

WEKIVA BASIN ONSITE SEWAGE TREATMENT AND DISPOSAL RULE PROPOSAL  
Bureau of Onsite Sewage Programs  
Division of Environmental Health  
Florida Department of Health

## Rumors!

- Everyone must replace their septic system with a \$15,000 system even if it is working.
- The new rules are final and about to go into effect.
- We want the entire area sewerred.

## Why Do We Care About Onsite Wastewater Treatment and Disposal Systems (OSTDS)?

- 2.5 million OSTDS are used in Florida
- One-Third of the Florida Population Disposes of Wastewater into the Ground.
- 92 % Use Groundwater as their Drinking Water Source.
- We want clean rivers, lakes and beaches to swim in.

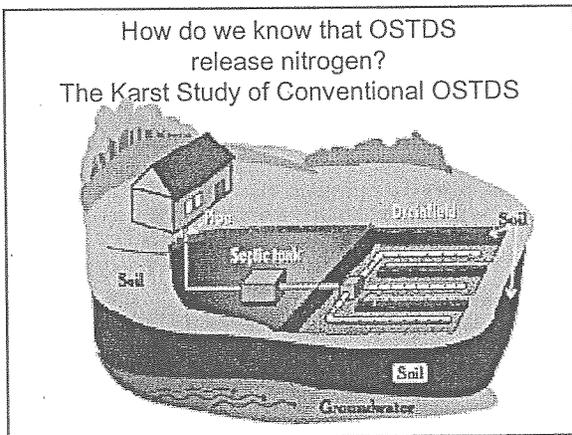
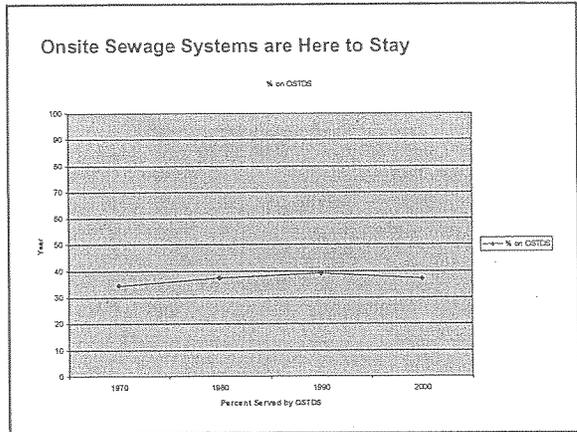
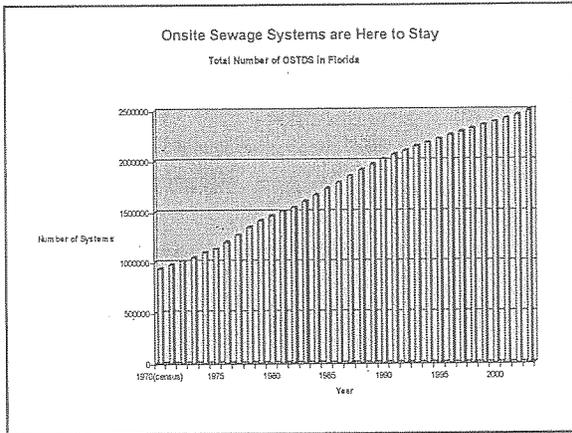
## Department of Health and the Wekiva Protection Issue

- Wekiva Protection Act of the 2004 Legislative Session – directed the Department to study the effectiveness of onsite wastewater systems and if appropriate develop rules that are protective of the public health and the environment (enacted June 29, 2004).
- The Department was added to the Wekiva River Basin Commission.
- Related to the proposed Wekiva Parkway construction.

## What does wastewater have to do with building the Wekiva Parkway?

- Good roads encourage development.
- More development means more septic tanks.
- The proposed routes go through an area with a very sensitive *Karst* environment.
- The Wekiva River has been designated by the National Parks Service as a Wild and Scenic River (P.L. 90-542, as amended) (16 U.S.C. 1271-1287).
- The river and groundwater in the area are interconnected and very sensitive to nitrogen pollution.
- Conventional septic systems release nitrogen.

