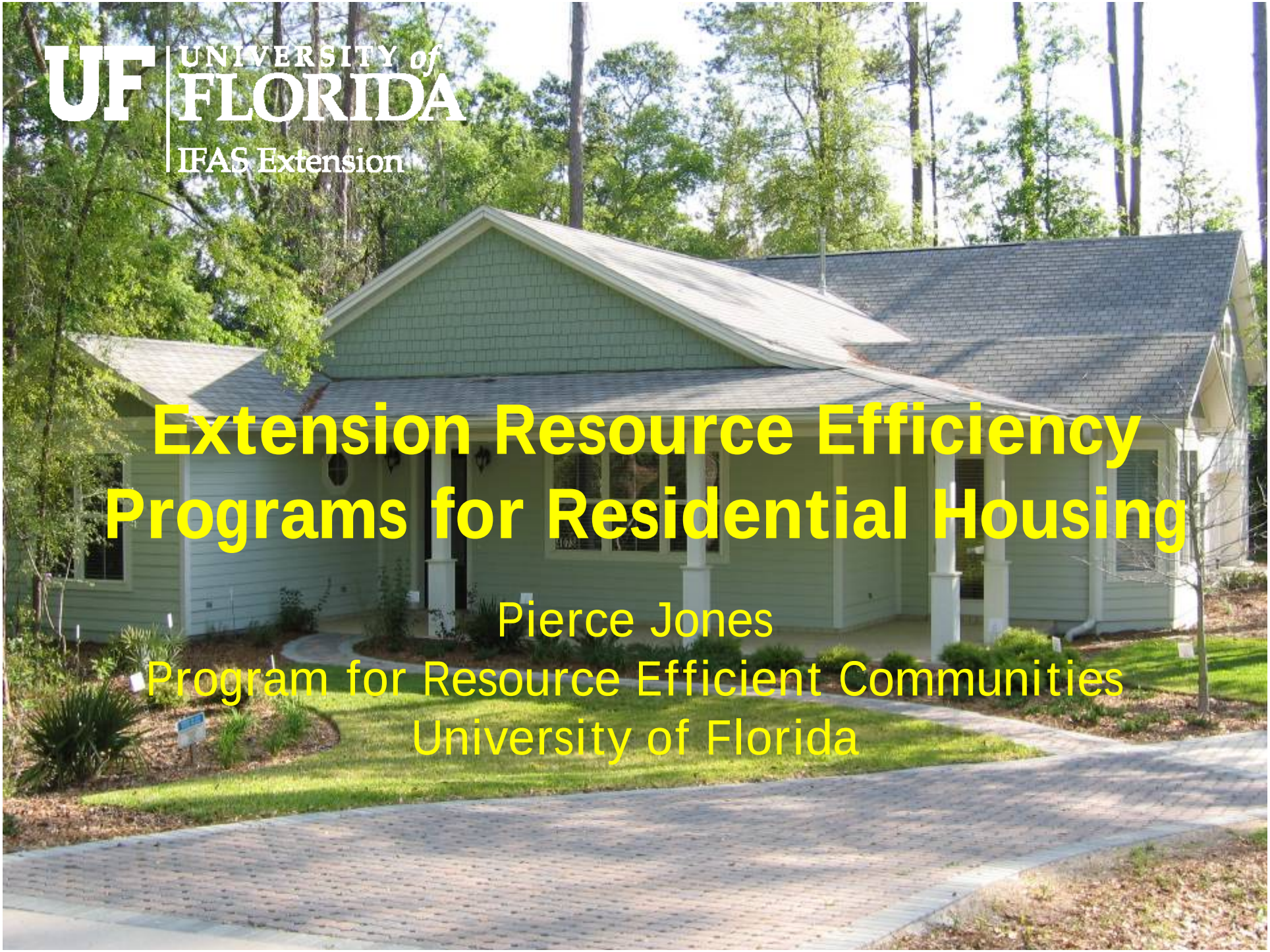

Extension Resource Efficiency Programs for Residential Housing

Pierce Jones
Program for Resource Efficient Communities
University of Florida

Program for Resource Efficient Communities

We promote application of design, construction and management practices that minimize environmental degradation and make more efficient use of energy, water and other natural resources in master planned residential communities.

Program for Resource Efficient Communities

Active on-campus faculty include:

- Glenn Acomb — Landscape Architecture
- Kathy Malone — Environmental Horticulture
- Mark Clark — Soil & Water
- Michael Dukes — Ag & Biological Engineering
- Mark Hostetler — Wildlife Ecology & Conservation
- Tom Ankersen — Law
- Others

Program for Resource Efficient Communities

Extension methods include:

- Continuing education
- Targeted workshops
- Publications
- Consulting

Program for Resource Efficient Communities

Funding mechanisms include:

- Continuing education — Registration fees
- Targeted workshops — Sponsorships
- Publications — For sale
- Consulting — Hourly rate

Growth Trends

Context

Growth Trends

Population - Florida:

- 1980 ~10,000,000
- 2005 ~17,000,000
- 2030 ~28,000,000

Growth Trends

Building Permits - Florida:

- 2003 ~155,000
- 2004 ~185,000
- 2005 ~208,000
- 2006 ~146,000
- 2007 ~72,000
- 2008 ~40,000

