

**Silver Springs and Rainbow Springs Basin Management Action Plan (BMAP) Onsite
Sewage Treatment and Disposal Systems (OSTDS) Remediation Plan Meeting**

**Marion County Growth Services Conference Room
2710 E. Silver Springs Blvd, Ocala, FL 34479**

December 15, 2016, 9:00 a.m.

Advisory Committee members present:

- Dan Dooley, Florida Department of Health (FDOH) in Marion County
- Tracy Straub, Marion County
- Scott Hersey, City of Ocala
- Bruce Phillips, City of Belleview
- Dawn Bowne, City of Dunnellon
- Burt Eno, Rainbow River Conservation, Inc.
- Russ Melling, Oklawaha Valley Audubon
- Robert Himschoot, Florida Home Builders Association
- Jerry Guerra, Marion County Building Industry Association
- Roxanne Groover, Florida Onsite Wastewater Association

Absent: Bryan Schamlz, Bay Laurel CDD

Welcome and Opening Remarks – Mary Paulic

Robert Himschoot: I wanted to comment on Russ Melling's comments from last month. There is a need to look at Florida Statute Section 153.54, which provides for continued operation of an existing system that is operating correctly, and requires municipalities to do a study to look at the advantages and disadvantages of hooking up to central sewer. This includes looking at the current condition of the systems.

- The Remediation Plan needs to:
 - Provide for BMAP revisions by July 2018
 - Include development of 5, 10, and 15 year goals
 - Include a plan to meet the TMDL in 20 years
- OSTDS Advisory Committee members
 - Represent the sectors that are affected by the OSTDS Remediation Plan
 - Have expertise to lend to the process and to successful outcomes to reduce nitrogen loadings from OSTDS sources
 - Advise/provide DEP with opinions or direction on Wastewater/OSTDS Remediation Plan
- The Advisory Committee operates under the Sunshine Laws (Article 1, Section 24, Florida Constitution and Section 286.011, F.S.)
 - This limits ability of committee members to communicate on issues that could come before the committee
 - Discussion with alternates and staff is permissible
- Remediation Options

- Provide central sewer service
- Install nitrogen reducing septic systems
- Implement maintenance program

Locating Areas of Concern – Mary Paulic

- OSTDS numbers are based on 2014 DOH data
 - We only used the known and likely categories
 - Septic was sometimes assumed for an area when there was a lack of information, but this will eventually require verification
 - The numbers for Rainbow are significantly higher than what was used in the NSILT to generate those loading calculations

Roxanne Groover: Are these numbers based off of DOH's most recent inventory?

Answer: Yes they are.

- Rainbow Springs BMAP Area Reductions
 - Total draft loading to BMAP area is 251,844 lbs-N
 - Draft target load reduction is 206,512 lbs-N
 - Draft load to high recharge area 211,110 lbs-N
 - Estimated load reduction to groundwater 173,110
 - Draft load to Medium recharge area 40,734 lbs-N
 - Estimated load reduction to groundwater 33,402
 - There are no low recharge or discharge areas in the Rainbow Springs basin
- Rainbow Springs Recharge
 - Estimated 30,596 OSTDS in high recharge areas
 - Estimated 6,130 OSTDS in medium recharge areas
- Rainbow Springs Medium Recharge
 - Mapped medium and high density residential
 - Medium density equals 2-5 dwelling units an acre
 - High density equals more than 6 dwelling units an acre
 - Only an estimated 215 OSTDS in medium density residential
 - Likely not a great category to focus on

Comment: For the high density residential, none of those should be on septic. Those should all be on package plants.

Response: We are still looking at this from a high level and some of this may not be 100% accurate. It is important for those involved to provide information on where infrastructure is so that we have an accurate picture. We are getting to the point where we may start identifying areas to focus on, and will need to have an accurate picture.

Comment: Some of those areas are probably private utilities that did not respond to the DOH survey.

- Rainbow Springs High Recharge
 - Medium density residential: 12,309 OSTDS estimated
 - High density residential: 513 OSTDS estimated.

- Rainbow Springs low density residential by recharge
 - Low density equals less than 2 dwelling units an acre
 - An estimated 14,353 OSTDS in high recharge areas
 - An estimated 4,572 OSTDS in medium recharge areas
- When looking at OSTDS on parcels 1 acre or smaller in size, there are some areas of denser development near Dunnellon that have slightly larger lots.
 - Were also some very small parcels that showed up as being less than 1/10th an acre in size that likely don't all have septic.

Dan Dooley: There are some really small lots in some areas that require multiple lots for somebody to build anything on

Roxanne: How would we deal with areas like this?

Dan Dooley: We would probably need to come up with an estimate for the average number of lots needed for a structure.

Tracy Straub: You can talk to our Growth Management Director to find out what lot size is required for a structure.