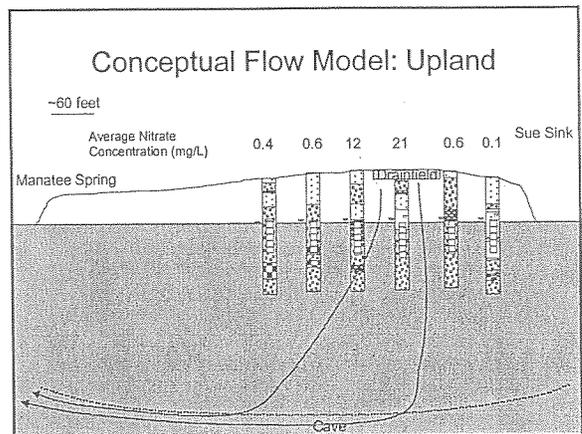
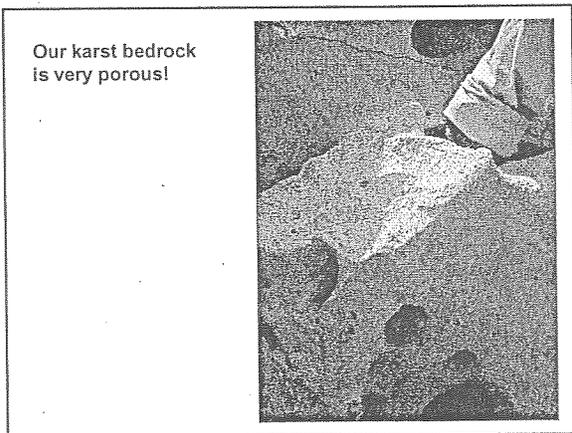


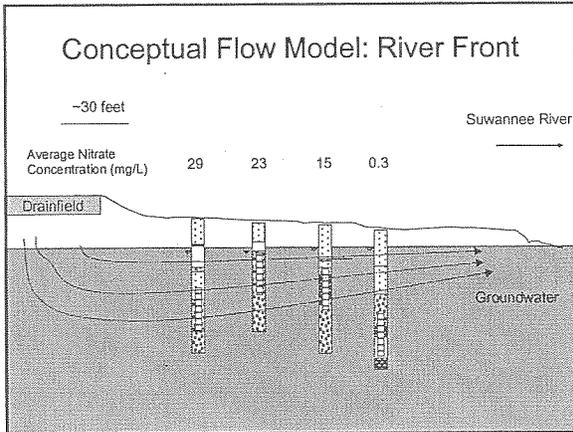


### Karst Study of Conventional OSTDS

- Research at Manatee Springs State Park:
  - Monitoring of Groundwater downstream of two OSTDS for chemical tracers, nutrients and fecal coliforms

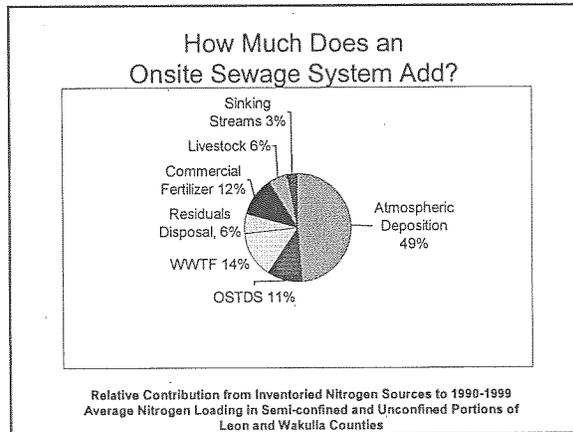
River Front      Upland, on Top of Cave System





### Karst Study Results

- Nitrate concentrations in excess of drinking water standards at many monitoring wells (from 2 to 6 times the 10 mg/L limit) A concern for groundwater **in the future**
- Rapid transport of wastewater tracers into spring through cave system and to wells
- Very good at removing the Germs!



### How Much Does an Onsite System Add?

- About 25 Pounds of Nitrogen per year per household (One large bag of fertilizer).

