



**Florida Department of Health
Bureau of Onsite Sewage Programs
Research Review and Advisory Committee Meeting**

DATE AND TIME: December 10, 2010 at 10:00 a.m. EST

PLACE: Gulf Coast Research and Education Center (GCREC)
14625 County Road 672
Wimauma, FL 33598
813-634-0000

Or via conference call / web conference:

Toll free call in number: 1-888-808-6959

Conference code: 1454070

Website: <http://connectpro22543231.na5.acrobat.com/rrac/>

This meeting is open to the public

AGENDA: FINAL

1. Introductions and Housekeeping
2. Review Minutes of Meeting November 5, 2010
3. Nitrogen Study Interim Legislative Report & Project Update
4. Research Priorities Workshop
5. Other Business
6. Public Comment
7. Closing Comments, Next Meeting, and Adjournment

There will be a tour of nitrogen research test center at the GCREC facility, starting at 1 p.m., after the meeting has adjourned, for all interested parties.

Research Review and Advisory Committee for the Bureau of Onsite Sewage Programs

Draft Minutes of the Meeting held at the Betty Easley Conference Center, Tallahassee, FL
November 5, 2010

In attendance:

- **Committee Members and Alternates:**

- In person:**

- Bob Himschoot (member, Septic Tank Industry)
 - Bill Melton (member, Consumer)
 - Eanix Poole (alternate, Consumer)
 - Patti Sanzone (member, Environmental Interest Group)
 - Clay Tappan (chairman, member, Professional Engineer)

- Via teleconference:**

- Quentin (Bob) Beitel (alternate, Real Estate Profession)
 - Kim Dove (member, Division of Environmental Health)
 - Tom Higginbotham (alternate, Division of Environmental Health)
 - Kriss Kaye (alternate, Home Building Industry)
 - Carl Ludecke (vice-chairman, member, Home Building Industry)
 - Jim Peters (alternate, Professional Engineer)
 - John Schert (member, State University System)
 - Pam Tucker (member, Real Estate Profession)

- Absent members and alternates:**

- Sam Averett (alternate, Septic Tank Industry)
 - John Dryden (alternate, State University System)
 - Geoff Luebkekmann (member, Restaurant Industry)
 - Mike McInarnay (alternate, Septic Tank Industry)
 - Susan McKinley (alternate, Restaurant Industry)
 - Jim Oskowis (member, Local Government)
 - Vincent Seibold (alternate, Local Government)

- **Visitors:**

- In person:**

- Damann Anderson (Hazen and Sawyer)
 - Robert Arredondo (DCA)
 - Josefin Edeback (Hazen and Sawyer)
 - Raoul Fernandes (FSU)
 - Richard Hicks (DEP)
 - Paul Lee (DEP)
 - Fernando Rios (FSU)
 - Shanin Speas-Frost (DEP)
 - Ellen Vause (Florida Septic, FOWA)
 - Liying Wang (FSU)
 - Ming Ye (FSU)

- Via teleconference:**

- Neil Campbell
 - Kim Dinkins (Marion County)
 - Dana _____ (unidentified)
 - Daniel Dooley (Marion CHD)
 - Sarah Fowler
 - Bruce French (York)
 - Karl Henry (Seminole CHD)
 - Daniel Smith (AET)
 - Ron Suchecki (Hoot Systems)
 - Marty Wanielista (UCF)

- **Department of Health (DOH), Bureau of Onsite Sewage Programs:**

- In person:**

- Kara Loewe, Distributed Computer Systems Consultant
 - Eberhard Roeder, Professional Engineer
 - Elke Ursin, Environmental Health Program Consultant

- Via teleconference:**

- Paul Booher, Professional Engineer
 - Kim Duffek, Environmental Health Program Consultant

1. **Introductions** – Eight out of ten groups were present, representing a quorum. Chairman Tappen called the meeting to order at 9:35 a.m. Introductions were made and some housekeeping issues were discussed.
2. **Review of Previous Meeting Minutes** – The minutes of June 10, 2010 were reviewed.

Motion by Carl Ludecke and seconded by Bill Melton to approve the minutes. All were in favor with none opposed and the motion passed unanimously.

3. **DEP Nitrogen Modeling Presentation** – Dr. Ming Ye, with Florida State University (FSU) provided an introduction on the nitrogen modeling study that they are doing for DEP. They are developing a GIS-based software program for estimating nitrate fate and transport in surficial aquifers from septic systems to surface water bodies. Rick Hicks gave an overview of the project. This is a two-year project that is about half completed. Paul Lee provided the project background, motivations, and objectives. The goal of the project is to develop a scientifically defensible and user-friendly GIS-based simplified model that is ultimately to be available in public domain. Dr. Ye presented on the development of groundwater flow and nitrate fate and transport models. It was stressed that this model is just an estimate; it is a static model and is not site specific. The groundwater table was estimated based on the topography. Fernando Rios gave a real-time demonstration of how the GIS-based software works. Dr. Ye ended the presentation outlining the remaining research to be done for the grant and what future research is needed. Paul Lee requested input and feedback from the RRAC on the project. A question was asked to Damann Anderson about how this study impacts the nitrogen study, and he said that there is a good opportunity for collaboration on this. Eberhard Roeder stated that some of the nitrogen study work will go into developing soil treatment numbers which could then go into this model. John Schert provided the name and link to a study for the researchers to review. A copy of the presentation made at this meeting is available on the Department's website.

4. **Nitrogen Study**

- a) **Discussion on draft legislative report** – Elke Ursin introduced the study. The interim legislative report, as outlined in the legislative language in this year's budget, is due on February 1, 2010 and will need to be routed internally at least a month prior to be completed on time. The main change from previous similar reports is that it is much shorter, keeping to the high level overview of the project and pointing readers to the website to find more detailed information. Patti Sanzone stated that she would like to see more detail on what has been accomplished, what is remaining to be done with the current funding, and what additional funding will be used for. She suggested adding in more details like the number of field sites, the number of samples, etc. Pam Tucker suggested adding in the legislative language. Bob Himschoot wanted a strong case to be made for needing the money. John Schert requested that staff get with the budget office to see what funds were submitted to the governor and what the proposed cuts are.

John Schert made a motion, seconded by Bob Himschoot, to have staff send a memo to the Department of Health budget office and cc: the Surgeon General, to ask for the budget numbers earmarked for the nitrogen study and what is proposed to be cut. All were in favor, none opposed, and the motion passed.

A conference call meeting will be scheduled for sometime in December to discuss the revised legislative report.

- b) **Comment on deliverables and next steps** – Elke Ursin gave an overview outlining what has happened since the last meeting. A lot of work has occurred since the last meeting, and numerous reports were sent in the meeting material packets. There have been two sampling events at the passive nitrogen reduction system phase II test site. The flow rates to all the

biofilters were within 10% of the target. Nine out of ten stage 1 unsaturated biofilters with ammonia of 0.01 mg/L or less. Seven out of nine Stage 2 saturated biofilters had a nitrate level of 0.17 mg/L or less. Recommendations to tweak the facility are outlined in the report and are being addressed between DOH and Hazen and Sawyer. The contract amendment to add change-order allowances is being executed. The latest progress report was also discussed. A tour of the GCREC test facility will be held on December 10th at 1 p.m. An attempt to combine this with the next RRAC meeting will be made.

