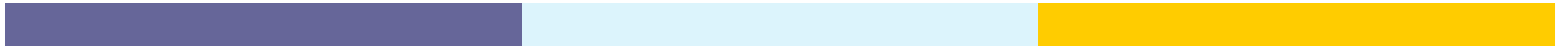




Department of Health
Bureau of Onsite Sewage Programs
Research Review and Advisory Committee

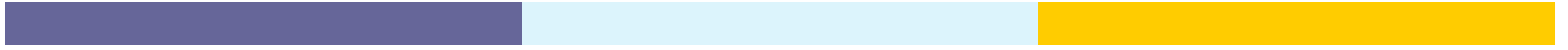
Wednesday July 30, 2008

9:30 am - 3 pm



Agenda:

1. Introductions
2. Review Minutes 5/29/08 Meeting
3. Discuss Scope of Work for Onsite Sewage Nitrogen Reduction Strategies
4. Discuss Scope of Work for Statewide Inventory of Onsite Sewage Systems
5. Updates on Ongoing and Future Projects
6. Other business
7. Public comment
8. Closing Comments, Next Meeting, and Adjournment



Introductions & Housekeeping

- No new member/alternates
- SB 1318 signed by governor appointing local government representative knowledgeable in wastewater
- Letter sent to Florida Association of Counties and Florida League of Cities on June 24, 2008 requesting local government representative
- No official selection has been made at this time



Review Minutes of Meeting 05/29/2008

- See draft minutes



FLORIDA ONSITE SEWAGE NITROGEN REDUCTION STRATEGIES STUDY:

- TECHNOLOGY EVALUATION,
- CHARACTERIZATION OF ENVIRONMENTAL FATE AND TRANSPORT,
- AN ASSESSMENT OF COSTS



Roles in the Study

Gov't

- Funds study
- Receives reports and recommendations

DOH

- Contracts for study
- Manages contracts
- Administratively supports RRAC and study
- Reviews and accepts deliverables
- Provides report to Gov't

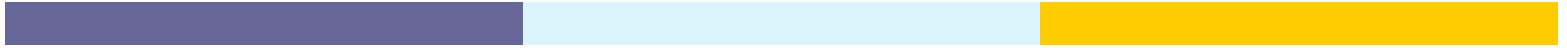
Study

RRAC

- Controls study
- Ranks proposals for contracts
- Reviews draft deliverables and provides comments
- RRAC will file a progress report , accept as complete the final report by contractors, and attach comments to final report

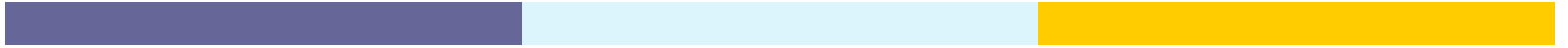
Contractors

- Contract with DOH
- Perform tasks
- Provide draft reports
- Address comments in final reports



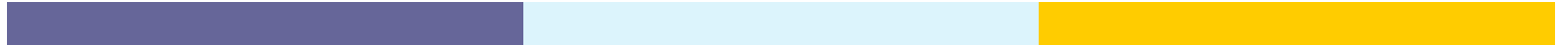
Goals

- Develop passive strategies for nitrogen reduction that complement use of conventional onsite sewage treatment and disposal systems
- Further develop cost-effective nitrogen reduction strategies
- Does this include?
 - a nitrogen discharge fee from conventional onsite sewage systems to fund upgrades
 - centralized management of onsite systems
 - density of onsite systems
 - only septic tanks and drainfields



Process

- RRAC reviews draft Invitation to Negotiate (=request for proposal)
- DOH advertises ITN
- Respondents send proposals
- DOH short-lists
- RRAC ranks respondents
- DOH begins negotiations with top-ranked respondent(s)



Task A: Preselection of technologies and prioritizing technology for testing

- Objectives: Evaluate and prioritize technologies for field testing, so that testing and further development can be phased in to occur as funding becomes available over the three year anticipated project period.