### Department of Health Rule Proposal to Protect Public Health and the Environment

### What options did we consider and the reject?

- Make no change at all. *Rejected due to adverse impacts on future drinking water supply and the natural environment.*
- Replacing all existing systems with nutrient removal by 2010. *Rejected due to financial burden on the citizens. Densities of OSTDS are not high enough to need immediate action.*
- A higher level of nitrogen removal or treating for both nitrogen and phosphorous. *Rejected due to costs \$18,000 to \$25,000 per system. Also, ecologists advised that nitrogen was the limiting factor.*

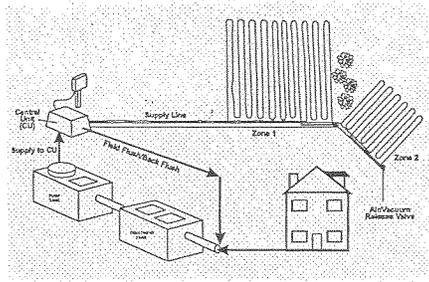
### How Do We Protect Our Waters? Rules being Proposed

- Set a discharge limit of 10 milligrams per liter of total nitrogen for new systems, systems being modified, and for existing systems in the primary and secondary WAVA protection zones. Require the use of drip irrigation drainfields in the primary and secondary WAVA protection zones.
- Prohibit the land-spreading of septage and grease trap waste in the primary and secondary WAVA protection zones. Septage waste would be required to be disposed of at wastewater treatment plants where further treatment is provided.

### The WAVA Map For Nitrogen



### The Proposed Onsite Wastewater System



### Current Treatment Systems Providing Third-Party Data Demonstrating Nitrate Removal to Drinking Water Standards (10 mg/L)

- Biomicrobics, Earthtek and Hoot Aerobic
- [http://www.biomicrobics.com/Products/MicroFAST/about\\_MCF.html](http://www.biomicrobics.com/Products/MicroFAST/about_MCF.html)
- <http://www.earthtekonline.com/evfilter.htm>
- <http://www.hootsystems.com/indextx.html>

Note: Other companies will be added as data is provided

### System Construction and Operating Costs

#### Orange Seminole, Lake County Area Costs

• <b>Conventional system</b>	• <b>Recommended system</b>
Construction \$5,500 to \$7,000	Construction \$7,500 to \$9,000
Average reported to be about \$3400	\$100 operating permit Every 2 years
No operating permit except IM zoned areas or ATUs	\$12 per month electric costs
Routine pumpout service every three years \$225	Maintenance Agreement

### How Do We Protect Our Waters? Recommendations to local Governments

- Evaluate the economic feasibility of sewerage versus nutrient removal upgrades to existing onsite sewage treatment and disposal systems (Onsite Wastewater systems may be cheaper and just as effective)
- Establish new regional wastewater management entities or modify existing ones to oversee the maintenance of all wastewater discharged from onsite sewage treatment and disposal systems in the study area. A model 5 management program is the best approach in Karst areas like the Wekiva Basin.

## System Management

- 5 US EPA Models – Use 4 and 5 for Karst Areas

Models 4 and 5 are designed for sensitive environments where a higher level of performance is needed.

<http://cfpub.epa.gov/owm/septic/guidelines.cfm#7478>

## Management Models 4 and 5

- **Model 4** – a responsible management entity provides professional operational and maintenance (O&M) either by governmental employees or private contractors.
  - Property owners install and own the wastewater treatment system.
  - O&M paid for through routine billing.
- **Model 5** – Same as 4 except...
  - Management entity installs and owns the wastewater treatment system.
  - O&M and future system replacement paid for through routine billing.
  - *System replacements are accounted for in the monthly billing instead of a jump sum (avoiding several thousands of dollars of unplanned expenses). More doable for the homeowner. If the system dies call the management entity and they will replace it.*

## Questions and Comments



## 64E-6.001 GENERAL

(1) The provisions of Part I of this rule shall apply to all areas of the state except where specific provisions found in Part II which specifically addresses the Florida Keys, or specific provisions found in Part IV which specifically address performance-based treatment systems, exempt or modify compliance with Part I or Part II requirements. Performance-based treatment systems are intended as an alternative to the systems conforming to the prescriptive standards detailed in Parts I and II of this rule and shall be used only for a single family residence. Designs for performance-based treatment systems allow for the use of alternative and innovative methods, materials, processes, and techniques that reduce the total biological, chemical, hydraulic, organic, nutrient, bacterial and viral discharge to the environment. Where used, the performance-based treatment systems shall be designed, operated, constructed, maintained and used in conformance with s. 381.0065(4)(j), F.S. Part III addresses the registration of septic tank contractors and certification of partnerships and corporations. Part V addresses fees for Parts I, II, III, and IV of this rule.