5. DEP Studies on OSTDS Nutrient Removal

- a) **Bold and Gold Study** – Dr. Marty Wanielista presented on the UCF research study on passive, cost-effective OSTDS, which is ending in December. An overview of the project was given. Several questions were answered. RRAC was directed to submit any comments on this report to Dr. Wanielista. A copy of this presentation is available on the Department's website.
- b) **Wakulla PBTS Study by DEP/FSU** – Richard Hicks provided a brief overview of the study, where effluent was monitored monthly at 7 performance-based systems in Wakulla County. The field work is completed and an interim report was available about a year ago and the final report should be completed by the end of the year. When the final report is available it will be sent to the RRAC.

6. **Update on Study of Performance of Advanced Systems in Florida** – Elke Ursin gave an update on the status of this study. A request for a no-cost time-only extension until September 2011 was submitted with the quarterly progress report in October. The possibility of shifting some funds between different categories is being looked into. The draft summary report for the Monroe County portion of this project is being written. Bill Melton asked if any sampling has been done on this project and Elke Ursin said that there has not due to delays in getting the quality assurance project plan (QAPP) completed. The database is mostly complete and identifies 16,802 advanced systems in the state. Summary statistics are being developed. The database includes detailed system information to allow for analysis of many different items. An evaluation of each of the systems that are selected for sampling will be done that is similar to what is scored by the program evaluators when they do their county evaluations. Surveys were sent to various interest groups and the results are being tabulated and analyzed. Currently, an intern is working on analyzing the open ended questions in the surveys for any trends. A table showing the response rate was discussed. Some of the preliminary survey results for the installers and the regulators were discussed. The QAPP for the sampling portion of this project is being finalized. The contract with the lab to evaluate the samples has been executed. Permit file reviews on the selected systems is ongoing. Staff is evaluating the possibility of using county health department staff in different regions to help with the sampling effort. An evaluation tool to look at management practices is being developed as this project continues.

7. **Town of Suwannee Study** – This study is mostly complete. The final report was submitted and was included in the meeting packet. They also wrote a draft journal manuscript, which was included in the packet. Send comments to Elke Ursin by the end of November so that this can be finished. There was a discussion on the use of fecal coliforms as indicator bacteria, and whether that is an appropriate indicator.
8. **Discussion on Continuation of Inventory of OSTDS** – A website showing the results of this inventory has been developed and is up and running for the public to access. The website is: <http://gis.doh.state.fl.us/FLWasteWater/default.aspx>. RRAC directed staff at the last meeting to get with Gerald regarding the direction for the inventory. Gerald has indicated that he would like the inventory to continue. There appears to be a lot of interest in keeping this inventory up-to-date. Shanin Speas-Frost asked if there was anything that DEP could do to help with gathering the WWTP data, and Elke Ursin indicated that this would be very helpful. Elke Ursin asked how the RRAC would like to move forward with this project and presented some proposed next steps,

including updating the Environmental Health Database, updating the data with the latest Department of Revenue information and figuring out a method of automating this task, updating the database with the latest DEP data on permitted wastewater treatment plants (WWTP), resending out letters to the WWTP requesting customer information to update the database, and using county health departments to resolve some of the unknowns. Bob Himschoot recommended coordination between DOH and Carmody to consolidate information. The RRAC directed staff to include this project on the list of potential projects to be prioritized at the next RRAC meeting.

- 9. Alternative Drainfield Products Discussion** – Availability of data on the longevity and effectiveness of alternative drainfield projects is limited. At the last RRAC meeting RRAC directed staff to wait to see what is going to happen with the SB 550 inspection program to see if there could be any overlap in the data that is collected. At this point it does not look like alternative drainfield products will be included in the inspection. Elke Ursin presented a scope of work and wanted to hold off developing a detailed budget until RRAC directs staff on what they would like to see be done. Three different phases were proposed. Phase I would be performing an evaluation of existing data and the cost of this phase would be staff time. Phase II would be creating an advisory group with product manufacturers, contractors, and CHD's to get an idea of how to gather the information gaps found after Phase I. Phase III would be to go out and gather the data to fill in the data gaps. Staff was given the go-ahead to start with Phase I, doing it in-house with minimal cost. Once the data gaps are identified then the direction on how to move forward with this project can be scoped out.
- 10. Other Business** – Elke Ursin brought up that the pollution prevention grant proposal that was submitted on April 5, 2010 was not awarded. This project will be included on the list of proposed research priorities to be discussed at the next RRAC meeting.

Eanix Poole brought up a potential research project to look into the effectiveness of outlet filters. Outlet filters started to be required in tanks in the early 1990s. These filters often clog, which leads to unnecessary pumpouts. He suggests a study to look at what works and what does not work, even looking at the differences between different types of outlet filters. Bob Himschoot stated that a filter can go 12-36 months before needing to be cleaned. The smaller the screen the more easily it is clogged. He stated that clogging was a good thing, which means the filter is keeping solids out of the drainfield. Eanix Poole stated that this may be something that SB 550 takes care of, and Elke Ursin stated that this is one of the items on the inspection form.

- 11. Public Comment** – The public were allowed to comment throughout the meeting. There was no additional public comment.
- 12. Closing Comments, Next Meeting, and Adjournment** – The next meeting will be scheduled for December 10th at 10 a.m. at the GCREC and as a teleconference. Those attending the meeting in person have an opportunity to tour the test facility at the GCREC site. The focus of the next meeting will be to discuss the RRAC priorities and the draft interim legislative report.

Bill Melton made a motion to adjourn, seconded by Patti Sanzone, and the meeting adjourned at 2:08 p.m.

Florida Department of Health
Research Review and Advisory Committee for the Bureau of Onsite Sewage Programs

Approved Minutes of the Meeting held at the Gulf Coast Research and Education Center, Wimauma, FL
December 10, 2010

In attendance:

- **Committee Members and Alternates:**

- In person:**

- Sam Averett (alternate, Septic Tank Industry)
 - Tom Higginbotham (alternate, Division of Environmental Health)
 - Bob Himschoot (member, Septic Tank Industry)
 - Kriss Kaye (alternate, Home Building Industry)
 - Patti Sanzone (member, Environmental Interest Group)
 - Clay Tappan (chairman, member, Professional Engineer)

- Via teleconference:**

- Quentin (Bob) Beitel (alternate, Real Estate Profession)
 - Kim Dove (member, Division of Environmental Health)
 - Carl Ludecke (vice-chairman, member, Home Building Industry)
 - Bill Melton (member, Consumer)
 - Pam Tucker (member, Real Estate Profession)
 - Vincent Seibold (alternate, Local Government)

- Absent members and alternates:**

- John Dryden (alternate, State University System)
 - Geoff Luebkekmann (member, Restaurant Industry)
 - Mike McInarnay (alternate, Septic Tank Industry)
 - Susan McKinley (alternate, Restaurant Industry)
 - Jim Oskowis (member, Local Government)
 - Jim Peters (alternate, Professional Engineer)
 - Eanix Poole (alternate, Consumer)
 - John Schert (member, State University System)

- **Visitors:**

- In person:**

- Damann Anderson (Hazen and Sawyer)
 - Josefin Hirst (Hazen and Sawyer)
 - Don Orr (ADS, FOWA)
 - Maria Pecoraro (Rep. Nelson)
 - Steven Rowe (Big River Ind.)
 - Daniel Smith (AET)

- Via teleconference:**

- Sarah Fowler
 - Mary Howard (Orange County Health Department)

- **Department of Health (DOH), Bureau of Onsite Sewage Programs:**

- In person:**

- Elke Ursin, Environmental Health Program Consultant
 - Paul Booher, Professional Engineer

- Via teleconference:**

- Kim Duffek, Environmental Health Program Consultant
 - Eberhard Roeder, Professional Engineer

1. **Introductions** – Eight out of ten groups were present, representing a quorum. Missing the State University System and the Restaurant Industry. Chairman Tappan called the meeting to order at 10:05 a.m. Introductions were made and some housekeeping issues were discussed.