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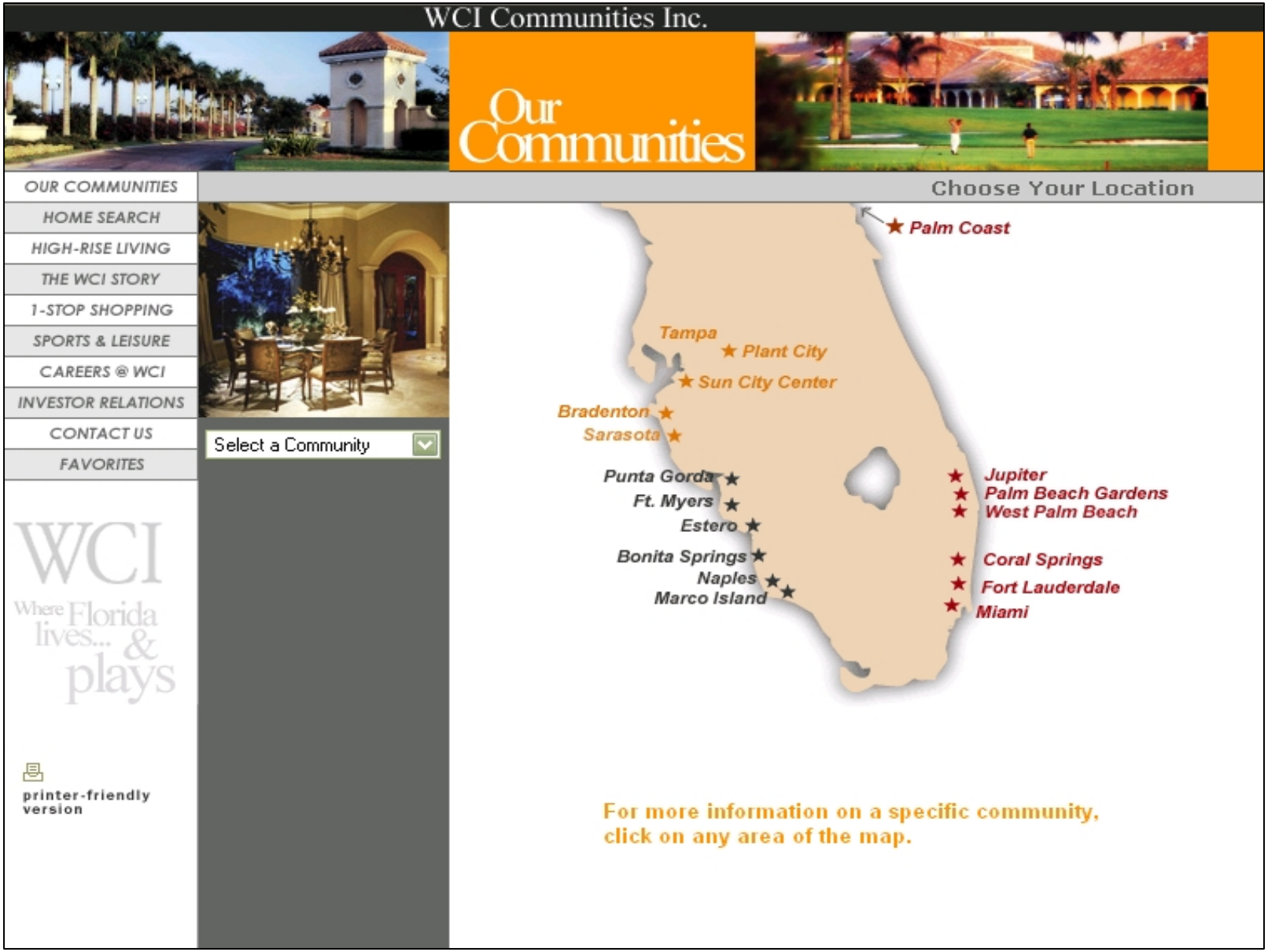
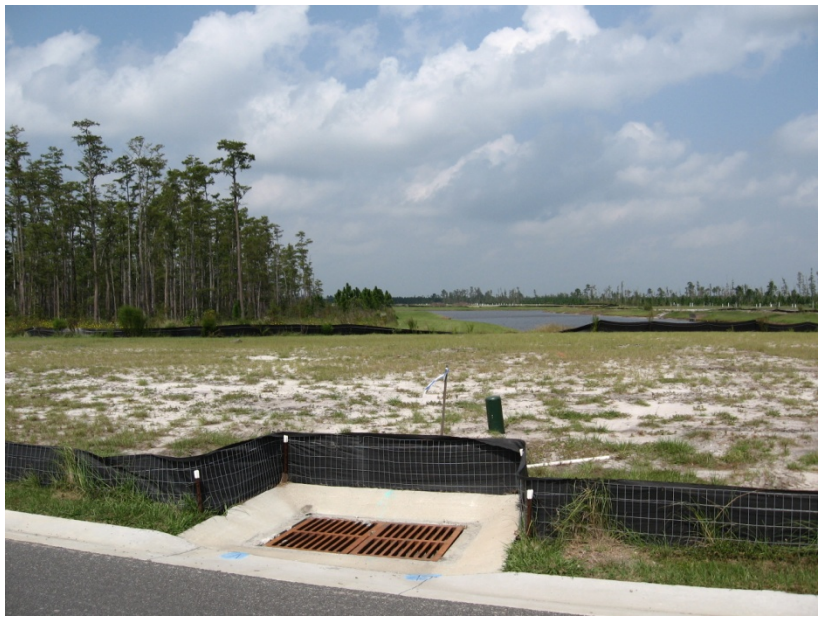
Growth Trends