Task A Activities

1. Assess if any updates are needed to the passive nitrogen literature review
2. Develop a classification scheme for technologies to allow comparisons:
 - a) Complements to conventional onsite systems: reduced authorized lot flow per acre, separate treatment (and disposal off site) of black water and/or urine (Plumbing code) , dosed vs. gravity drainfields, differing installation depths relative to vegetation and/or seasonal high water table, fill material modifications
 - b) Passive nitrogen removal system (one pump, and treatment media)
 - c) Active nitrogen removal system
3. Develop criteria to rank technology for order of testing, E.g.
 - a) Maturity (established in Florida, innovative in Florida, field/center testing elsewhere, research idea)
 - b) Pretreatment Effectiveness (<50%, 50-65%, 65%-80%, >80%)(examples)
4. Develop a priority list of technology testing
5. Develop information to complete innovative system applications
6. Summarize the progress of this task semiannually



Task B: Field testing of technologies at actual home sites and cost documentation

- Objective: Obtain comparable data on costs and treatment effectiveness for a variety of technologies under field conditions. The emphasis will be on total nitrogen and other wastewater parameters (cBOD5, TSS, TP and fecal coliform) will be assessed in less detail.



Task B Activities

1. Development of a Quality Assurance Project Plan (QAPP). The document will address questions such as:
 - a) Achievable cost savings by different management strategies (individual owner decides about technology and maintenance entity vs. area-wide decision about technology and maintenance entity vs. cluster systems with common technology and common maintenance entity)
2. Recruitment of homeowners for participation in the study
3. Procurement, permitting, and installation of new systems and/or, existing system evaluation and instrumentation of existing systems
4. Contingency fund
5. Monitoring of water quality, quantity, cost and energy use
6. Assessment of life-cycle costs and benefits and stakeholder satisfaction
7. technical guidance document for each technology
8. System replacement after sampling complete
9. Summarize the progress quarterly



Task C: Evaluation of nitrogen reduction provided by soils and the shallow groundwater below and down gradient of various systems

- Objectives: To summarize existing and collect additional data to quantify nitrogen reduction provided by soils and shallow groundwater. The emphasis will be on total nitrogen, and other wastewater parameters (cBOD₅, TSS, TP and fecal coliform) will be assessed in less detail for additional characterization. As part of this, this task will characterize seasonal variability of the respective processes, in particular in the Wekiva Study Area



Task C Activities

1. Prioritize pretreatment/drainfield configuration/soil combinations for testing . E.g. differences between drip irrigation, pressure dosed and gravity-fed drainfields.
2. Development of a Quality Assurance Project Plan (QAPP)
 - a) soil and shallow groundwater processes at the same site or should the evaluations be separated (e.g. soil evaluations in lab or test center experiments; shallow groundwater in the field)?
 - b) mass balance of water, nitrogen and any other parameters; separate effects of processes, such as denitrification, nutrient uptake by plants, and dilution on nitrogen concentrations and loads?
 - c) Identifying sites
 - d) What is the loading (flow and concentration) coming from the last treatment receptacle?
 - e) groundwater velocity and direction, dispersion and recharge
 - f) importance of seasonal variability
3. Recruitment of site owners for participation in the study and site evaluations of existing systems
4. Instrumentation of sites, monitoring of groundwater quality, wastewater flow, and any other parameters
5. Report on each site, including monitoring results and mass balance estimates



Task D: Development of a simple model for predicting nitrogen fate and transport from onsite wastewater systems

Objectives:

- to adapt or develop and validate a model that can predict time-variable location and extent of the plume of an individual OSTDS, given information on factors such as sewage flow, recharge, drainfield type, soil, and groundwater flow velocity.
- To develop simplifications of the model that apply to certain combinations of conditions, e.g. to adapt or develop and validate a simple model that can predict location and extent of the average plume of an individual OSTDS, given information on factors such as sewage flow, recharge, drainfield type, soil, and groundwater flow velocity
- to adapt or develop a classification model for aerial nitrogen input and loading (lbs/acre or lbs/system or concentration at boundary) to groundwater from onsite systems depending on factors such as pretreatment, recharge, soil conditions and property size

- For loading estimates for watershed models
- To establish lot or pretreatment requirements given standards at a performance boundary
- As a starting point for load reductions

- If there is future funding , subsequently .
- Option 5: to adapt or develop and validate a model that describes the watershed-scale transport of nitrogen from subdivisions (multiple houses) to either deeper zones of aquifers or to surface water



Task D Activities

1. Summarize results of previous studies and recommend sampling parameters for field work (Task C)
2. Development of a Quality Assurance Project Plan (QAPP)
 - a) What should be the starting point of the model (existing numerical or analytical models such as NHBA, CXTFIT,) or new development
 - b) What data will be used to evaluate the matching of physical processes (velocity, water flux, dispersion)?
 - c) How will aggregation of variable data (soil, flow, concentrations, reaction rates) in space and time occur?
 - d) What will be used to characterize deviations between model and measured data (length, area, mass of plume; flux at performance boundary; concentration at sampling points)
 - e) How will the accurate execution of the algorithms of the model be verified?
 - f) Which existing data sets are proposed to guide model development?
 - g) What will be acceptance criteria for model validation against data developed under task C?
 - h) How will the existence of bias due to simplification be assessed?
3. Adaptation or Development of a model that achieves the objective and calibration with existing data sets
4. Validation of the model by comparison to datasets developed as part of Task C
5. Summarize the progress of this task semiannually



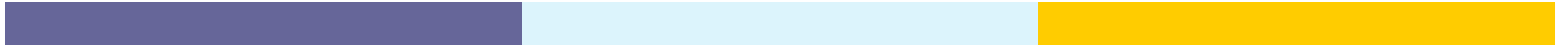
Evaluation of Written Proposals

- At the department's discretion, respondents with the highest scores ("short-listed") may be invited to give oral presentations to a presentation evaluation committee. A respondent that scores highest in the evaluation of the approach to a specific task (A, B, C, D) may also be invited. The order of presenters will be determined by lot.



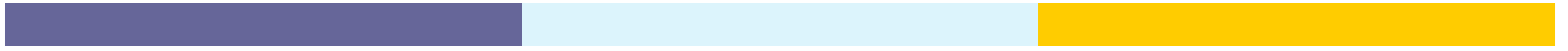
Evaluation of Oral Presentations

- The presentation evaluation committee members will use the Oral Presentation Evaluation Criteria Worksheet to score and subsequently rank the presenters.
- The average rank of all evaluators will determine the final ranking of respondents.
- The committee prefers one contract to result from this ITN.
- If the overall ranking and the ranking of approaches to specific tasks differ by half or more of the number of presenters for a task, the presentation evaluation committee will recommend to the department whether or not to pursue separate contracts for tasks.