Florida Department of Health
Research Review and Advisory Committee for the Bureau of Onsite Sewage Programs

2. **Review of Previous Meeting Minutes** – The minutes of November 5, 2010 were reviewed with some modifications/corrections made.

Motion by Bob Himschoot and seconded by Patti Sanzone to approve the minutes as amended. All were in favor with none opposed and the motion passed unanimously.

3. **Nitrogen Study**

- a) **Unfinished business** – At the November 5, 2010 meeting, RRAC made a motion to send a memo to the Department's budget office regarding the budget numbers for the nitrogen study and to determine what was earmarked to be stricken from the budget. The intent was to clarify what DOH has requested for budget authority for this study. This was discussed internally and clarification was made that historically the mechanism for requesting budget authority for the nitrogen study is through the progress report that is sent to the Florida Legislature and Governor. After discussion with Gerald Briggs, he did not know of anything that would be earmarked as to be stricken in the DOH budget regarding this project. DOH did request budget authority for the remaining balance of the already appropriated funds. As far as is known, DEP submitted for \$1-million in their budget for this project. Bob Himschoot wanted to see a breakdown of how much has been budgeted, how much has been spent, and how much is remaining. Damann Anderson indicated that the contract, which is on the Department's website, shows the budget for the project with deliverables and costs. Elke Ursin indicated that along with all invoices that are routed for payment, there is a spreadsheet which shows this information. Clay Tappan indicated that there is a summary table in the draft legislative report showing which deliverables have been completed, which are currently planned, and which are dependent on future funding.
- b) **Discussion on draft legislative report** –The interim legislative report, as outlined in the legislative language in this year's budget, is due on February 1, 2011 and will need to be routed internally at least a month prior to be completed on time. The revised report, based on the last meeting, was discussed. More detail was requested on Table 1 to show the budgeted amount for each of the tasks, how much total budget is currently appropriated, and how much remaining budget is needed. Other topics were discussed regarding modifications suggested to be made to the draft legislative report.

Bill Melton made a motion, seconded by Bob Himschoot, to follow the following protocol in getting the legislative report finalized:

- **Comments on the report are to be sent to Elke Ursin by close of business Monday December 13th.**
- **Comments will be compiled along with comments made at this meeting and sent to the RRAC on Tuesday December 14th as two pdf's (a final version and one with tracked changes).**
- **Votes will be emailed back to Elke Ursin by close of business on Thursday December 16th as either yes, no, or contingent. If a RRAC voting member does not respond this will be considered as a yes vote. Any contingent comments will be sent to RRAC. Once majority approval has been reached, the vote will be final.**

All were in favor, none opposed, and the motion passed.

Florida Department of Health
Research Review and Advisory Committee for the Bureau of Onsite Sewage Programs

- c) **Comment on deliverables and next steps** – Elke Ursin gave an overview outlining what has happened since the last meeting. For Task A, a draft scope for proposed modifications for the Passive Nitrogen Removal Study Phase II (PNRS II) was submitted to staff, an authorization to proceed was given, and the modifications have been completed. Some additional small columns were constructed to provide information for the mini-mound component, and additional sampling will be associated with these columns. There will also likely be a process modeling component for PNRS II as well. Damann Anderson provided some information on how the PNRS II is set-up at the research facility and some of the overall project goals to address some questions from the RRAC. The Task B process forward meeting minutes and final QAPP was submitted to the Department. Home sites are currently being identified for Tasks B & C with plans to install one of the available passive technologies at a home site in Wakulla County. Instrumentation and monitoring of a Task C home site has begun in Wakulla County. The instrumentation and monitoring network for the GCREC mound was completed and monitoring/sampling has begun. The Task D scope and budget is being reworked to align with the QAPP. DOH staff gave the go-ahead to start the soil modeling work as per RRAC direction at a previous meeting.
4. **Research Priorities Workshop** – The basic process to get the ranking done as quickly and efficiently as possible was outlined. Everyone is to brainstorm up to 5 ideas for potential research projects. Then each person will recite his or her responses which will be written down by staff. Then a group discussion will occur to clarify and discuss the potential research projects. Then each person will select and rank the top 5 ideas. Finally, the rankings will be tallied and reported to show the final RRAC selection and ranking for research priorities. During the brainstorming process, RRAC shall consider studies that are related to human health, performance of onsite systems, and environmental impacts from onsite systems. After brainstorming, Elke Ursin asked each RRAC member to list their ideas. Several of the projects were explained in more detail. Eberhard Roeder provided an explanation of one of the projects that had to do with a study that Marion County did regarding the average age of failure for onsite systems based on several data sources and looking back at them now to see how many of these systems have failed. He also provided a more detailed explanation for the “designing for maintenance” project and how that project would be to discover ways that might make it easier to maintain systems that work. After some discussion it appeared as if this project might be more of a TRAP issue for known best management practices (i.e. designing a manhole to grade, putting observation ports in the drainfield). Grouping of some of the listed projects was done as well as listing some additional projects. Bob Himschoot suggested that the list should be narrowed down prior to doing the final ranking and prioritization. Patti Sanzone asked what the DOH timeline is for needing these projects ranked. Elke Ursin indicated that just after the June 10, 2010 meeting a budget was submitted requesting funding for several projects (alternative drainfield project, inventory, etc.) just in case they were voted as priorities, so that the budget would be available. This budget request is a placeholder for the funding, and does not require that any specific project be done. She will submit a budget in April/May for the 2011-2012 fiscal year. After further discussion RRAC directed Elke Ursin to email the revised priority list to the RRAC by Tuesday December 14th and RRAC is to send their top 10 projects back to Elke on Thursday December 16th. Once these projects have been screened, then a revised list will be sent to the RRAC prior to the next RRAC meeting.
5. **Other Business** – Bob Himschoot provided an update of SB 550 and how there are several bills being filed to repeal the bill. There is a coalition between home builders, realtors, Florida Chamber of Commerce, and associated industries (FOWA) proposing to keep the septic tank

Florida Department of Health
Research Review and Advisory Committee for the Bureau of Onsite Sewage Programs

pumping and maintenance on a 5-year schedule and removing much of the rulemaking parts and simplifying the bill. Eberhard Roeder gave a quick update on the 319 project indicating that the testing of field procedures will be occurring in the near future. Elke Ursin requested that comments on the Town of Suwannee Journal Manuscript be sent to her as soon as possible. Elke also showed a graph depicting the number of new and repair septic installations on an annual basis. A significant drop in the number of permits has occurred over the past 5 years, as well as a crossing over in 2008 where the number of repairs first starts to outnumber the number of new systems.

6. **Public Comment** – The public were allowed to comment throughout the meeting. There was no additional public comment.
7. **Closing Comments, Next Meeting, and Adjournment** – Potential dates for the next RRAC meeting will be emailed to RRAC members and alternates to determine the next meeting date. It is anticipated that this meeting will occur sometime in March to coincide with the legislative session. The meeting adjourned at 1:30 p.m. A tour of the nitrogen research test center at the Gulf Coast Research and Education Center (GCREC) was conducted after the meeting for all interested parties.