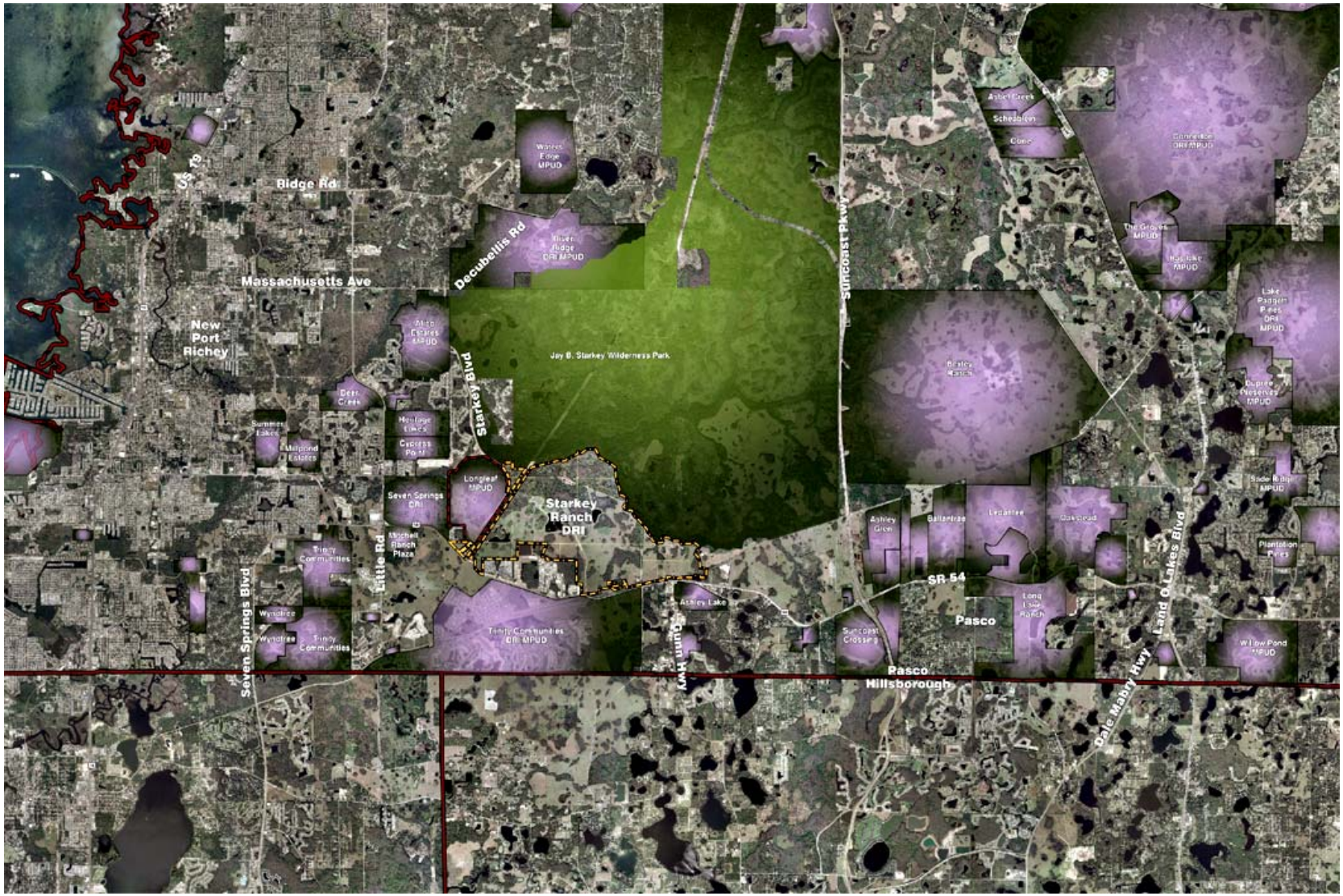


Growth Trends



Growth Trends

Growth Trends



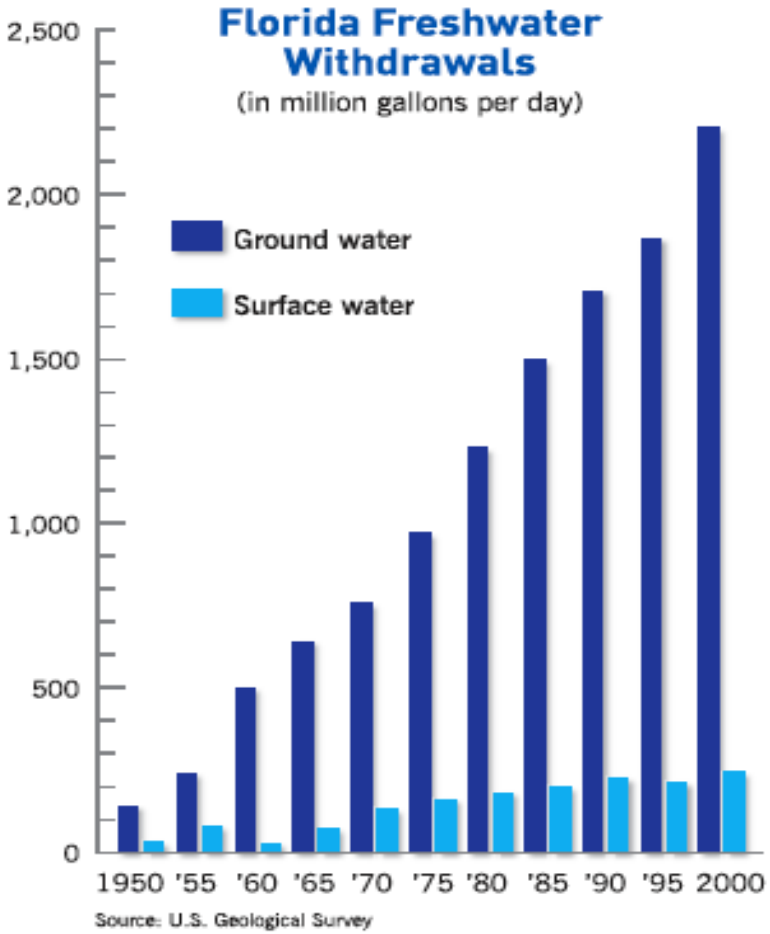
South Pasco County

Water Supply

Water Supply

200,000 Gallon Water Tower

Water Supply



Tampa Bay Water Desalinization Facility

St. Petersburg Times

Man jailed for brown lawn gets help from neighbors

By Erin Sullivan, Times Staff Writer
In print: Monday, October 13, 2008

BAYONET POINT — "He's in prison for God knows how long because we can't afford to sod the lawn," said his sobbing daughter, Jennifer Lehr.

Prudente has owned a home in the deed restricted community since 1998. The covenants require homeowners to keep their lawns covered with grass.

Free from jail, Joseph Prudente, 66, inspects his new lawn with pride Sunday. Prudente, who says he barely has enough to pay the mortgage, was jailed for having a brown lawn.

SOUTH FLORIDA
THE BUSINESS JOURNAL
March 24-30, 2006 • $2.50 southflorida.bizjournals.com Broward Edition

Water woes hit development

EDITOR'S NOTE: *This is the first in a series examining how the region's drinking water is running low.*

BY SUSAN STABLEY

South Florida has run out of natural sources of drinking water and will likely experience halted development due to the problem.

Major real estate projects in the tri-county area must be curbed until alternative sources of water can be developed, according to the state. Already, it has told Miami-Dade County to reject 17 large-scale projects because of drinking water scarcity.

And the creation of alternative water sources will not happen soon. The work will cost of hundreds of millions of dollars and can take decades to complete, according to estimates from regional and local water officials.

"For us to go back into a built environment is a very expensive proposition," said Doug Yoder, assistant director of Miami-Dade County's water and sewer department.

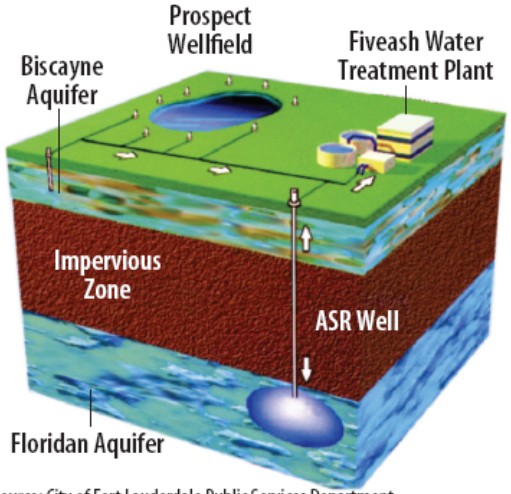
Last week, Gov. Jeb Bush vowed to make South Florida confront its water issues before the state will approve any more large projects.

"It makes no sense to develop west and west and west without the adequate development of infrastructure and water supply," Bush said at the Urban Land Institute's Symposium on Regional Cooperation on March 17.

See **WATER,** Page 62

POTENTIAL SOLUTION

Fort Lauderdale is pumping water into the saltier Floridan Aquifer, where it forms a freshwater bubble that can be tapped in times of drought.