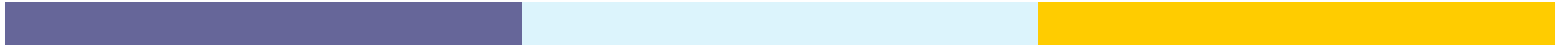


Evaluation Forms

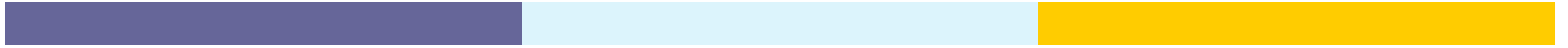
- See packets



Discussion on Next Steps

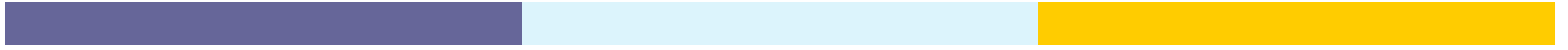


Statewide Inventory of Onsite Sewage Treatment and Disposal Systems in Florida



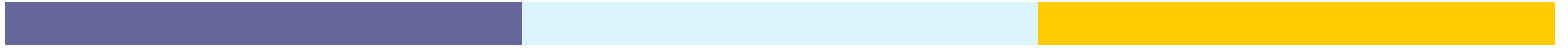
Goals

The bureau does not have a comprehensive inventory of the approximate 2.5-million onsite sewage systems under its jurisdiction. Such an inventory is necessary for the department to accurately estimate the impact of these systems on the environment. This inventory is a fundamental component of the bureau's future plans regarding improvement, maintenance, and management of these systems and expansion of ongoing research.



Process

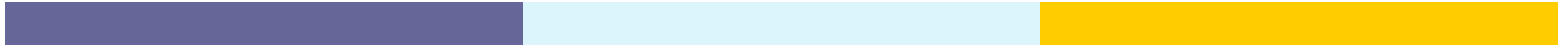
- RRAC reviews draft Invitation to Negotiate (=request for proposal)
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- DOH short-lists
- RRAC ranks respondents
- DOH begins negotiations with top-ranked respondent(s)



Task A: Identify data sources

Objective:

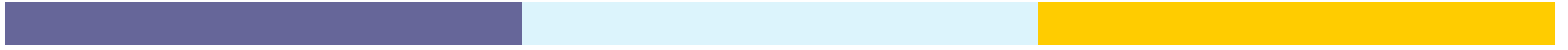
Identify the developed properties that use sewage treatment systems under the jurisdiction of DOH



Task A Activities

Respondent will answer the following questions:

- How best to identify developed properties? [Suggested data source: County Property Appraisers]
- How best to distinguish the method of wastewater disposal? [Suggested data source: Private and public utilities]
- How best to determine the minimal information about each onsite system (tank size, drainfield size, etc.)? [Suggested data sources: County Health Department records, septic tank pumper records, septic tank contractor voluntary inspection records]



Task B: Gather data

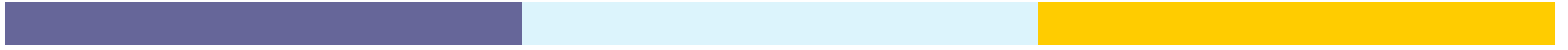
Objective:

Collect data from the identified data sources



Task B Activities

1. Make contact with data sources identified in Task A
2. At a minimum the following data fields are required: parcel identification number, property address, data source, latitude and longitude, lot/block/subdivision information, method of sewage disposal
3. At minimum, the following supplemental data fields are required when available: most current OSTDS-permit identifier, estimated flow, estimated tank size, drainfield size, lot size, house size, system type (conventional system, ATU, PBTS), date and result of last inspection, date of next required inspection



Task C: Develop database structure

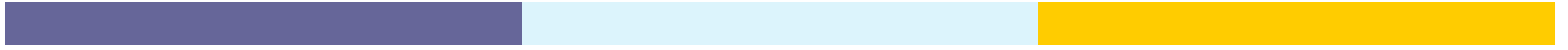
Objective:

Create a database structure to house the data



Task C Activities

1. Utilize the data collected in Task B to develop a database structure. At a minimum the database shall include the required and supplemental fields listed in Task B
2. Implement a method to address shared systems and multiple systems on one parcel
3. Implement a method to receive regular updates from property records or the EHDB in order to remove active systems when they are abandoned and update records with the most current permit information



Task D: Integration and extraction of data

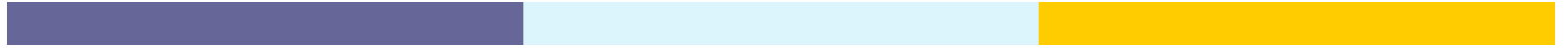
Objective:

Combine all of the gathered data into a single source



Task D Activities

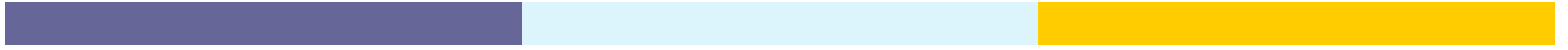
1. Create a single list of all developed properties in the state [Suggestion: Use the developed properties listing from the Property Appraiser's offices]
2. Identify properties not served by wastewater systems served under DOH jurisdiction [Suggestion: Use utilities listing to remove properties]
3. Use supplemental data sources to populate supplemental fields when available



Task E: Index and geo-code the data

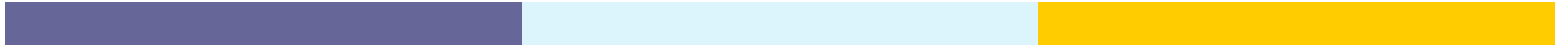
Objective:

Provide a unique identifier to allow each property and each OSTDS to be individually mapped with a minimum success rate of 90%



Task E Activities

1. Utilizing Accumail, or other DOH approved software assign geographic identifiers derived from address information in a format compatible with ArcMap in a projection compatible with DOH standards



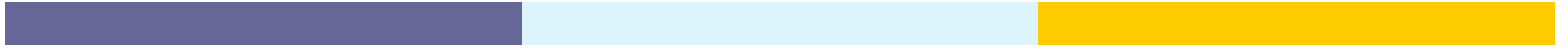
Task F: Final project database

Objective:

Final database including all combined records

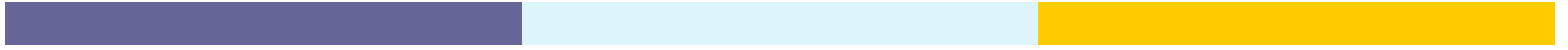
Activities:

Populate the database with the inventory records



Written and Oral Evaluations

Process similar to Nitrogen Study



Ongoing projects



Passive Nitrogen Removal Project

- Received final project report
- Project is now complete



Optical Wastewater Tracers Study (old Remote Sensing of Optical Brighteners Study)

Purpose: Test the feasibility of detecting wastewater inputs to Florida surface waters using optical characteristics such as optical brighteners from laundry detergents as tracers

Progress:

- QAPP final approved
- Mote Marine contract for specialized lab work near execution
- Sampling currently being done



Manatee Springs, Performance of Onsite Systems Phase II Karst Study

Purpose: Test the difference in water quality after nutrient reducing systems are installed in a Karst area

Progress:

- Working on designs for nutrient reducing systems
- Working on new agreement with FSU to perform sampling



Taylor County Source Tracking

Purpose: Evaluation of source hypotheses for pathogen indicators at beaches in Taylor County

Progress:

- Final project report for grant submitted to EPA on July 1st
- Tri-fold brochure completed and is ready for distribution

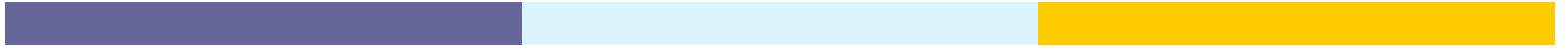


Monroe County PBTS Assessment: Next Phase of Sampling in the Keys

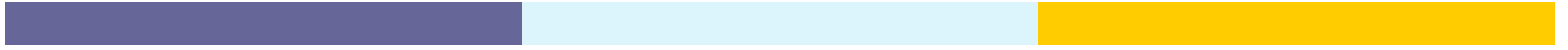
Purpose: Evaluate effectiveness of Performance Based Treatment Systems in the Keys

Progress:

- Developing criteria for next phase:
 - Expand diurnal variability assessment
 - Additional ATUs and PBTS for single family residences
 - PBTS for systems serving multiple houses (e.g. mobile home park)
 - Validate field sampling protocol by sampling during inspections



Upcoming projects



319 Project on Performance and Management of Advanced Onsite Systems

Purpose: Assess water quality protection by advanced onsite sewage treatment and disposal systems

Progress:

- Waiting on signed grant agreement from DEP. Once received it will be executed and work can begin. Anticipate receipt of signed agreement within the month.
- Development of task to select vendor to create a database of all advanced systems is almost complete and will be advertised soon after signed agreement is received.