**INTERIM STUDY AND REPORT ON PHASE II OF THE
FLORIDA ONSITE SEWAGE NITROGEN REDUCTION
STRATEGIES STUDY (2010)**

DRAFT December 1, 2010

Bureau of Onsite Sewage Programs

February 1, 2011

Ana M. Viamonte Ros, M.D., M.P.H.
State Surgeon General

Rick Scott
Governor

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DRAFT

INTERIM STUDY AND REPORT ON PHASE II OF THE FLORIDA ONSITE SEWAGE NITROGEN REDUCTION STRATEGIES STUDY (2011)

EXECUTIVE SUMMARY

The Florida Legislature has appropriated a total of \$2.9 million for Phase I and II of an anticipated 3-5 year project with a total estimated cost of \$5 million to develop passive strategies for nitrogen reduction for onsite sewage treatment and disposal systems (OSTDS). This report is submitted in compliance with Line Item 486 Section 3, Conference Report on House Bill 5001, General Appropriations Act for Fiscal Year 2010-2011. Currently, this project is in its third year, and requires an additional \$2.0 million to complete the study.

The significance of this project is that it evaluates and develops strategies to reduce nitrogen impacts from OSTDS regulated by the Florida Department of Health (FDOH). Excessive nitrogen can have negative effects on public health and the environment.

The project has been divided into the following tasks:

- Task A – Technology Evaluation for Field Testing: Review, Prioritization, and Development
- Task B – Field Testing of Technologies and Cost Documentation
- Task C – Evaluation of Nitrogen Reduction Provided by Soils and Shallow Groundwater
- Task D – Nitrogen Fate and Transport Modeling

The contractor, in coordination with the FDOH and the Department's Research Review and Advisory Committee (RRAC), has successfully completed parts of Task A, B, C, and D, including literature reviews; ranking of nitrogen reduction technologies for field testing; design and construction of a test facility for further development of passive technologies; development of quality assurance documents; and completion of several sampling events at the test facility.

Current efforts and work expected to be completed this fiscal year include initiating field sampling of passive systems and the soil and groundwater under OSTDS at residential homes throughout Florida and at the test facility, and development of both simple and complex soil models.

Funding for fiscal year 2011-2012 is required to reap the benefits of all previous work and to complete the goals of this project. The tasks associated with this final phase include continuation and completion of field monitoring of performance and cost of technologies at home sites and of nitrogen fate and transport in the shallow groundwater, development of various nitrogen fate and transport models which will be calibrated with the field sampling results, and final reporting on all tasks with recommendations on onsite sewage nitrogen reduction strategies.

The FDOH and its Research Review and Advisory Committee recommend that the legislature:

- Provide additional funding and budget authority to the FDOH in the amount of \$2 million for the fiscal year 2011-2012 for continuation and completion of the contract and associated tasks.
- Provide FDOH budget authority for any remaining funds from 2010 appropriation to fiscal year 2011-2012.

Continued support for this project will ultimately benefit Florida's onsite system owners by finding cost-effective nitrogen reduction strategies, and will improve environmental and public health protection.

1 INTRODUCTION

The 2010 Legislature appropriated \$2.0 million for Phase II of an anticipated 3-5 year project with a total estimated cost of \$5 million to develop passive strategies for nitrogen reduction for onsite sewage treatment and disposal systems (OSTDS). This followed an initial appropriation of \$900,000 by the 2008 Legislature for the first phase of this study. Currently, this project is in its third year, and requires an additional \$2.0 million to complete the study. This report is submitted in compliance with Line Item 486 Section 3, Conference Report on House Bill 5001, General Appropriations Act for Fiscal Year 2010-2011, which appropriated the funding for the study.

This study was based on budget language in 2008 (Line Item 1682, House Bill 5001, General Appropriations Act for Fiscal Year 2008-2009) that instructed:

...the Department of Health to further develop cost-effective nitrogen reduction strategies. The Department of Health shall contract, by request for proposal, for Phase I of an anticipated 3-year project to develop passive strategies for nitrogen reduction that complement use of conventional onsite wastewater treatment systems. The project shall be controlled by the Department of Health's Research Review and Advisory Committee and shall include the following components: 1) comprehensive review of existing or ongoing studies on passive technologies; 2) field-testing of nitrogen reducing technologies at actual home sites for comparison of conventional, passive technologies and performance-based treatment systems to determine nitrogen reduction performance; 3) documentation of all capital, energy and life-cycle costs of various technologies for nitrogen reduction; 4) evaluation of nitrogen reduction provided by soils and the shallow groundwater below and down gradient of various systems; and 5) development of a simple model for predicting nitrogen fate and transport from onsite wastewater systems. A progress report shall be presented to the Executive Office of the Governor, the President of the Senate and the Speaker of the House of Representatives on February 1, 2009, including recommendations for funding additional phases of the study.

The 2010 legislative direction (included in Appendix A) specified that the existing contract for this project will remain in full force; that the Department, the Department's Research Review and Advisory Committee (RRAC), and the Florida Department of Environmental Protection (FDEP) shall work together to provide technical oversight and that DEP will have maximum technical input; that the main focus and priority for work in Phase II shall be in developing, testing, and recommending cost-effective passive technologies for nitrogen reduction; that field installations for this project will be subject to significant testing and monitoring; and that no state agency shall implement any rule or policy that requires nitrogen reducing systems or increases their costs until the study is complete.

The significance of this project is that it evaluates and develops strategies to reduce nitrogen impacts from OSTDS regulated by the Florida Department of Health (FDOH). Excessive nitrogen can have negative effects on public health and the environment. The primary motivations for this study are the environmental impacts that the increased levels of nitrogen in water bodies can cause. Programs within the Florida Department of Environmental Protection identify water bodies impaired by excessive nitrogen, establish targets for maximum nutrient loads, and develop management action plans to restore the water bodies. The relative contribution of OSTDS to total nitrogen impacts varies from watershed to watershed with

estimates ranging from below five to more than 20 percent. There is widespread interest in the management of OSTDS and their nitrogen impacts.

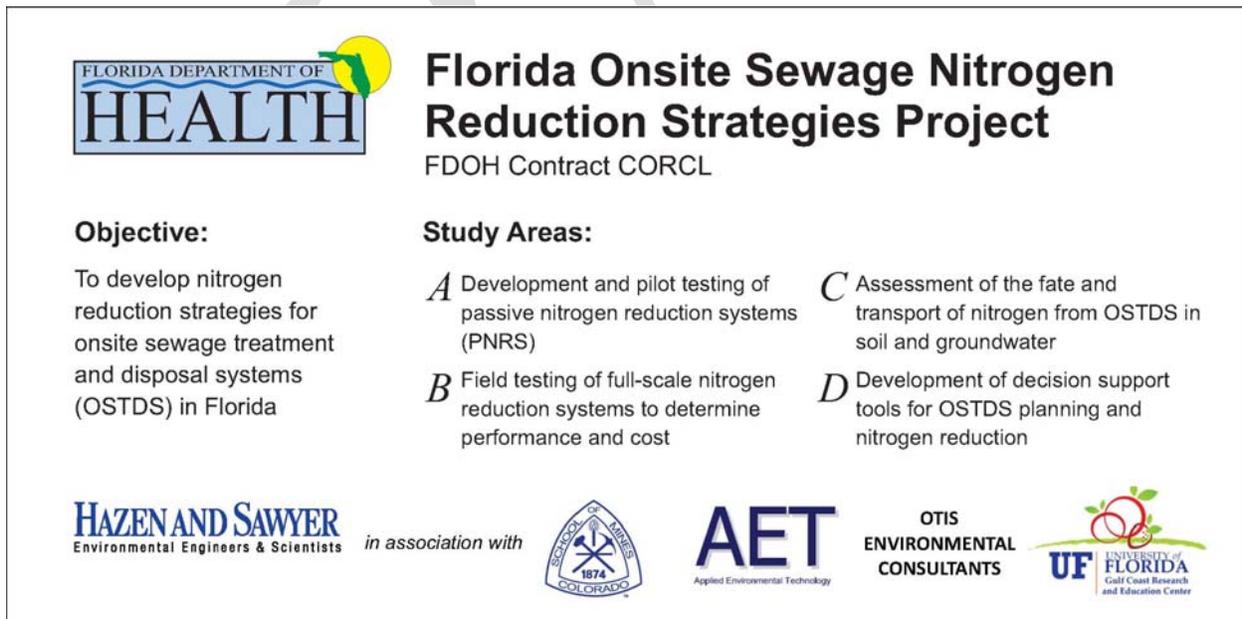
The study contract was awarded in January 2009 to a Project Team led by Hazen and Sawyer, P.C., and was based upon an anticipated budget of \$5 million over a 3 – 5 year project timeframe. As a result of the time required for contracting, unspent monies in fiscal year 2008-2009 were budgeted in 2009 to complete the initial tasks of the project. The contract identifies the following tasks:

Task A – Technology Evaluation for Field Testing: Review, Prioritization, and Development: This task includes literature review, technology evaluation, prioritization of technologies to be examined during field testing, and further experimentation with approaches tested in a previous FDOH passive nitrogen removal study. Objectives of this task are to prioritize technologies for testing at actual home sites and to perform controlled tests at a test facility to develop design criteria for new passive nitrogen reduction systems.

Task B – Field Testing of Technologies and Cost Documentation: This task includes installation of top ranked nitrogen reduction technologies at actual homes, with documentation of their performance and cost.

Task C – Evaluation of Nitrogen Reduction Provided by Soils and Shallow Groundwater: This task includes several field evaluations of nitrogen reduction in Florida soils and shallow groundwater and also will provide data for the development of a simple planning model in Task D.

Task D – Nitrogen Fate and Transport Modeling: The objective of this task is to develop a simple fate and transport model of nitrogen from OSTDS that can be used for assessment, planning and siting of OSTDS.



The sign features the Florida Department of Health logo on the left, which includes a stylized sun and water. To the right of the logo is the title "Florida Onsite Sewage Nitrogen Reduction Strategies Project" in a large, bold, black font, with "FDOH Contract CORCL" underneath. Below the title, the sign is divided into two columns. The left column is headed "Objective:" and contains the text "To develop nitrogen reduction strategies for onsite sewage treatment and disposal systems (OSTDS) in Florida". The right column is headed "Study Areas:" and lists four items: A) Development and pilot testing of passive nitrogen reduction systems (PNRS); B) Field testing of full-scale nitrogen reduction systems to determine performance and cost; C) Assessment of the fate and transport of nitrogen from OSTDS in soil and groundwater; and D) Development of decision support tools for OSTDS planning and nitrogen reduction. At the bottom of the sign, there are five logos: Hazen and Sawyer Environmental Engineers & Scientists; a logo for the University of Colorado with the text "in association with"; AET Applied Environmental Technology; OTIS Environmental Consultants; and the University of Florida Gulf Coast Research and Education Center logo.

Figure 1. Sign posted at the University of Florida's Gulf Coast Research & Education Center's test facility.

2 PROJECT STATUS

Funding for the first and second phases of this project has been appropriated. A summary of each of the major project tasks and their associated funding phases is shown in Table 1. The contractor, in coordination with the RRAC and FDOH, has successfully completed parts of Task A, B, C, and D, including literature reviews; ranking of nitrogen reduction technologies for field testing; design and construction of a test facility for further development of passive technologies; development of quality assurance documents for the test facility work, groundwater monitoring, field testing, and nitrogen fate and transport modeling; and completion of several sampling events at the test facility.



Figure 2. Test facility constructed at the University of Florida's Gulf Coast Research & Education Center.

Current efforts and work expected to be completed this fiscal year include preparations for field sampling, installation of between 4 and 9 field sites at residential homes throughout Florida for the testing of passive systems and to test the soil and groundwater under OSTDS, design and construction of a soil and groundwater test facility, sampling at the soil and groundwater test facility, continued sampling of passive technologies at the test facility, and development of both simple and complex soil models.

- The technology evaluation (Task A) will include a total of 7 sample events at the passive nitrogen test facility, measuring 14 different analytes at 23 sampling points, as well as a final report on the passive nitrogen removal study.
- For field testing of technologies (Task B), the quality assurance project plan has been finalized, four onsite systems utilizing various nitrogen removal technologies will be installed at home locations throughout the State of Florida, it is anticipated that four field system performance monitoring events will be conducted on these systems measuring 16 different analytes at 8 different

sampling points, and a template report on life cycle cost assessments will be completed.

- To evaluate of nitrogen reduction provided by soils and shallow groundwater (Task C), it is anticipated that a soil and groundwater test facility will be constructed to show how groundwater fate and transport of nitrogen occurs in multiple soil treatment unit regimes and three sampling events will be completed sampling 6 test areas measuring multiple parameters in the effluent, soil, groundwater, and soil moisture. Instrumentation of the existing OSTDS mound system at the University of Florida's Gulf Coast Research & Education Center (GCREC) in Wimauma Florida has started to research how nitrogen behaves in the soil and groundwater and four sampling events, examining multiple parameters, will be completed. At least one monitoring event will occur at up to four home sites to evaluate nitrogen movement in the soil and groundwater in the field measuring multiple parameters in the effluent, soil, and groundwater.
- To address nitrogen fate and transport modeling for Task D, a final quality assurance project plan has been completed, and the first steps are the development of simple and complex soil models to show how nitrogen is affected by treatment in Florida-specific soil.

3 ANTICIPATED PROGRESS IN 2011-2012

During the 2011-2012 fiscal year, additional funding will be critical. The tasks associated with this final phase are anticipated to include installation of the remaining (4 to 9) field sites at residential homes throughout Florida for the testing of passive systems and to test the soil and groundwater under OSTDS, completion of all sampling efforts, and completion of all reporting.

- For Task A, the final task report will be written which will include a summary of the accomplishments of the passive nitrogen removal test facility.
- For Task B, it is anticipated that four onsite systems utilizing various nitrogen removal technologies will be installed at home locations throughout the State of Florida, four field system performance monitoring events will be conducted on these systems, and final reporting on all of the field work associated with this task, including life cycle cost assessments, will be completed.
- For Task C, it is anticipated that at least 3 monitoring events will occur at 4 home sites to evaluate nitrogen movement in the soil and groundwater in the field, 3 sampling events will occur at 6 test areas at the soil and groundwater test facility to show how groundwater fate and transport of nitrogen occurs in multiple soil treatment unit regimes, and final reporting for this task will be completed.
- For Task D, shallow groundwater models will be developed, calibrated, and validated, with many of them utilizing the results of the field work collected in previous tasks, and a final task report will be written summarizing the results of this task.

Table 1. Summary of Tasks and Associated Funding Phases.