Source: City of Fort Lauderdale Public Services Department

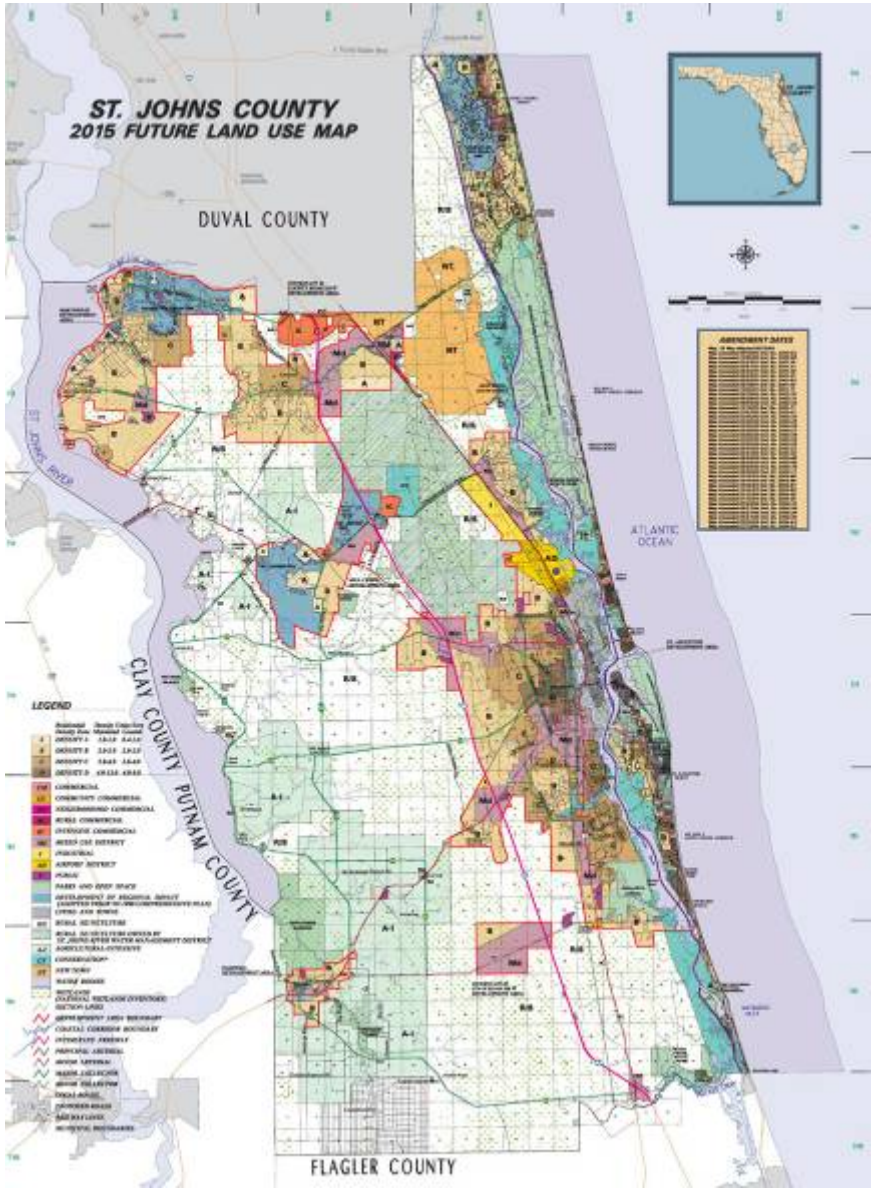
Water Quality

Water Quality

Microcystis Bloom - St. Johns River mid-channel south of the Buckman Bridge - 08.19.05 - 2:04pm

Microcystis Bloom - East bank of the St. Johns River - Mandarin - 08.19.05 - 2:42pm

Water Quality



Water Quality

2005 Fertilizer Consumption (Tons/yr):

County:	Farm
• Clay	1,190
• Nassau	1,540
• Duval	3,970
• St Johns	22,780

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Water Quality

2005 Fertilizer Consumption (Tons/yr):

County:	Farm	Non-Farm
• Clay	1,190	5,230
• Nassau	1,540	2,040
• Duval	3,970	23,500
• St Johns	22,780	3,480

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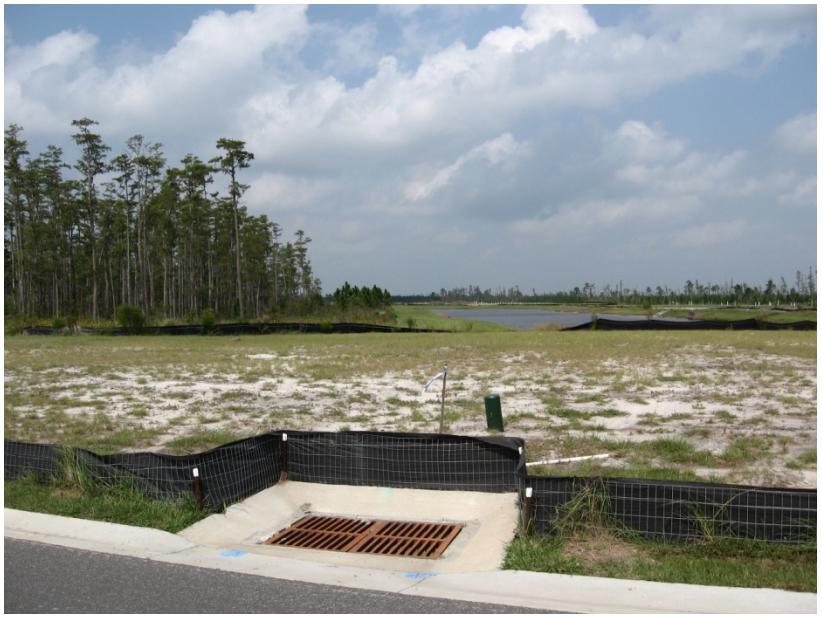
Water Quality



Water Quality

Final Draft LSJRB SWIM Plan Update - May 2008

Table C-5: Nonpoint Sources–Freshwater Nitrogen Load Allocations (as of February 2008)

Source Category	Load Allocation lbs/yr	Reduction from Starting Point
Non-MS4 Stormwater1		
Hastings	988	28.0%
Pomona Park	238	0.0%
Putnam	75,049	21.8%
St. Johns Non-Urbanized Area	55,972	6.7%
Welaka	1,850	28.4%
Other Sources		
Agriculture	429,264	37.2%

Financial News & Daily Record

Swimmable river will cost $450 million

05/01/2008

by David Ball - Staff Writer

Nearly 14,500 tons. Almost 29 million pounds. That's how much nitrogen and phosphorus is pouring into the lower St. Johns River each year from wastewater treatment plants and stormwater runoff, according to Florida DEP.

Now, after eight years of work, the DEP is about to finalize a plan requiring at least $450 million in expenditures by Northeast Florida utilities, governments and others to reduce their total nutrient discharge by about 26 percent. Some estimate the true costs at more than $1 billion.

