

PHASE 2 FUNDING FOR SEPTIC TANK NITROGEN REDUCTION STUDY

Key Issues:

- There are presently 2,671,884 existing onsite sewage treatment systems in Florida, according to the Florida Department of Health (DOH).
- In recent years, the DOH has proposed rulemaking in the Wekiva springs watershed area of the state that would have established new strict nitrogen limitations for existing and new onsite systems. Such a proposal, which has not been adopted to date, would have had the effect of mandating high performance treatment technology for onsite systems, thereby at a minimum, doubling or significantly increasing the cost of onsite sewage treatment systems in Florida.
- More recently, nitrogen issues have swept the nation and the state and are no longer just a DOH concern.
- For example, earlier this year, the federal government announced that it would mandate on Florida, federal numeric nutrient criteria for all Florida water bodies, including numeric nutrient criteria for nitrogen and phosphorous for all lakes, streams and springs. DEP has also recently announced that, regardless of federal action, they will enact numeric nitrogen criteria for all Florida water bodies and springs by early next spring, if not sooner. These new criteria will surely translate sooner than later into permitting standards for onsite sewage treatment systems imposed on Florida residents by various levels of government. The threat of the imposition of new cost-prohibitive nitrogen standards is to all Florida homeowners on septic tank systems. And it is coming not just from the state DOH, but from federal mandates by the EPA to be implemented through a variety of state agencies, including DEP and local governments.
- FHBA, Florida Realtors and Associated Industries of Florida's response has been to argue for the development of cost-effective technological solutions for builders and homeowners, such as passive technologies that are not yet proven in Florida, to address nitrogen issues from onsite systems in a reasonable fashion that does not unduly burden Florida's citizenry and businesses.
- In 2008, legislation was adopted that directed a 3-Phase study be commenced. The first phase, now completed, was to determine appropriate nitrogen reduction technologies and strategies to field-test after a comprehensive review of the literature, and selected and prioritized sites for field testing. The second phase will field-test different technologies and strategies in a variety of soils and locations throughout the state in both wet and dry seasons. The third phase will conclude monitoring and recommend concrete cost-effective options for homeowners to use in onsite system retrofits for nitrogen reduction.

Florida Onsite Sewage Nitrogen Reduction Strategies (FOSNRS) Study

WHY IT NEEDS TO BE COMPLETED

April 8, 2010

FOSNRS PROJECT GOAL:

The FOSNRS Project is being conducted to develop nitrogen reduction strategies for onsite sewage treatment and disposal systems (OSTDS) in the State of Florida. This will be accomplished by linking nitrogen reduction treatment technology to water quality objectives for Florida surface and groundwater systems through development of a planning tool that allows nitrogen reduction levels, system density, and site specific factors such as soil and groundwater to be used to define OSTDS treatment requirements for a given area.

FOSNRS PROGRAM OBJECTIVES:

- A) To develop and test passive treatment technologies for nitrogen reduction that complement the use of conventional onsite sewage treatment and disposal systems;

- B) To evaluate the performance and costs of these technologies at actual homes in Florida;

- C) To assess the fate and transport of nitrogen discharged to the environment by OSTDS in Florida so as to be able to estimate surface and groundwater quality impacts; and

- D) To develop a simple tool that will allow the knowledge gained from the previous objectives to be used to make decisions on nitrogen reduction levels necessary to protect water quality in a given watershed, or location.

PROJECT FUNDING STATUS:

The project was awarded in late January, 2009, and was based on a budget of \$5 M over a 3 – 5 year project timeframe. The project began in February 2009 with an initial budget of \$900,000 for the first phase of 3 anticipated phases of funding. The first phase of funding will complete most of objective A, and will allow development of testing protocols, establishment of a test facility, and preliminary testing of pilot scale passive nitrogen reduction systems. This testing will lead to the development of design criteria for full-scale testing at homes in Florida. Phase 2 funding is needed from the 2010 legislative session to implement the ideas developed in Phase 1, and to begin the soil and groundwater monitoring for objective C.

Phase 3 funding will be needed from the 2011 legislative session to complete all monitoring and other field activities, to develop a simple planning tool for nitrogen reduction decision-making, and to finalize a recommended onsite sewage nitrogen reduction strategy for Florida's future.