Task	Phase I (Jan 2009- June 2010)	Phase II Current Funding	Phase III Future Funding
A Task A: Technology Selection & Prioritization			
Literature review	1		
Ranking of nitrogen reduction technologies for field testing	1		
Design and construction of test facility	1		
Quality assurance project plan	1		
Monitoring and sample events		7	
Final test facility report		1	
Final task report			1
B Task B: Field Testing of Technologies			
Quality assurance project plan		1	
Installation of ranked nitrogen reduction technologies at field sites		4	4
System performance monitoring events (8 sites)		4	4
Template report on life cycle cost assessments		1	
Final life cycle cost assessment report (per system)			8
Final task report			1
C Task C: Evaluation of Nitrogen Reduction by Soils & Shallow Groundwater			
Quality assurance project plan	1		
Design of test facility	1		
Construction of test facility		1	
Monitoring and sample events (6 test areas)		3	3
Instrumentation of existing OSTDS mound at GCREC facility		1	
GCREC mound sample events		4	
Field sites sample events (4 sites)		1	3
Final task report			1
D Task D: Nitrogen Fate and Transport Models			
Quality assurance project plan	0.5	0.5	
Simple soil model		1	
Complex soil model		1	
Shallow groundwater models for simple and complex soil models			2
Calibration of models to existing data sets			2
Uncertainty analysis for models			2
Validation and refinement of models			2
Final task report			1

4 FUNDING NEEDS

Activities in fiscal years 2008-2011 have prepared the framework for rapid implementation of all remaining project tasks in fiscal year 2011-2012. Funding for fiscal year 2011-2012 is required to reap the benefits of all previous work and to complete the goals of this project. For the 2011-2012 budget year \$2-million dollars is required to fund the completion of this study.

Project Tasks (described above) are broken down further into funding phases as follows:

Initial Funding in 2008-2010 (Phase I): \$900,000 already appropriated (in 2008 and 2009 state budgets) – status: largely complete. The initial funding has been targeted to prioritize systems for testing, summarize existing knowledge, develop testing protocols, and establish a test facility for detailed soil and groundwater monitoring and preliminary testing of pilot scale passive nitrogen reduction systems.

Funding in 2010-2011: \$2 million already appropriated (in 2010 state budgets) – status: ongoing. This funding is primarily for field monitoring over at least a one-year monitoring period of performance and cost of technologies at home sites, and of nitrogen fate and transport. This funding will also continue the development and monitoring work at the test facility, and continue the modeling work.

Funding in 2011-2012: \$2 million will need to be appropriated during the 2011 legislative session to adequately fund the final phase of the project, primarily to complete monitoring and other field activities, additional testing as deemed appropriate by the Legislature, and final reporting with recommendations on onsite sewage nitrogen reduction strategies for Florida's future.

Further information on this project, including previous legislative reports and detailed project reports, can be found on the Department's website:

<http://www.doh.state.fl.us/environment/ostds/research/Nitrogen.html>

5 RECOMMENDATIONS

The FDOH and its Research Review and Advisory Committee recommend that the legislature:

- Provide additional funding and budget authority to the FDOH in the amount of \$2 million for the fiscal year 2011-2012 for continuation and completion of the contract and associated tasks.
- Provide FDOH budget authority for any remaining funds from 2010 appropriation to fiscal year 2011-2012.

Additional resources will be applied to the final phase of the project, primarily continuation and completion of field monitoring of performance and cost of technologies at home sites and of nitrogen fate and transport in the shallow groundwater, development of various nitrogen fate and transport models which will be calibrated with the field sampling results, and final reporting on all tasks with recommendations on onsite sewage nitrogen reduction strategies.

Continued support for this project will ultimately benefit Florida's onsite system owners by finding cost-effective nitrogen reduction strategies, and will improve environmental and public health protection.

APPENDIX A. 2010 Legislative Language

DRAFT

SECTION 3 - HUMAN SERVICES

485	SPECIAL CATEGORIES		
	ACQUISITION OF MOTOR VEHICLES		
	FROM ADMINISTRATIVE TRUST FUND . . .		80,000
	FROM RADIATION PROTECTION TRUST		
	FUND		130,856
486	SPECIAL CATEGORIES		
	CONTRACTED SERVICES		
	FROM GENERAL REVENUE FUND	153,772	
	FROM ADMINISTRATIVE TRUST FUND . . .		337,765
	FROM FEDERAL GRANTS TRUST FUND . . .		348,235
	FROM GRANTS AND DONATIONS TRUST		
	FUND		2,648,438
	FROM RADIATION PROTECTION TRUST		
	FUND		150,000

From the funds in Specific Appropriation 486, \$2,000,000 from the Grants and Donations Trust Fund is provided to the department to continue phase II and complete the study authorized in Specific Appropriation 1682 of chapter 2008-152, Laws of Florida. The report shall include recommendations on passive strategies for nitrogen reduction that complement use of conventional onsite wastewater treatment systems. The department shall submit an interim report of phase II on February 1, 2011, a subsequent status report on May 16, 2011, and a final report upon completion of phase II to the Governor, the President of the Senate, and the Speaker of the House of Representatives prior to proceeding with any nitrogen reduction activities.

487	SPECIAL CATEGORIES		
	GRANTS AND AIDS - CONTRACTED SERVICES		
	FROM FEDERAL GRANTS TRUST FUND . . .		750,000
488	SPECIAL CATEGORIES		
	RISK MANAGEMENT INSURANCE		
	FROM GENERAL REVENUE FUND	66,504	
	FROM RADIATION PROTECTION TRUST		
	FUND		14,575
489	SPECIAL CATEGORIES		
	TRANSFER TO DEPARTMENT OF MANAGEMENT		
	SERVICES - HUMAN RESOURCES SERVICES		
	PURCHASED PER STATEWIDE CONTRACT		
	FROM GENERAL REVENUE FUND	12,630	
	FROM ADMINISTRATIVE TRUST FUND . . .		18,342
	FROM FEDERAL GRANTS TRUST FUND . . .		9,712
	FROM GRANTS AND DONATIONS TRUST		
	FUND		8,282
	FROM RADIATION PROTECTION TRUST		
	FUND		40,522
490	SPECIAL CATEGORIES		
	STATE UNDERGROUND PETROLEUM ENVIRONMENTAL		
	RESPONSE (SUPER) ACT REIMBURSEMENT		
	FROM GRANTS AND DONATIONS TRUST		
	FUND		534,775

TOTAL:	ENVIRONMENTAL HEALTH SERVICES		
	FROM GENERAL REVENUE FUND	5,436,035	
	FROM TRUST FUNDS		23,407,013
	TOTAL POSITIONS	217.50	
	TOTAL ALL FUNDS		28,843,048

COUNTY HEALTH DEPARTMENTS LOCAL HEALTH NEEDS

	APPROVED SALARY RATE	474,197,601	
492	SALARIES AND BENEFITS	POSITIONS	12,359.00
	FROM COUNTY HEALTH DEPARTMENT		
	TRUST FUND		652,737,029
493	OTHER PERSONAL SERVICES		
	FROM COUNTY HEALTH DEPARTMENT		
	TRUST FUND		32,697,185

operating margin for the previous fiscal year to the Agency for Health Care Administration through hospital-audited financial data; and

(e) The department may not execute a contract for health care services at hospitals for rates other than rates based on a percentage of the Medicare allowable rate.

(2) For purposes of this section, the term “hospital” means any hospital licensed under chapter 395, Florida Statutes.

(3) This section expires July 1, 2011.

Section 12. In order to implement Specific Appropriations 3214 through 3216, 3218, 3222, and 3245A of the 2010-2011 General Appropriations Act, subsection (3) is added to section 44.108, Florida Statutes, to read:

44.108 Funding of mediation and arbitration.—

(3) For the 2010-2011 fiscal year only and notwithstanding any other provision of law to the contrary, moneys in the Mediation and Arbitration Trust Fund may be used as specified in the General Appropriations Act. This subsection expires July 1, 2011.