The reductions are part of new Total Maximum Daily Loads (TMDLs) defined for the Lower St. Johns. A TMDL is a specific amount of nutrients the river can carry while still maintaining water quality levels, and for the Lower St. Johns, it's 11,518 tons of nitrogen and phosphorus.

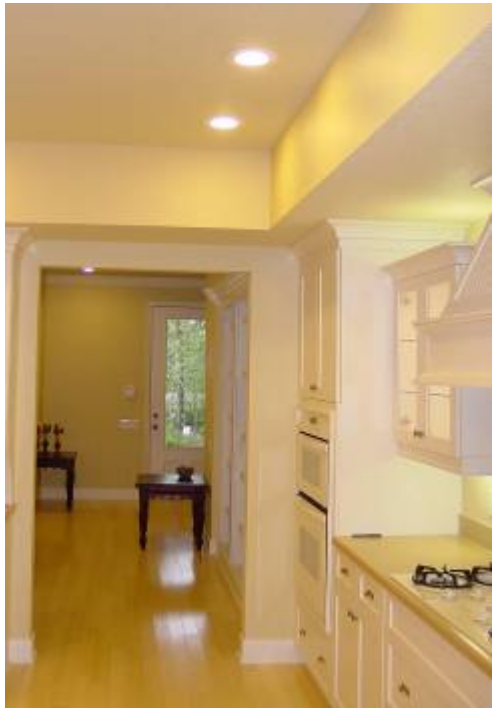
Growth Issues

Energy

Energy

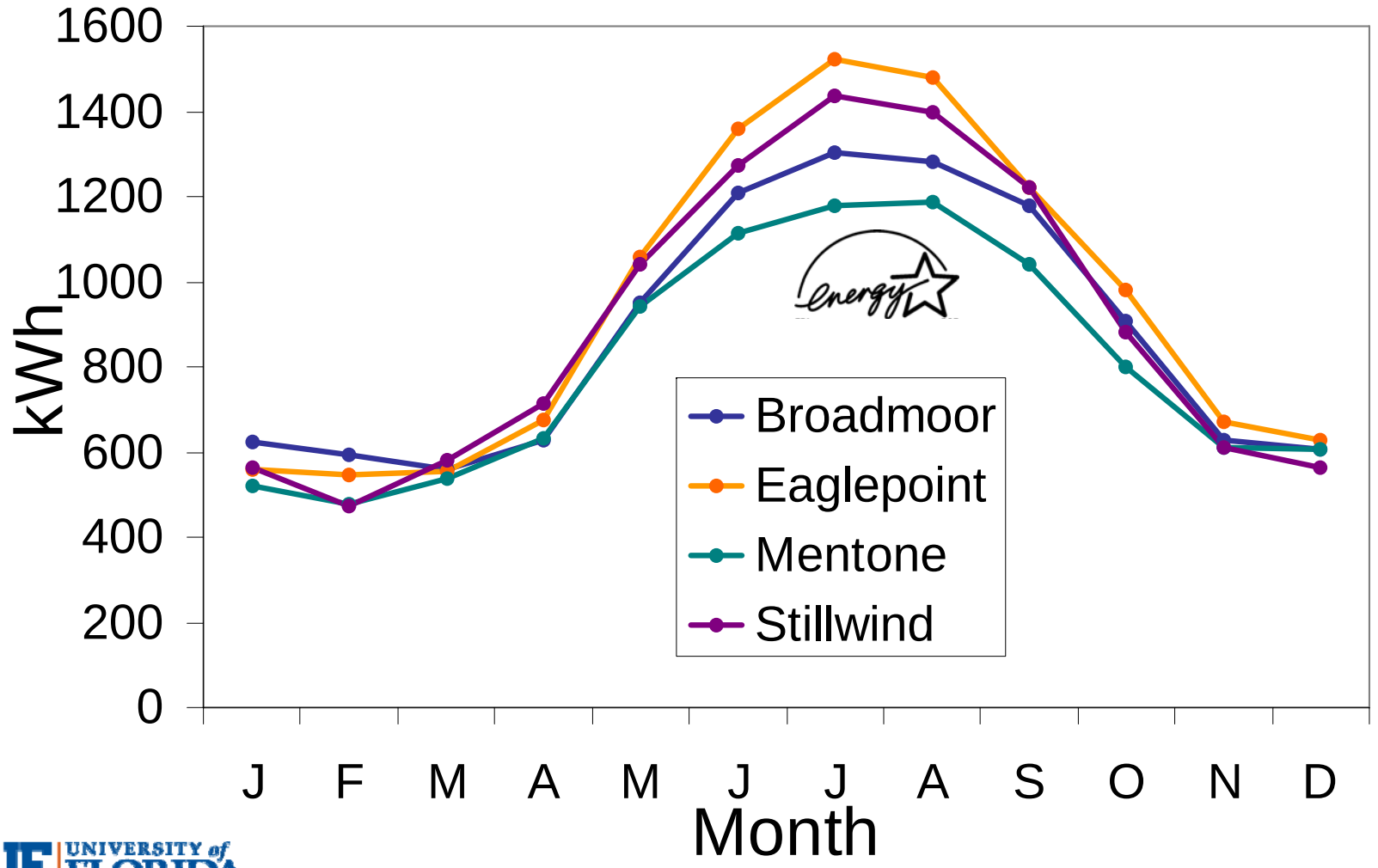
Unloading Coal Hoppers

Energy



Energy

2000 Residential Energy Use Study



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Energy

Estimated annual reductions if all Florida homes permitted in 2005 were ENERGY STAR qualified:

- Energy ~576,000,000 kWh
- Utility bills ~$69,000,000
- CO2 ~1,607,900,000 lbs

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MiamiHerald.com

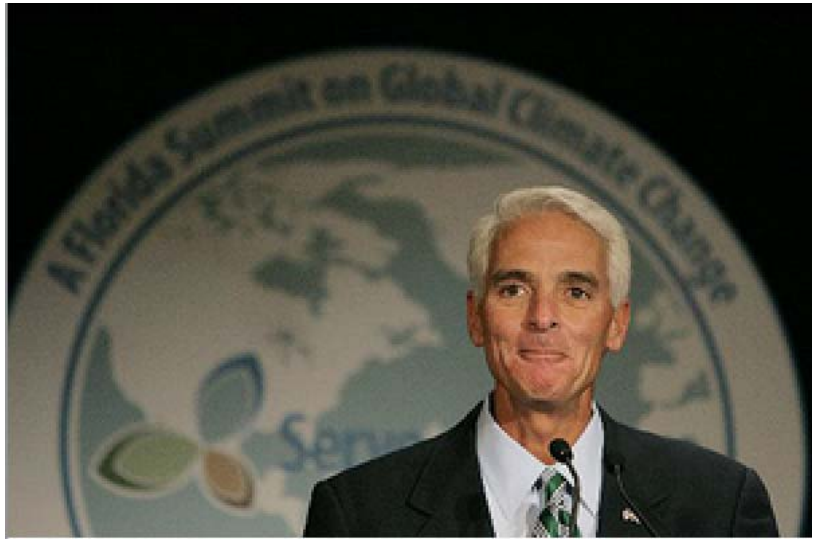
Posted on Fri, Jul. 13, 2007

THE ENVIRONMENT

Crist sets Florida on a green path

Florida will act forcefully on its own to counter global warming, Gov. Crist said as he prepared to sign a series of pollution-fighting orders.