All new and repaired systems permitted in the primary and secondary protection zones of the Wekiva Study Area shall:

(a) Utilize a performance-based treatment system with a 10 mg/L total nitrogen discharge limit prior to the drainfield;

(b) Utilize a drip irrigation drainfield installed at a trench depth of 6 inches below the soil surface and:

(c) not exceed a lot flow limit of 1500 gallons per acre per day for site served by water systems regulated under 381.0062 F.S. or, not exceed a lot flow limit of 2,500 gallons per acre day for lots using a public water system as defined in 403.852 F.S.

All new and repaired systems permitted in the tertiary protection zone of the Wekiva Study Area where severely limited soil material below the O horizon is removed shall:

(a) Utilize a performance-based treatment system with a 10 mg/L total nitrogen discharge limit prior to the drainfield.

(b) Utilize a drip irrigation drainfield installed at a trench depth of 6 inches below the soil surface.

(2) through (7) No change

Specific Authority 381.0011(13), 381.006, 381.0065(3)(a), 489.553(3), 489.557(1) FS. Law Implemented 154.01, 381.001(2), 381.0011(4), 381.0012, 381.0025, 381.006(7), 381.0061, 381.0065, 381.0067, 386.041, 489.553, FS. History—New 12-22-82, Amended 2-5-85, Formerly 10-6.41, Amended 3-17-92, 1-3-95, 5-14-96, 2-13-97, Formerly 10D-6.041, Amended 11-19-97, 2-3-98, 3-22-00, 9-5-00, 05-24-04.

## 64E-6.002 DEFINITIONS

For the purposes of this Chapter, the following words and phrases shall have the meanings indicated:

(1) through (58) No change

(59) Wekiva Study area - as defined by XXX F.S.

(59) Renumbered as (60) No change

Specific Authority 381.0011(4),(13), 381.006, 381.0065(3)(a), FS. Law Implemented 154.01, 381.001(2), 381.0011(4), 381.006(7), 381.0061, 381.0065, 381.00655, FS. History—New 12-22-82, Amended 2-5-85, Formerly 10D-6.42, Amended 3-17-92, 1-3-95, Formerly 10D-6.042, Amended 11-19-97, 3-22-00, xx-xx-xx.

## 64E-6.010 SEPTAGE AND FOOD ESTABLISHMENT SLUDGE

(1) through (6) No change

(7) The food establishment sludge and contents from onsite waste disposal systems shall be disposed of at a site approved by the DOH county health department and by an approved disposal method. Untreated domestic septage or food

establishment sludges shall not be applied to the land. Criteria for approved stabilization methods and the subsequent land application of domestic septage or other domestic onsite wastewater sludges shall be in accordance with the following criteria for land application and disposal of domestic septage.

(a) through (i) No change

(j) The land application area shall not be within the Wekiva Study Area or located closer than 3000 feet to any Class I water body or Outstanding Florida Water as defined in Chapter 62-302, F.A.C. or 200 feet to any surface water bodies except canals or bodies of water used for irrigation purposes which are located completely within and not discharging from the site. The land application area shall not be located closer than 500 feet to any shallow public water supply wells, nor closer than 300 feet to any private drinking water supply well. The application area shall be no closer than 300 feet to any habitable building and a minimum of 75 feet from property lines and drainage ditches.

(k) through (v) No change

(8) through (10) No change

Specific Authority: 154.06, 381.0011, 381.006, 381.0065, 489.553 and 489.557 FS. Law Implemented: 154.01, 381.001, 381.0011, 381.0012, 381.0025, 381.006, 381.0061, 381.0065, 381.00655, 381.0066, 381.0067, 386.041, FS. History: New 12-22-82, Amended 2-5-85, Formerly 10D-6.52, Amended 3-17-92, 1-3-95, 5-14-96, Formerly 10D-6.052, Amended 3-22-00, 05-24-04, xx-xx-xx.