Section 13. In order to implement Specific Appropriations 324 through 355 of the 2010-2011 General Appropriations Act, paragraphs (b) and (c) of subsection (3) of section 394.908, Florida Statutes, are amended to read:

394.908 Substance abuse and mental health funding equity; distribution of appropriations.—In recognition of the historical inequity in the funding of substance abuse and mental health services for the department’s districts and regions and to rectify this inequity and provide for equitable funding in the future throughout the state, the following funding process shall be used:

(3)

(b) Notwithstanding paragraph (a) and for the 2010-2011 ~~2009-2010~~ fiscal year only, funds appropriated for forensic mental health treatment services shall be allocated to the areas of the state having the greatest demand for services and treatment capacity. This paragraph expires July 1, 2011 ~~2010~~.

(c) Notwithstanding paragraph (a) and for the 2010-2011 ~~2009-2010~~ fiscal year only, additional funds appropriated for substance abuse and mental health services from funds available through the Community-Based Medicaid Administrative Claiming Program shall be allocated as provided in the 2010-2011 ~~2009-2010~~ General Appropriations Act and in proportion to contributed provider earnings. This paragraph expires July 1, 2011 ~~2010~~.

Section 14. In order to implement Specific Appropriation 486 of the 2010-2011 General Appropriations Act, and for the 2010-2011 fiscal year only, the

following requirements shall govern Phase 2 of the Department of Health’s Florida Onsite Sewage Nitrogen Reduction Strategies Study:

(1) The underlying contract for which the study was let shall remain in full force and effect with the Department of Health and funding the contract for Phase 2 of the study shall be through the Department of Health.

(2) The Department of Health, the Department of Health’s Research Review and Advisory Committee, and the Department of Environmental Protection shall work together to provide the necessary technical oversight of Phase 2 of the project, with the Department of Environmental Protection having maximum technical input.

(3) Management and oversight of Phase 2 shall be consistent with the terms of the existing contract; however, the main focus and priority for work to be completed for Phase 2 shall be in developing, testing, and recommending cost-effective passive technology design criteria for nitrogen reduction.

(4) The systems installed at actual home sites are experimental in nature and shall be installed with significant field testing and monitoring. The Department of Health is specifically authorized to allow installation of these experimental systems. In addition, before Phase 2 of the study is complete and 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 standards that apply to existing or new onsite sewage treatment systems or modification of such systems;

(b) Increases the cost of treatment for nitrogen reduction from onsite sewage treatment systems; or

(c) Directly requires or has the indirect effect of requiring, for nitrogen reduction, the use of performance-based treatment systems or any similar technology; provided the Department of Environmental Protection administrative orders recognizing onsite system modifications, developed through a basin management action plan adopted pursuant to section 403.067, Florida Statutes, are not subject to the above restrictions where implementation of onsite system modifications are phased in after completion of Phase 2, except that no onsite system modification developed in a basin management action plan shall directly or indirectly require the installation of performance-based treatment systems.

Section 15. Effective June 29, 2010, in order to implement Specific Appropriation 270 through 375 of the 2010-2011 General Appropriations Act, subsection (3) of section 1 of chapter 2007-174, Laws of Florida, is amended to read:

Section 1. Flexibility for the Department of Children and Family Services.-

Research Priorities Ranking Workshop 2010

RRAC Member/Alternate Name:

Process:

1. Individuals brainstorm up to 5 ideas for potential research projects
2. Round robin - each person recites his or her responses, which are written down
3. Clarification - the group discusses the remarks
4. Selection and ranking - each person selects and ranks in priority order the top 5 ideas
5. Final selection and ranking - results are tallied and reported

Number	Issue (Scope; B-9 funding)	Weight: Choose top five projects (highest priority = 5, lowest priority = 1)
1	Continuation of inventory of OSTDS in Florida. Update the state database system, update with the latest Department of Revenue information on parcel data, update with the latest DEP wastewater treatment plant (WWTP) information, send letters to WWTP to gather up-to-date information on who's on sewer, work with county health departments to resolve unknowns.	
2	Study on grease sludge waste in establishments on OSTDS generating commercial strength sewage waste. Develop and verify best management practices for grease reduction and reuse in these types of facilities. First identify the scale of the problem, the survey current practices from both businesses on OSTDS and businesses on centralized sewer, perform case studies by implementing changes and characterizing the results, and perform education and outreach.	
3	Look at loading rates for drip irrigation / low pressure dosing / conventional and effective soil depths.	
4	Blackwater / graywater concentrations exceeding domestic sewage waste if separated? Water conservation effecting this?	
5	Residential flow strength higher now than previously due to low flow fixtures. Is the code still adequate? Is domestic strength sewage flow definition still adequate? The definition doesn't take into account dilution, less flow = stronger sewage. The biomat will have less permeability. Loading might not be more to the drainfield and this might be taken care of in the tank. Possibly look at this vs. the restaurant study and do sampling.	
6	Research on convenience store restrooms and flow data to make sure sizing in code is OK (strength and flow)	
7	Study to determine effects water saving fixtures have on influent / effluent concentrations and flow amounts for residential and various commercial establishments (sampling of systems that do not have water saving fixtures, then install the fixtures and resample)	
8	GIS study of correlations between water quality in wells, health effects, and types of septic tanks (FAMU intern worked on this in 2004)	

9	Relationship between soils, failure rates, and treatment effectiveness	
10	Research energy efficiency in OSTDS	
11	Research emerging contaminants (endocrine disrupting chemicals, pharmaceuticals in personal care products) in OSTDS	
12	Research virus removal in OSTDS	
13	Research urine source separation in OSTDS	
14	Develop an informational training program that can be used to inform planning and county government meetings on decentralized systems	
15	Verify how significant the linkages are between optical brighteners and other wastewater indicators such as coliforms and nutrients.	
16	Research the effectiveness of outlet filters.	
17	How representative are repair rates for the frequency of failure and non-conformance of OSTDS to standards? Are there categories (which) of systems that get repaired less frequently (could do survey, or build on SB550 inspections) ?	
18	What is the life expectancy of a septic tank and various kinds of drainfields? Are there factors that are important?	
19	Are there best practices of "designing for maintenance" that warrant being turned into code requirements?	
20	How much groundwater mounding occurs under drainfields that then can impact drainfield performance? (survey a sample of systems in high groundwater conditions, compare to existing model predictions)	
21	How much phosphorus removal occurs under drainfields?	
22	Many systems are stressed by overloading from vacation rental and/or other short term overloading. What is the performance of systems under such conditions (peak factor relative to average or median flow); what is the performance of mitigating factors, such as over-design or time-dosing, both under the peak conditions and under average conditions?	
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Department of Health
Bureau of Onsite Sewage Programs
Research Review and Advisory Committee

Friday December 10, 2010

10:00 am - 1:00 pm



Agenda:

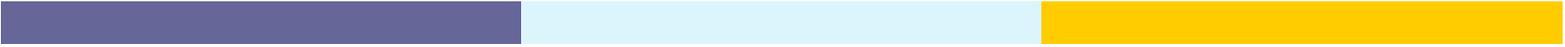
- Introductions and Housekeeping
- Review Minutes of Meeting November 5, 2010
- Nitrogen Study Interim Legislative Report & Project Update
- Research Priorities Workshop
- Other Business
- Public Comment
- Closing Comments, Next Meeting, and Adjournment



Introductions & Housekeeping

- Roll call
- Identification of audience
- How to view web conference
- DO NOT PUT YOUR PHONE ON HOLD!!!!
- Download reports:

<http://www.myfloridaeh.com/ostds/research/Index.html>



Review Minutes of Meeting November 5, 2010

- See draft minutes



Florida Onsite Sewage Nitrogen Reduction Strategies Study

Purpose: Develop passive strategies for nitrogen reduction that complement use of conventional onsite sewage treatment and disposal systems, and further develop cost-effective nitrogen reduction strategies



Florida Onsite Sewage Nitrogen Reduction Strategies Study

RRAC motion at 11/5/10 meeting to send memo to budget office regarding budget numbers for nitrogen study

UPDATE: Budget for nitrogen study is requested through the progress report. DOH requested budget authority for the remaining balance on already appropriated funds. DEP submitted \$1-million in their budget.