BY MARTIN MERZER
mmerzer@MiamiHerald.com



Surrounded by foreign officials but no one from the Bush administration, Gov. Charlie Crist warned Thursday that global warming poses such a dire threat to Floridians that the state must take immediate, dramatic and unilateral action.

The first phase of that initiative begins today as Crist signs unprecedented orders intended to help reduce pollution, slow global warming and position the state as a national model—even as the federal government remains on the sidelines.

St. Petersburg Times

Fla. utilities dump coal-fired power plant

Gov. Charlie Crist says climate change played a role in plans.

By STEVE BOUSQUET and CRAIG PITTMAN
Published July 4, 2007

TALLAHASSEE - Under pressure from Gov. Charlie Crist, a consortium of Florida utilities pulled the plug Tuesday on another controversial coal-fired power plant because of concerns about global warming.

“It’s like a new day is dawning for energy in Florida,” said Susan Glickman of the Southern Alliance for Clean Energy, which opposed the plant.

Crist announced the demise of the coal plant during a news conference unveiling the agenda of his global warming summit in Miami next week, where he promised to “identify specific actions” that Florida can take to combat climate change.

“Good things are happening,” Crist said. “That pleases me, and I think it pleases our fellow Floridians.”

Madera

(Extension Demonstration Project)

Madera

Reduced Impact Site Design

Confirmed Rating

UF-Institute of Food & Agricultural Sciences
4073 SW 21st Terr
Gainesville, FL 32608-

Class 1 Rating
Registration No.: 6680
Climate: North Florida

FLORIDA
BUILDING ENERGY RATING GUIDE

Best
$723

$1208

Worst
$4149

31 MBtu | **61.1 MBtu** | **214 MBtu**

▼ Proposed Home
◊ HERS Reference Home[1]
Annual Savings: $645.92

Cost Basis:
Gainesville Regional Utilities
North Default
Statewide Prices

Electric Rate: $0.085 /kWh
Gas Rate: $1.504 /Therm
Oil: $1.65/gal LP Gas: $1.92/gal

As compared with other **2773** square foot, **4** bedroom homes **without** pool pumps.

This Home Qualifies for EPA's Energy Star Label[2]
This Home Qualifies for an Energy Efficient Mortgage (EEM)

Cooling	$119
Heating	$305
Hot Water	$173
Refrig.	$132
Dryer	$84
Stove	$58
Lighting	$79
Misc.	$259
Pool	

HERS Score[3]: 92.8

★★★★★+

GREAT SEAL OF THE STATE OF FLORIDA · IN GOD WE TRUST

Arlene Z. Stewart — Certified Rater
530 — I.D. Number
Signature
6/14/04 — Date

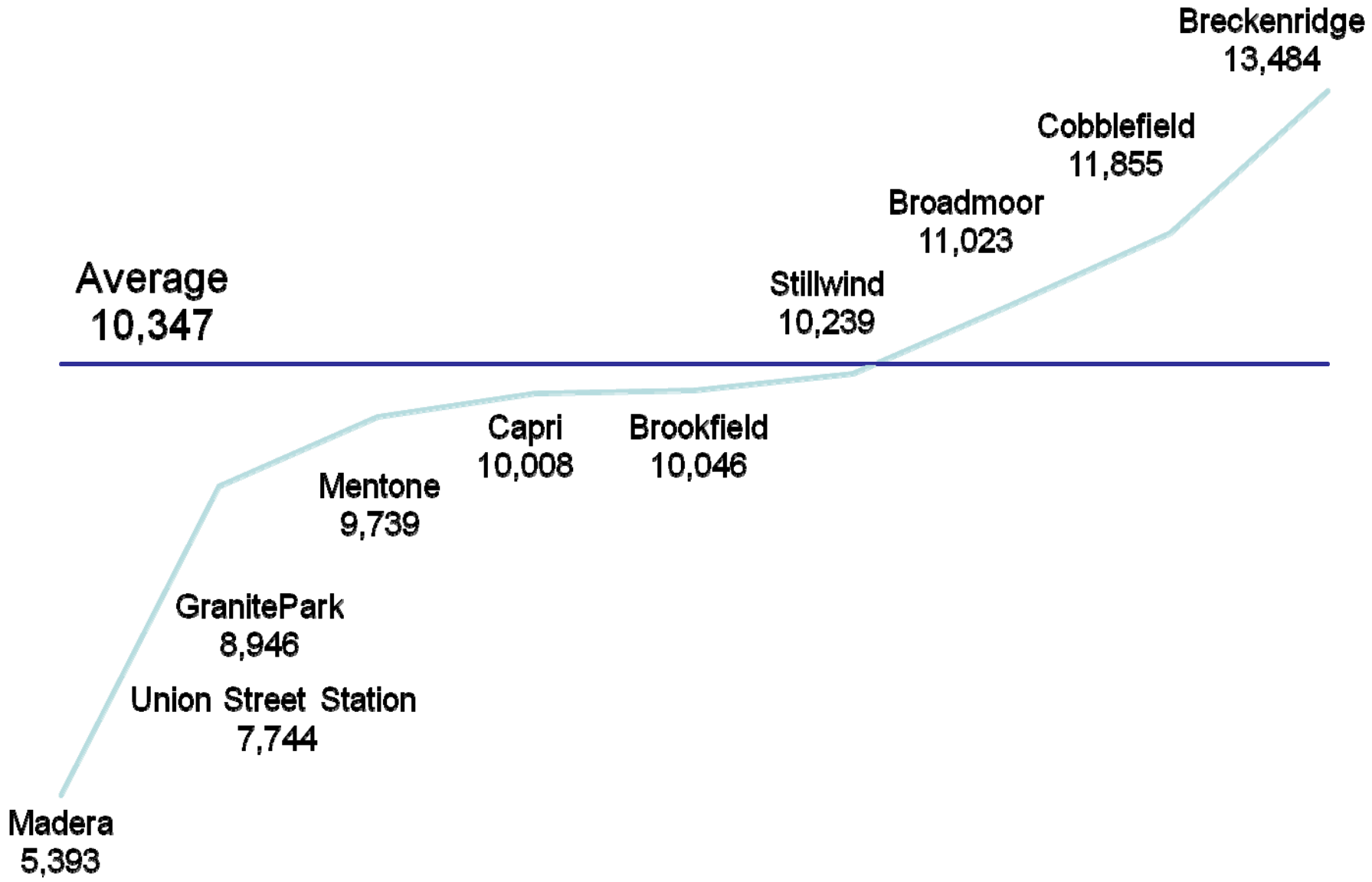
This notice is provided to you by an individual certified by the Florida Department of Community Affairs to perform a building energy rating evaluation. Any questions, comments, or complaints regarding the person or Agency performing this service may be directed to the Florida Department of Community Affairs, Building Energy Rating System Program, 2555 Shumard Oak Boulevard, Tallahassee, Florida, 32399-2100, 850-487-1824.

