mg087>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Gilman, E. & Sadowski, L. (2007) Selecting Quality Trees from the Nursery. (<http://edis.ifas.ufl.edu/ep313>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Gilman, E. & Partin, T. (2007) Design Solutions for a More Wind-Resistant Urban Forest. (<http://edis.ifas.ufl.edu/ep309>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Haley, M., Dukes, M, Miller, G. & Haman, D. (2005) Home Irrigation and Landscape Combinations for Water Conservation in Florida. (<http://edis.ifas.ufl.edu/ae287>) Department of Agricultural and Biological Engineering, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Haman, D., Clark, G. & Smajstrla, A. (2005) Irrigation of Lawns and Gardens. (<http://edis.ifas.ufl.edu/WI003>) Agricultural and Biological Engineering Department, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Hansen, G. (2009) Landscape Design: Ten Important Things to Consider. (<http://edis.ifas.ufl.edu/ep375>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Hansen, G. (2009) Design Strategies for a Sustainable Home Landscape. (<http://edis.ifas.ufl.edu/ep374>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Hostetler, M., Klowden, G., Miller, S. W., & Youngentob, K. N. (2009) Landscaping Backyards for Wildlife: Top Ten Tips for Success. (<http://edis.ifas.ufl.edu/UW175>) Department of Wildlife Ecology and Conservation, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Hostetler, M. (2009) A Bird's-Eye View: How Birds Select Habitat. (<http://edis.ifas.ufl.edu/UW174>) Department of Wildlife Ecology and Conservation, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.
- Knox, G. (2007) Checklist of New, Improved and Underutilized Trees for North and Central Florida. (<http://edis.ifas.ufl.edu/EP331>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Meerow, A. & Black, R. (2003) *Enviroscaping to Conserve Energy: A Guide to Microclimate Modification*. (<http://edis.ifas.ufl.edu/EH143>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Scherer, C., Koehler, P., Short, D. & Buss, E. (2006) *Landscape Integrated Pest Management*. (<http://edis.ifas.ufl.edu/IN109>) Department of Entomology and Nematology, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Shober, A. & Mylavarapu, R. (2009) *Soil Sampling and Testing for the Home Landscape or Vegetable Garden*. (<http://edis.ifas.ufl.edu/ss494>) Department of Soil and Water Science, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Smajstrla, A.G., Zazueta, F.S., & Haman, D.Z. (2005) *Lawn Sprinkler Selection and Layout for Uniform Water Application*. (<http://edis.ifas.ufl.edu/AE084>) Agricultural and Biological Engineering Department, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Sprenkel, R. (2008) *Getting Started in Butterfly Gardening*. (<http://edis.ifas.ufl.edu/IN564>) Entomology and Nematology Department, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Trenholm, L. (1998) *Establishing Your Florida Lawn*. (<http://edis.ifas.ufl.edu/lh013>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Trenholm, L., Momol, E., Shober, A., Denny, G. & Nell, T. (2009) *Frequently Asked Questions About Florida-Friendly Landscaping*. (<http://edis.ifas.ufl.edu/wq144>) Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Williamson, J.G., (2009) *Dooryard Fruit Varieties*. (<http://edis.ifas.ufl.edu/MG248>) Horticultural Sciences Department, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.

Suggested Readings

Calkins, M. (2009) *Materials for Sustainable Sites: A Complete Guide to the Evaluation, Selection, and Use of Sustainable Construction Materials*. John Wiley & Sons, Inc.: Hoboken, NJ.

Scarfone, S. (2007) *Professional Planting Design: An Architectural and Horticultural Approach for Creating Mixed Bed Plantings*. John Wiley & Sons, Inc.: Hoboken, NJ.

Southwest Florida Water Management District, (Watson, G.), (n.d.) *Rain Barrels: A Homeowner's Guide*, http://www.swfwmd.state.fl.us/publications/files/rain_barrels_guide.pdf.

Smith, C., Clayden, A. & Dunnett, N. (2008) *Residential Landscape Sustainability: A Checklist Tool*. Blackwell Publishing: Oxford, UK.

Thomas, H. & Wooster, S. (2008) *The Complete Planting Design Course: Plans and Styles for Every Garden*. Hachette Book Group: New York, NY.

Wichman, Tom et al. (2006) *Florida-Friendly Plant List 2006*. (<http://fyn.ifas.ufl.edu/materials/list.pdf>). Department of Environmental Horticulture, Institute of Food and Agricultural Sciences, University of Florida: Gainesville, Fla.