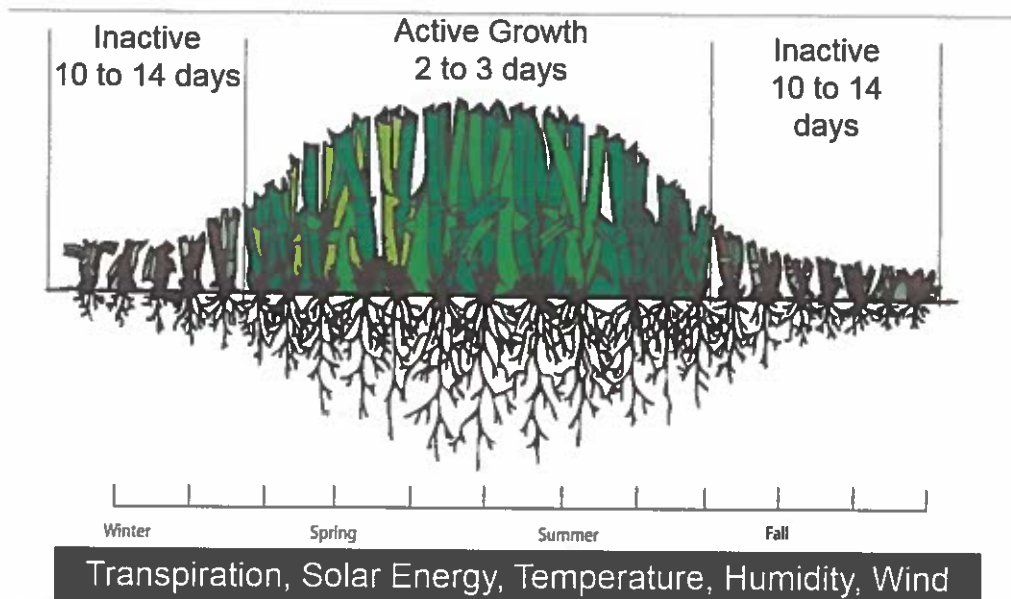


Water needs of plants: Irrigation is installed to meet the seasonally changing water needs of plants during times of less than sufficient rainfall. The statement below about the relationship between water, sand and plants, helps set the guidelines for irrigation scheduling.

One inch of water will wet 12 inches of sand. “Only water retained in the root zone can be absorbed by plants. A well-maintained turf system will grow most of its roots in the first 12 inches of soil. Therefore, the University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS) recommends no more than ½ to ¾ inch of water should be applied at one time. In warmer months, when plants are growing, consumed water may need to be replaced every few days.” (Florida Department of Environmental Protection, 2010)



(Department of Environmental Protection, 2010)

In west-central Florida, spring is the driest season. From the supplemental irrigation scheduling calendar below you can see the irrigation frequency recommendations are twice a week in the active growth seasons, depending on the rainfall. Water demand is highest in spring because plants make their own energy food when they begin to grow. Not only do they need water to stay hydrated and transport nutrients like us, they need it to make their own energy food.

In the presence of sunlight plants split the water molecule (H₂O). The “O” is oxygen. It is a waste product and released to the atmosphere. The hydrogen (H) combines with transport molecules. These energy-carrying molecules are delivered to the plant’s leaves where they are combined with carbon dioxide to make a sugar called glucose, H₆C₁₂O₆. This sugar gives the plant energy to utilize nutrients from the soil and support life processes such as building structure, flowering and seeding.

Balancing rainfall and irrigation:

Below is a yearly schedule for how often to run your irrigation system, **depending on rainfall**.


Use a rain gauge to measure how much rain your yard has received. If it rains 3/4 inch or more within 48 hours of your designated day, turn off your irrigation system until after that date, then turn it back on. Hillsborough County Public Utilities provides a free rain gauge to residents. The rain gauge can be picked up at either of the two county service centers. The South-Central: Brandon Support Operations Complex, 322 N. Falkenburg Rd., Brandon or the Northwest Service Center, 15610 Premiere Dr., Tampa. Place the rain gauge away from trees and buildings, so that the rainfall collected is accurate.

Another option is to use the Florida Automated Weather Network (FAWN) for weekly totals. <http://fawn.ifas.ufl.edu/>. In the blue box in the top center of the page is a list of maps starting with **Temperature**. Go below to **Weekly Total Rain**. There are two sites that have weekly rain averages in Hillsborough County. If you do not live near either site, to get an accurate seven day average, you should go through the webpage directions and create an email notification to receive your personal estimated weekly rain.

Reproduced from Hillsborough County Extension Service "Watching for Signs", *Do It Yourself Sprinkler System Checkup Guide* (Claus, Christine, and Bradshaw, Joan, n.d.)

While west-central Florida averages over 50 inches of rain a year, about 3/4^{ths} of it occurs from June to October. In these months, supplemental watering is usually only needed every 7 to 10 days. During the cooler months (November to March) plant growth typically slows down and watering is usually needed every 10 to 14 days. Be sure to adhere to local watering restrictions. **Use the guidelines below to make seasonal adjustments to your controller.**

West Central Florida Seasonal Supplemental Irrigation Schedule												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Non-Lawn Areas	Once every 10 to 14 days		Once to twice a week, depending on rain		Landscape bed Once a week, depending on rain					Once every 10 to 14 days		
Lawn Areas	Once every 10 to 14 days		Once to twice a week, depending on rain		Turfgrass/lawn					Once every 10 to 14 days		

Once to twice a week, depending on rain, assumes a working rain sensor 

Overwatering: Overwatering can lead to turfgrass problems such as fungal infestation, turfgrass pests, fertilizer leaching and runoff.