NOTES:
[1]The HERS Reference Home is constructed to comply with the 1992 CABO Model Energy Code (MEC) at a HERS score of 80 or greater.
[2]The home builder must have signed a Memorandum of Understanding with EPA as an Energy Star Homes partner.
[3]Home Energy Rating Systems (HERS) Score calculated in accordance with NASEO Technical Guidelines.

Madera

Low Impact Landscape

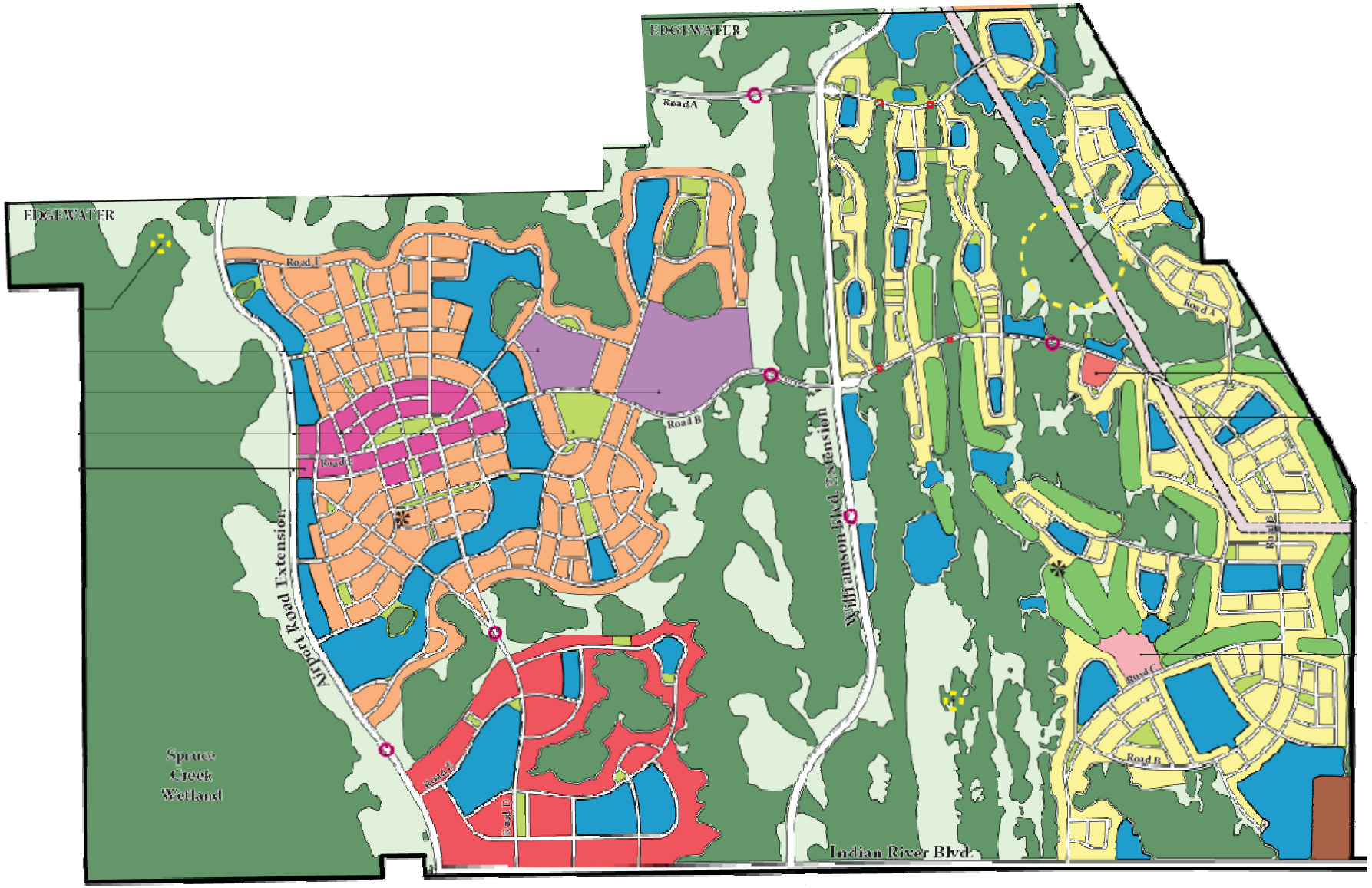
Gainesville, Florida Residential Energy Intensity for 2006 (kWh/1000sf/year)