Florida Onsite Sewage Nitrogen Reduction Strategies Study

- Legislative report due February 1, 2011



Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task A

- Draft scope for the PNRSII modifications submitted and authorization to proceed given
- PNRSII modifications have been completed
- Additional small columns constructed
- Likely will have process modeling for PNRS II



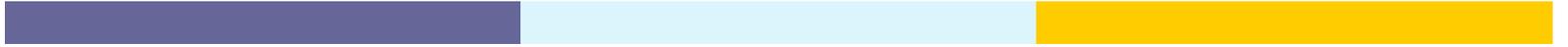
Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task B & C

- Task B process forward meeting minutes and final QAPP submitted
- Currently identifying home sites for Tasks B & C
- Currently moving forward with plans to install one of the available passive technologies at home site in Wakulla County
- Began instrumentation and monitoring of Task C home site in Wakulla County
- Instrumentation and monitoring network for GCREC mound completed
- GCREC mound monitoring/sampling has begun

Task D

- Task D scope and budget is being reworked to align with the QAPP
- Go-ahead given for the soil modeling work



Prioritization of Future Projects



Prioritization Process:

1. Individuals brainstorm up to 5 ideas for potential research projects
 2. Round robin - each person recites his or her responses, which are written down
 3. Clarification - the group discusses the remarks
 4. Selection and ranking - each person selects and ranks in priority order the top 5 ideas collected
 5. Final selection and ranking - results are tallied and reported
-



Step 1: Brainstorm

What does RRAC want to study?

Studies related to:

- Human health
- Performance of systems
- Environmental impacts from onsite systems

Silently jot down project ideas



Step 2: Round Robin

- Go around the room and say what additional projects you have brainstormed
- NO discussion at this point



Step 3: Clarification

- Discussion/clarification of project ideas



Step 4: Selection and Ranking

- Select and rank your top 5 ideas

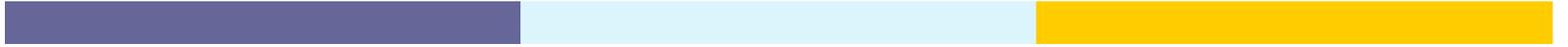
1 = highest ranking

5 = lowest ranking



Step 5: Final Selection and Ranking

- Tally results, highest total score wins
- Determine final prioritization list

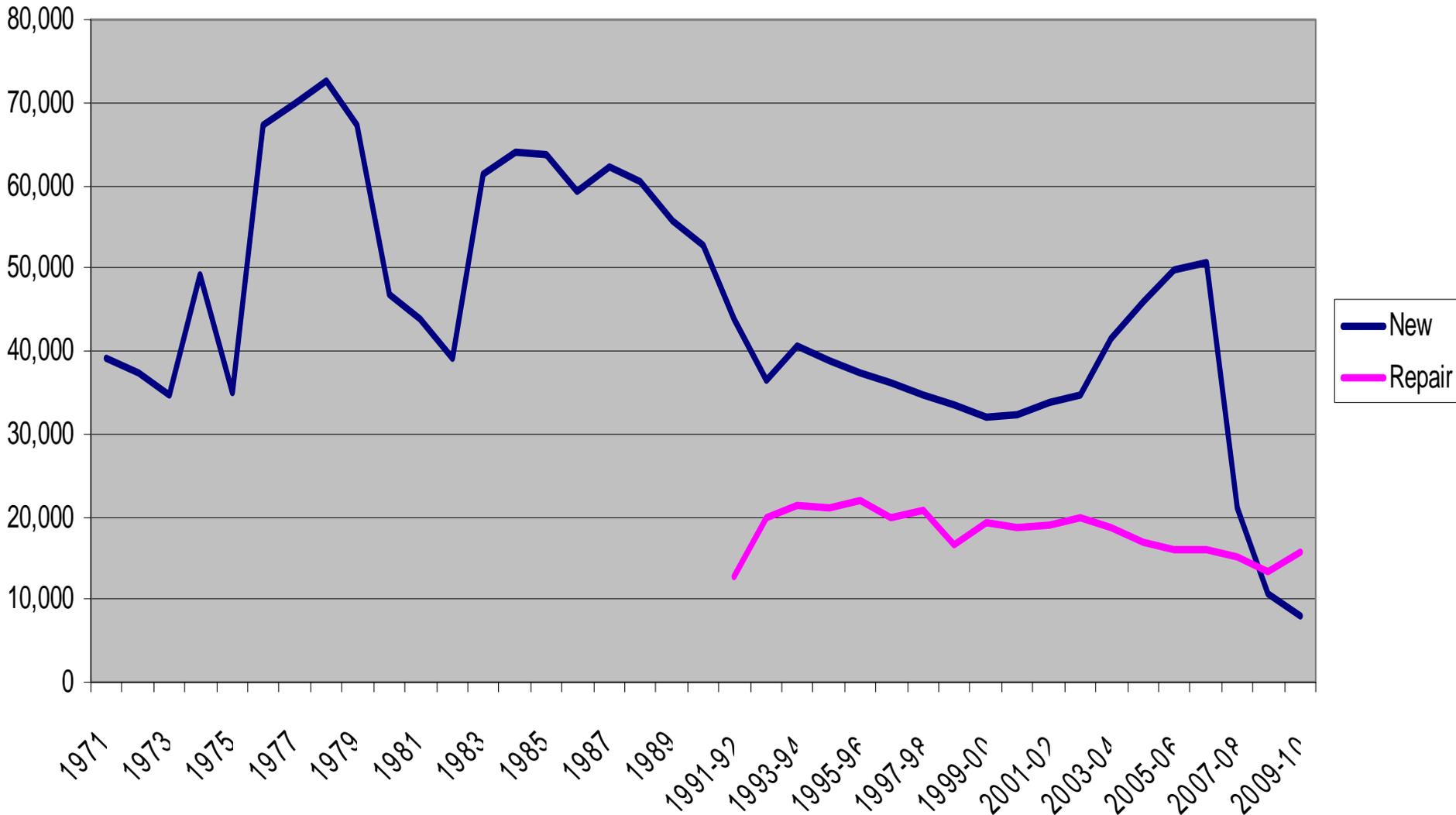


Other Business

- Final comments on Suwannee journal manuscript due now



New and Repair Septic Installations Annually





Public Comment



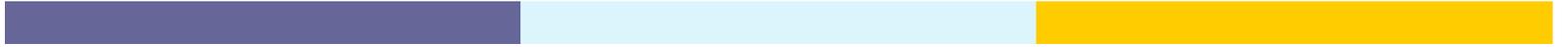
Next Meeting

Upcoming meeting topics:

- Discussion on ranked priority project ideas

Proposed dates for next meeting:

- Suggestions?



Closing Comments and Adjournment