IRRIGATION
The 3 most common irrigation questions???

1. Why are you irrigating during the day?
2. Why is the irrigation running when it’s raining?
3. Why are you watering the sidewalks and roads?
The Basics

Watering windows set by BRU

- Residential – Midnight to 10:00 a.m.
- Inspections – 10:00 a.m. to 4:00 p.m.
- District – 4:00 p.m. to Midnight
Irrigation in common areas during daytime hours

A common concern that is often brought forward by residents is related to irrigation running during the daytime hours. The issue as normally presented, “If residents are restricted to once a week watering, then why can the common areas water both during the evening and daytime hours?” The vast majority of the irrigation watering during the daytime hours are non-scheduled events. When we see water operating during the daytime hours we are observing our landscape maintenance contractors ensuring that all irrigation systems are functioning properly as required by the Southwest Water Management District (SWFWMD). The Community Development Districts have included the service of weekly irrigation inspections within their landscape contracts, these services correlate with the Water Management District’s requirement to maintain irrigation systems.

There are approximately 510 irrigable acres in the LWR District common areas and per the landscape contract, “Contractor shall be responsible for damage to irrigation and water system items that were not reported to the District Manager in writing, and will be paid for the replacement of these items. Contractor shall be responsible for monitoring the water levels in (beds and) turf areas, and reporting any problems, in writing, if present during the maintenance visit. Contractor shall be responsible for the leakage (from) to plants that were not reported to the District Manager in writing, and will be responsible for the replacement of these items.” There are approximately 300 acres and approximately 52,000 irrigation heads covering hundreds of acres within the LWR. All sprinkler heads are constantly inspected and monitored to maintain our healthy landscape. Our landscape maintenance contractors have several full time irrigation technicians who specialize in testing and repairs. Furthermore, the contract language specifically requires that the “contractor agrees to monitor, adjust and maintain all irrigation zones, heads, valves, pipes and sprinklers. Minor adjustments include flow control, radius adjustment, nozzle cleaning, sprinkler height and level adjustment.”

Currently, due to the lack of rain and above average temperatures it is critical that all irrigation is functioning at its optimum level. In our best effort to provide an adequate amount of water and coverage for the survival of our landscape. It is our expectation that during the daytime hours and within a normal week there will be multiple areas of common area irrigation operating for testing purposes somewhere in LWR. In fact, if this is not happening, we know the contractors are not meeting the standards contained within their contract. It is especially important that the irrigation zones are monitored after mowing events to repair any “irrigation gwers” that may otherwise occur during normally scheduled watering times. Broken sprinkler heads can result in a dramatic drop in pressure in a given zone, and not allow for proper coverage during our current once a week opportunity to irrigate.

There are other exceptions to daytime and once a week watering that are contained within the SWFWMD rules and regulations, namely micro-irrigation may be operated any day and at any time. The ultimate goal is to maintain our landscape in a healthy and attractive condition, while staying within the rules and regulations of the SWFWMD. If you should see water running during daytime hours without staff present, please do not hesitate to contact our office.

Resources:
http://www.swfwmd.state.fl.us/
Operations office - 341-722-1089

why do we water during the day?
The vast majority of the irrigation watering during the daytime hours are non-scheduled events.

- **Who is watering?**
  - Landscape contractors with full-time irrigation technicians that specialize in testing & repairs

- **What are they doing?**
  - Weekly irrigation inspections

- **When do they do inspections?**
  - 10 a.m. to 4 p.m. - It is critical that the sprinkler heads are constantly inspected and monitored to maintain a healthy landscape

- **Why do they test?**
  - Per the landscape contract
Email excerpt to landscape contractors:

However, if I have not made myself clear on this, please let me do so now:

➢ IF IRRIGATION IS RUNNING DURING DAYTIME HOURS STAFF MUST BE PRESENT

➢ STAFF SHOULD ACTUALLY BE MAKING ADJUSTMENTS TO THE IRRIGATION WHILE TESTING

➢ SIGNS MUST BE PRESENT

➢ IF YOU NEED MORE STAFF TO TEST AND MAINTAIN IRRIGATION, PLEASE MAKE ARRANGEMENTS
How many???

- How many irrigation controllers do we maintain?
  - 187 controllers

- How many valves?
  - 1,551

- How many sprinkler heads?
  - 52,760
<table>
<thead>
<tr>
<th>District</th>
<th>Uniques</th>
<th>Clocks</th>
<th>Valves</th>
<th>Rotors</th>
<th>Sprayheads</th>
<th>Microjets</th>
<th>Totals</th>
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<tbody>
<tr>
<td>District 1</td>
<td>70</td>
<td>14</td>
<td>276</td>
<td>4,040</td>
<td>3,075</td>
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<td>18</td>
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<td>3,575</td>
<td>1,700</td>
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<td>4,660</td>
<td>2,550</td>
<td>8,700</td>
<td>15,910</td>
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CDD2 – Lakewood Ranch Blvd

Sample of **ONE CLOCK**
Clock E-16 – **52 Zones**
From Masters Ave to Natures Way
Annuals Beds & Other Zones