Look for these signs.

- Leaves may yellow, brown or drop prematurely
- Individual branches may die back
- Leaves may droop, even when water is applied
- Roots are wet, mushy and dark brown to black
- Soil around roots is moist to the touch, yet plant still droops









Credit: Brevard County IFAS

Let your turfgrass and landscape plants tell you when to water. Use the information below as clues to help you determine when to irrigate. Your turf needs water if the grass loses its green luster; becoming a dull, bluish gray color or if mower wheel or foot impressions remain after yard work. If 30 – 50% of leaf blades fold in half (side to side), it is a sign your turf needs water.

Let Your Lawn Tell You When To Water is an Electronic Data Information Source (EDIS) publication from the University of Florida that expands on the chart below. It explains how to train your turf to grow deeper roots, to better weather drought conditions. <http://edis.ifas.ufl.edu/pdffiles/EP/EPO5400.pdf>

Visual Clues that Indicate it's Time to Water

My plants need water when:

Turfgrass	Landscape
<p>The grass is bluish-gray</p>  <p>This is Zoysiagrass. St. Augustinegrass appears limp and has a grayish tint.</p> <p>Credit: UF/IFAS</p>	<p>Soil samples from the root zone are dry and crumbly</p>  <p>Credit: UF/IFAS</p>
<p>Wheel impressions and footprints (an extreme example) remain in the grass</p>  <p>St. Augustine</p>  <p>Bermudagrass cut extremely short</p> <p>Credit: UF/IFAS</p> <p>Bahiagrass example. 30-50% of leaf blades are folded in half</p>  <p>Credit: UF/IFAS</p>	<p>Indicator plants are wilted at night and in the morning</p>  <p>Credit: P. Staples</p>

Established drought tolerant plants may need little or no irrigation

Below is a chart from *Home Irrigation and Landscape Combinations for Water Conservation in Florida*¹. The full EDIS handout can be found at <http://edis.ifas.ufl.edu/pdffiles/AE/AE28700.pdf>

This EDIS document explores water savings, comparing landscape beds in relation to turf area. It includes these suggested run times for irrigation systems with different spray heads. Older irrigation systems can have rotors and stationary spray heads in the same zone. This makes it difficult to calculate irrigation minutes for that zone. Some plants in that area will get either too much or too little water.

Table 1. Seasonal irrigation run times for spray and rotor zones.

Head Type	% Seasonal Adjustment Settings	100%	60%	Remove 1 day	80%
		Summer	Fall	Winter	Spring
Spray Applies 1½"/hr.	Ideal	25 min	15 min	0 min	20 min
	Range	20-30 min	10-20 min	0-10 min	15-20 min
Rotor Applies ½"/hr.	Ideal	45 min	30 min	<10 min	40 min
	Range	40-60 min	20-40 min	0-20 min	35-55 min

Self-Audit Irrigation System Evaluation: What to look for, adjust or repair. Open up the EDIS documents below to learn more about each audit activity.

Irrigation system condition:
(visual inspection during operation) Find explanations at:
<http://edis.ifas.ufl.edu/pdffiles/AE/AE45100.pdf>

Leaks, Clogs, Broken heads:
Blocked spray path:
Misdirected heads:
Misting spray:
Heads same type:
Lawn & landscape separate:

Residential irrigation controller:
<http://edis.ifas.ufl.edu/pdffiles/AE/AE22000.pdf>

Rotors set for ___ minutes.
Sprayers set for ___ minutes.
Settings follow current restrictions:
<http://www.hillsboroughcounty.org/index.aspx?NID=3026>

Rain sensor: How to test if it is connected.
<http://edis.ifas.ufl.edu/pdffiles/AE/AE22100.pdf>

Present:
Connected:
Operational:
Last maintenance event:

Rain gauge :
Calendar:
Record your rain in inches on a calendar.

Present:
Monitored:

Best Management Practice: Visually inspect your irrigation system. Hillsborough County allows homeowners to identify maintenance issues weekly. Clean and adjust your system to maintain even irrigation water application.

- ✓ **Irrigation System Maintenance** – "Irrigation systems may be operated during restricted days or hours for cleaning and maintenance purposes, but limited to ten (10) minutes per week. An attendant must remain visibly on site during the entire cleaning and maintenance operation."
<http://www.hillsboroughcounty.org/index.aspx?NID=3026>

Works Cited:

1. Florida Department of Environmental Protection, U. (2010). Chapter 3: Irrigation Best Management Practices. In *Florida Friendly Best Management Practices for Protection of Water Resources by the Green Industries* (2nd ed., p. 16). Tallahassee: 2nd printing. State of Florida. http://fyn.ifas.ufl.edu/pdf/GIBMP_Manual_WEB_2_17_11.pdf
 2. Brevard County IFAS Extension, (n.d). Watering Your St. Augustine Lawn. Retrieved February 24, 2015. <http://brevard.ifas.ufl.edu/Horticulture/PDF/wateringlawns.pdf>
 3. Claus, Christine, and Bradshaw, Joan. West-Central Florida Seasonal Sprinkling Schedule. St. Petersburg: Pinellas-Anclote River Basin Board of Southwest Florida Water Management District, n.d. Print.
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