Town of Suwannee Study: DEP Coastal Management Program Grant

Purpose: Grant to resample the Town of Suwannee to see what effects sewerage has had on water quality

Progress:

- Waiting on signed grant agreement from DEP. Once received it will be executed and provider can be selected. Anticipate receipt of signed agreement within the month.
- ITN scope was presented at last meeting and actual ITN document is anticipated to begin internal routing within next two weeks.

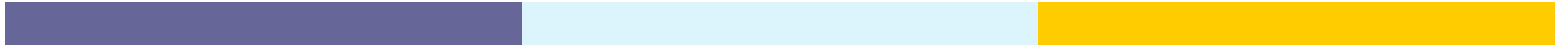


Restoration of the University of South Florida (USF) Lysimeter Station

Purpose: Restore station to functional state to be available for testing of future projects

Progress:

- Memorandum of Agreement sent to USF on June 17th, waiting for response back



Phase II of the Florida Passive Nitrogen Removal Project

Purpose: Build on the results of the Phase I study to go from a lab scale project to a prototype scale project

Progress:

- Discussion on whether this research priority could be accomplished under special appropriation 1682



Wekiva Onsite Sewage Treatment and Disposal System (OSTDS) Seasonal Variability Assessment

Purpose: Investigate if there is a seasonal variability of nitrogen concentrations from OSTDS in the Wekiva Study Area of Central Florida

Progress:

- Discussion on whether this research priority could be accomplished under special appropriation 1682

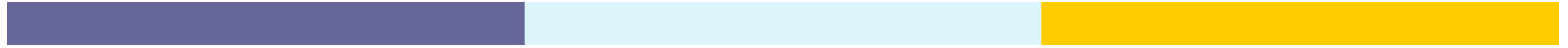


Alternative Drainfield Product Assessment

Purpose: Compare the functioning of alternative drainfield materials to standard aggregate

Progress:

- Discussion on whether this research priority could be done as an enhancement to the study being done under special appropriation 1682, or whether this project will need to be postponed until the next budget cycle

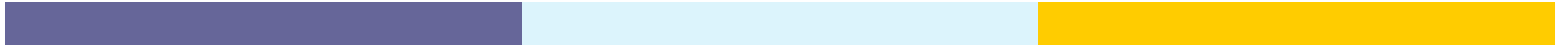


Long-term deformation of tanks of different materials

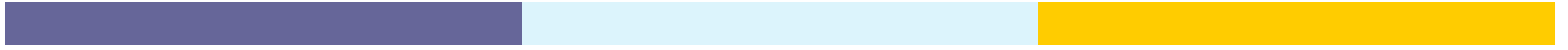
Purpose: Compare the functioning of alternative drainfield materials to standard aggregate

Progress:

- In scoping stages. Propose two stages:
 - Phase I: literature review on plastic tanks with assessment protocol to include different tank materials (fiberglass, concrete)
 - Phase II: field sampling numerous tanks of different materials based on the Phase I protocol



Other Business



Public Comment



Closing Comments, Next Meeting, and Adjournment

Important dates:

TRAP meeting: **Possibly end of August or beginning of September**

Next RRAC issues:

- Select provider for Suwannee Study, Nitrogen Study, and Inventory Study
- Currently ITN's are written to have oral presentations done on October 8, 2008

Possible next RRAC meeting: October 8, 2008 or sooner???