NW Corner of Masters Ave & Legacy Blvd
Irrigation Improvements
Scope of improvements:

- Large & small scale irrigation controller technology upgrades
- Installation and application of District weather stations used by large scale irrigation controllers
- Application of soil moisture sensors used by small scale irrigation controllers
## Clocks Upgraded to Date

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<thead>
<tr>
<th>District 1</th>
<th>Uniques</th>
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<th>Clocks</th>
<th>Clocks Upgrade</th>
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<td>District 2</td>
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<td>Uniques Upgrade</td>
<td>Clocks</td>
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Soil Moisture Sensors

Weather Stations
Communicate via the Web

Communicate through Tucor’s server via a variety of communication technologies
**District 5 Tucor Weather Station**

Controller N2-N1 CDD 5 Located at APG & Legacy Blvd, South of LWR Golf & Country Club

Weather Station Rainfall and ET Data

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<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Total Rainfall</th>
<th>Total ET</th>
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<tbody>
<tr>
<td>2012</td>
<td>August</td>
<td>5.84</td>
<td>4.39</td>
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<tr>
<td>2012</td>
<td>September</td>
<td>3.73</td>
<td>3.77</td>
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Evapotranspiration (ET) is the sum of the evaporation and plant transpiration from the Earth's land surface to atmosphere.
Weather Stations

- Tucor System
- One station per District
- Rain & ET History
- Rain Shut Down Alarm
- ET Program Application
- Irrigation runtime reduction
Weather Station Actual Data

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Day</th>
<th>ET</th>
<th>ETo</th>
<th>Actual Rain</th>
<th>Usable Rain</th>
<th>Rain discard</th>
<th>Excessive Rain</th>
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<tr>
<td>2012</td>
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<tr>
<td>2012</td>
<td>9</td>
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<td>0.20</td>
<td>0.09</td>
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Month total: 4.39 5.84 5.84 0.00 0.00
Cycle/Soak Method
### Tucor Irrigation Controller N2-N1 District 5

#### Location:
APG & Legacy Blvd, South of LWR Golf & Country Club

#### Program 1 Schedule
- **Day:** Monday
- **Start Times:** 6:00 and 9:05pm

#### Program 1 Controller Operation: September 3, 2012

<table>
<thead>
<tr>
<th>Program</th>
<th>Method</th>
<th>Zones</th>
<th>Distribution Type</th>
<th>Maximum Runtime (Minutes)</th>
<th>ET Adjusted Actual Runtime</th>
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<tbody>
<tr>
<td>1</td>
<td>Cycle-Soak</td>
<td>1</td>
<td>Rotor</td>
<td>118</td>
<td>68</td>
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<tr>
<td>1</td>
<td>Cycle-Soak</td>
<td>9</td>
<td>Rotor</td>
<td>118</td>
<td>68</td>
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<td>1</td>
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<td>Rotor</td>
<td>118</td>
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</table>

**Total Program Runtime:** 354 204

#### Next Program 1 Controller Operation: October 1, 2012

<table>
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<th>Distribution Type</th>
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<th>ET Adjusted Actual Runtime</th>
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<td>Rotor</td>
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<td>Rotor</td>
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<td>1</td>
<td>Cycle-Soak</td>
<td>10</td>
<td>Rotor</td>
<td>118</td>
<td>60</td>
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</table>

**Total Program Runtime:** 354 180
What does the National Meteorological Society consider a “heavy rain event”?

- Over .30” per hour or more than .03” in six minutes is considered a “heavy” rain.
- Currently our rain shutdown mode is triggered at .35”.
Small Scale Controllers & Soil Moisture Sensors

- Replace battery powered controllers
- Communicates wirelessly from control to valves
- Operation of soil moisture sensors
Optimizer – Settings vs. Actual

Monthly Runtime Mode Setting vs. Actual Sensor Mode Runtime

- EW Point 19A (South)
- EW Point 19B (North)
- Pedestal 14B (Pedestal 14B-Edgewater Entrance)
- Pedestal 13A (Pedestal 13A-Gatehouse)
- Pedestal 13B (Pedestal 13B-Gatehouse)

Conf igured Aug Sep

<table>
<thead>
<tr>
<th>Date</th>
<th>Configured</th>
<th>Aug</th>
<th>Sep</th>
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</table>

Monthly Runtime (Total Minutes)

- Configured: 1300, 1170, 1300, 1632, 1692, 1030, 801, 1151, 392
- Aug: 801, 1692, 1030, 392
- Sep: 1300, 1632, 1692, 392
Watering Sidewalks & Roadways

Originally designed with rotors installed between sidewalks and roadways

- Wasted water & wet, unhappy pedestrians
Upgrades

Eagles Watch Way

New pop up sprays replaced the rotors along the sidewalk
How much???

- There are 660,000 gallons in an Olympic size swimming pool...how many Olympic size swimming pools would we fill in a week?
  - 21 Olympic size pools

- Based on GIS data we irrigate how many acres?
  - 510 acres

- It takes how many gallons of water to cover one acre with 1” of water?
  - 27,154 gallons
CONCLUSION