PROJECT TEAM:

The project team led by Hazen and Sawyer, P.C., includes some of the most knowledgeable and respected engineers and scientists in the onsite wastewater field, including:

Damann L. Anderson, P.E. – Mr. Anderson is project manager for this project and has over 30 years of experience in planning, research, and performance assessment of onsite wastewater treatment systems. Damann is known throughout Florida for his expertise in onsite wastewater treatment and was project manager for the first Florida Onsite Sewage Disposal System Research project from 1986 – 1993, as well as the Florida Keys Onsite Wastewater Nutrient Reduction Systems (OWNRS) Demonstration project conducted from 1996 – 2000, and numerous other Florida onsite wastewater research projects over the past 24 years.

Dr. Richard Otis, P.E. – Dr. Otis is known throughout the world for his work with onsite wastewater treatment systems over the past 40+ years. Dick was the primary author of the first U.S. EPA design manual for Onsite Wastewater Treatment as well as a principal author of the latest version of this manual, used by engineers, scientists, and public health officials nationwide. He has been a project team member on much of the onsite wastewater research conducted in Florida and elsewhere.

Dr. Daniel Smith, P.E. – Dr. Smith is an engineer and researcher with nearly 25 years experience in wastewater treatment process design and performance. Daniel's work on the recent Passive Nitrogen Reduction Systems study for FDOH showed excellent nitrogen reduction results for lab scale passive systems and led to the proposal by this project team to further the development of these systems to allow their use in Florida.

Dr. Robert L. Siegrist, P.E. – Dr. Siegrist is one of the nation's leading researchers in the onsite wastewater field over the past 35 years, and has advanced the knowledge of wastewater treatment by soil and granular media considerably in his research. Bob leads the onsite wastewater research team at the Colorado School of Mines, and has conducted research on all aspects of onsite wastewater treatment, including nitrogen reduction, and was a team member on previous Florida onsite research projects.

Dr. John McCray, P.E. – Dr. McCray is one of the leading researchers in the nation on the impacts of onsite wastewater treatment systems on groundwater quality. John is an engineer and hydrologist and has extensive expertise in the development of models for evaluating and predicting the fate of pollutants in the environment, and has published numerous peer reviewed research papers on the results of his work. He has a special interest in nitrogen due to its growing concern as a pollutant across the nation.

THE FOSNRS PROJECT IS UNIQUE AND NEEDED:

While there are several previous studies have briefly evaluated onsite wastewater nitrogen treatment technologies, the FOSNRS project is the only project past or present that will address the development of nitrogen reduction strategies for onsite sewage treatment and disposal systems (OSTDS) in the State of Florida. This will be accomplished by linking nitrogen reduction treatment technology to water quality objectives for Florida surface and groundwater systems through development of a planning tool that allows nitrogen reduction levels, system density, and site specific factors such as soil and groundwater to be used to define OSTDS treatment requirements for a given area. This is what is needed in Florida to assist planners, homeowners, and manufacturers in meeting the increasingly stringent treatment standards for onsite wastewater systems. With the recent development of numeric nutrient criteria for Florida water bodies, it is more critical than ever to have not only the treatment technology, but the tools and methodology to properly apply that technology for nitrogen reduction decision-making, and to finalize a recommended onsite sewage nitrogen reduction strategy for Florida's future.

Septic Tank Study Budgetary Proviso or Language for the Implementing Bill
for 2010 for Representative Scott Plakon -- drafted 3-31-10

In order to implement specific appropriation _____ of the 2010-2011 General Appropriations Act, and for the 2010-2011 fiscal year only, notwithstanding any law to the contrary, a state agency may not adopt or implement a rule or policy that:

- (a) Mandates, establishes or implements any new nitrogen reduction limits or standards that apply to existing or new onsite sewage treatment systems or any modification of such systems;
- (b) Directly requires or has the indirect effect of requiring the use of performance-based treatment systems or any similar technology; or,
- (c) Increases the cost of treatment for nitrogen reduction from onsite sewage treatment systems,

before Phase 2 of the study is completed.

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