Restoration

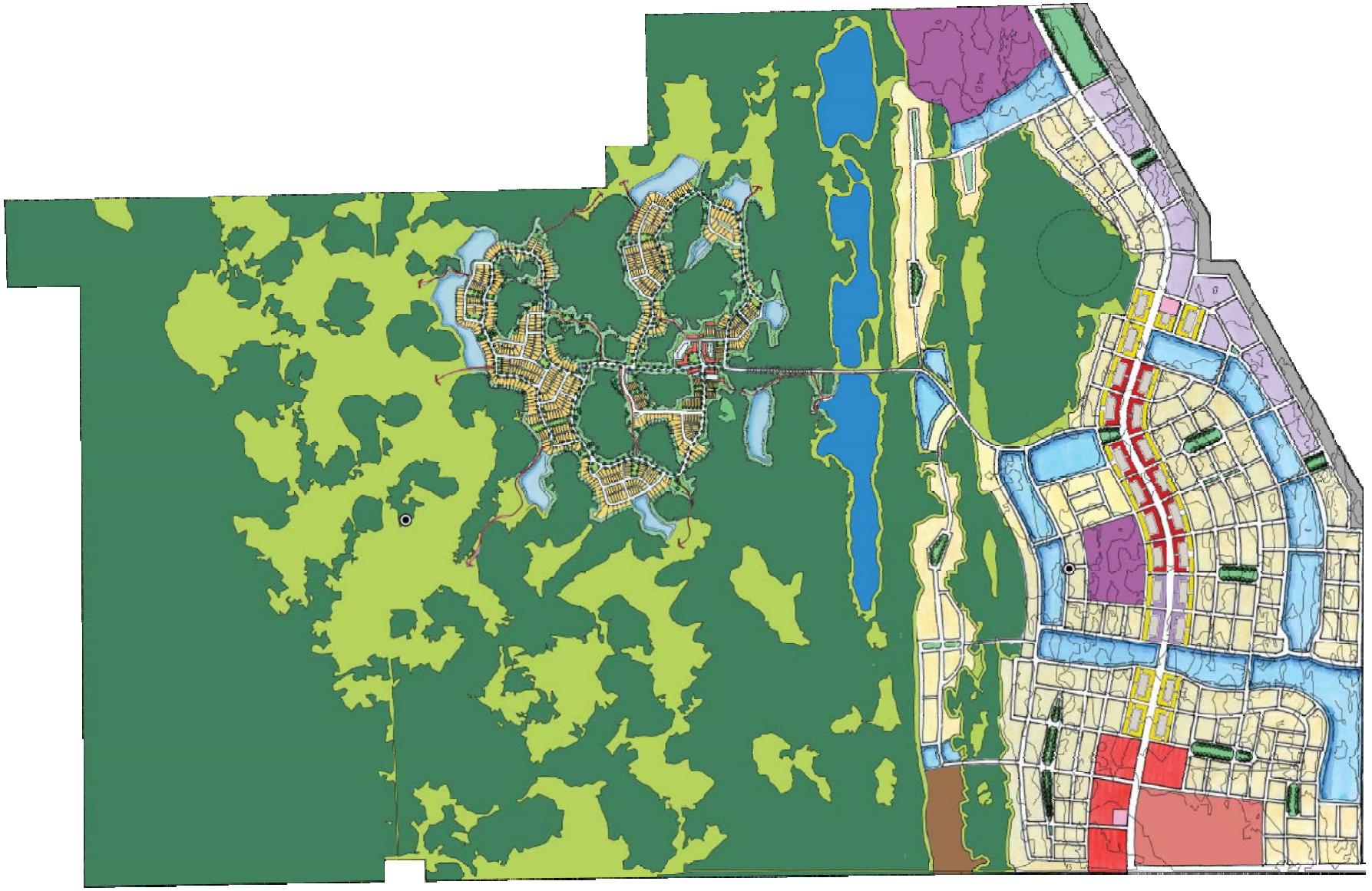
(Direct Consulting)

Restoration



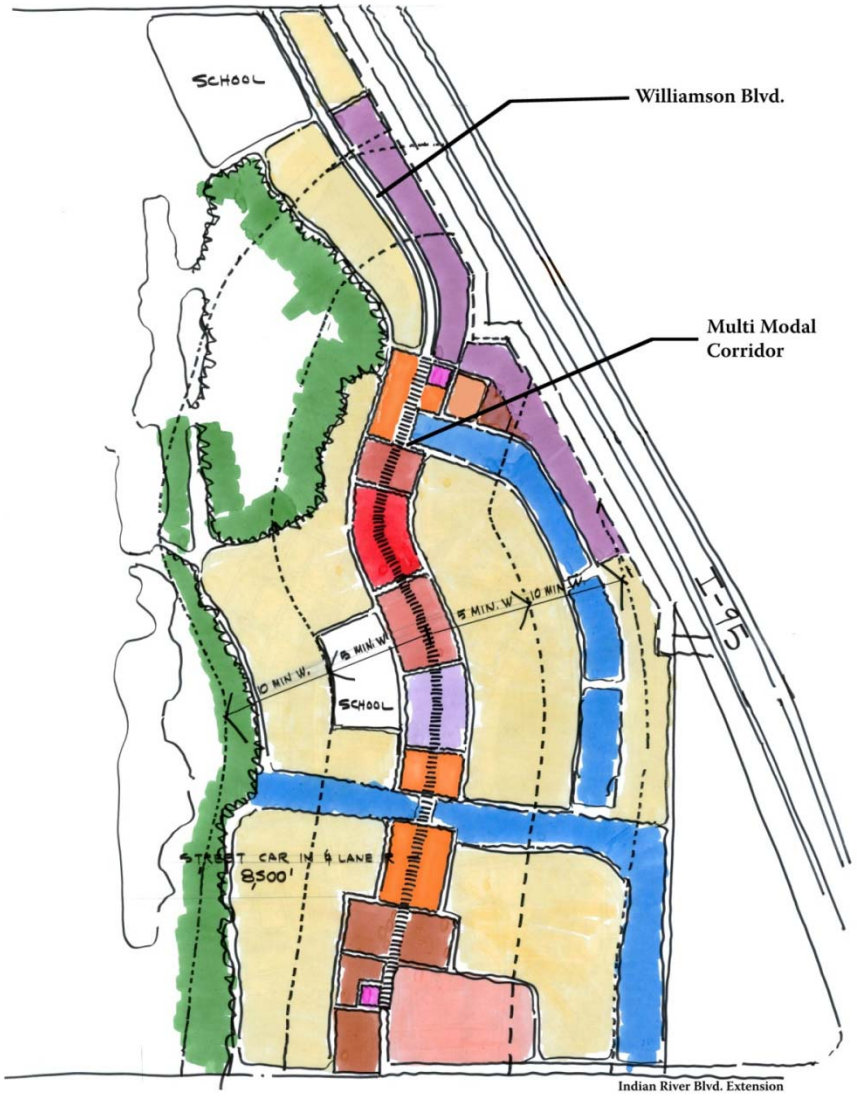
2006 Conventional Site Design

Restoration



2009 Reduced Impact Site Design

Restoration



TRANSIT-READY DESIGN

Water Supply

Restoration DRI Recommendations:

1. Firm water budget specified (95 gal/person/day)
2. Integrated stormwater and reclaimed irrigation water supply system
3. Smart irrigation systems required
4. Use of the "*Field Guide to Soil Moisture Sensor Use in Florida*"
5. Florida Water Star required
6. Overall compact design – increased proportion of community landscapeable areas

Water Quality

Restoration DRI Recommendations:

1. Source Control – addresses linkage between landscape fertilization practices and water quality impacts
2. Ecologically Enhanced Stormwater Basins – applies an additional layer to the conventional treatment train
3. Overall Compact Design – reduces edge effects and creates opportunity for more effective water treatment in retained natural areas

Energy

Restoration DRI Recommendations:

1. Required use of Energy Star reflective roofing products; Pre-plumbing and Pre-wiring to roof deck for solar thermal and photovoltaics
2. Ductwork and air handlers in conditioned space
3. All residential units will achieve a HERS Index Score of 70 or less to meet the USDOE Builder Challenge program
4. Overall Compact Design – more multi-story and attached housing

Summary

Summary

Extension Program Opportunities:

- Conventional development practices are failing
- Tested, better practices are available
- Plenty of room to improve quickly
- Developers are not resistant
- Time is of the essence

Program for Resource Efficient Communities
University of Florida
352-392-8074
piercejones@ufl.edu

Water Quality