- There is a need to discuss what constitutes new construction. Is it a new dwelling unit or a new subdivision? If a subdivision, old platted lots could still construct with OSTDS. This is something we are still seeking guidance on and is an issue statewide.
- Geographic focus areas for Rainbow Springs
 - Looked at some areas of medium and high density residential in high and medium recharge areas
 - One area is just north of Dunnellon and has around 2,600 OSTDS.
 - If we add in the systems inside the city, that is another 1,000
 - Another area is just north of Williston and has around 1,400 OSTDS
 - There is an area on the SR 200 corridor that has around 8,000 OSTDS
 - There are 2 areas in NW Ocala, one has 1,800 and the other 380 OSTDS

Burt Eno: The concentrated area on US 41 south of SR 40 looks like Country Club Estates. This area definitely has a sewer system.

Response: Then that is an area we will need to look at.

Dan Dooley: Does Dunnellon really have that many septs left?

Dawne Bowne: I was surprised by how high that number was, too.

Response: We are still looking at this from a high level and need input.

Anthony Dennis: The DOH data was completely reliant on the utility data provided. We experienced in our area where there wasn't a lot of response to the survey so the default was to 2009 survey results. You should be able to look at the data and determine where there wasn't a survey response. We are having to reanalyze some of Alachua County's data for our BMAP. Between DOH and Utility data, you can start figuring it out.

Response: DOH is looking at coming back to the non-responding utilities for the next update.

Robert Himschoot: It may be good to look at the HB 1263 report and the methodology that was used to go out and look at the status of systems.

Burt Eno: You have Rainbow Lakes Estates with an awful lot of quarter acre lots that aren't built out yet. Are they still able to build with septics?

Response: That goes back to what we were discussing earlier and the interpretation of what constitutes new construction.

Dawn Bowne: We have run into an issue with the Chatmire area because it is in the unincorporated area of the County and the County would not mandate connection to central sewer. Because of this we did not go through with providing central sewer there.

Dan Dooley: It is a state law that they would have to connect within a year if sewer is available.

Dawne Bowne: The problem is that Marion County would not enforce the connection.

Burt Eno: My understanding is that the project would have also required digging up a lot of roads to do the work, but the County wasn't willing to pay the cost for that.

Tracy Straub: There was also a question as to whether the roads are actually located in the platted right-of-ways in this subdivision. This is another issue we would have to look at. For some areas it would require reaffirming the right-of-ways.

Bruce Phillips: We ran into the same issue where we would need another entity to enforce the connection.

Robert Himschoot: It all comes back to knowing if the systems in the ground are functioning properly and if they are contributing to the problem.

- For Silver, we have to get to a 79% reduction in loading for OSTDS
 - This equates to 211,699 lbs-N in the PFA
 - This equates to 496,483 lbs-N in the entire BMAP area
 - When you subtract the PFA from the BMAP area, you come up with a reduction needed of 284,784 lbs-N
- Silver Springs OSTDS Loading Reductions
 - Estimated loading to high recharge area: 430,073 lbs-N/ year
 - Estimated nitrogen load reduction to groundwater 339,757 lbs-N/ year
 - Estimated loading to medium recharge area: 188,579 lbs-N/ year
 - Estimated nitrogen load reduction to groundwater 148,977 lbs-N/ year
 - Estimated loading to low recharge area: 9,808 lbs-N/ year
 - Estimated nitrogen load reduction to groundwater 7,748 lbs-N/ year
- Geographic focus for Silver Springs
 - Area just north of Ocala in the PFA has around 4,100 OSTDS
 - Area in the south part of the PFA has around 10,900 OSTDS
 - Area in south part of Marion County has around 8,400 OSTDS
 - Area in northern part of Lake County has around 5,000 OSTDS
 - This would be a very low priority area
 - Some areas of The Villages are showing up on septics even though we know the area is sewered.

Robert Himschoot: Do we know the number of buildable lots available in those areas?

Response: No, we don't.

Jerry Guerra: I can tell you that in Silver Springs Shores and Marion Oaks there are thousands of platted lots that are not on sewer.

- The Department of Economic Opportunity has a technical assistant grant that may be beneficial. We may be able to get them to come to one of the next meetings to give us more details.

Review/Update of Wastewater Technologies Presented at Last Meeting – Dr. Gao

- Based on nitrogen removal capacity, OSTDS can be divided generally into 3 categories
 - Conventional systems
 - Even if a conventional system is installed and maintained correctly, they generally only provide 30% nitrogen removal.
 - Lined drainfield & existing advanced technologies
 - These provide a medium level of removal, up to 70%
 - Nitrogen reducing systems
 - Those specifically designed to remove nitrogen and have removal rates up to 90-95%.
- The TRAP passed a revised rule last Friday for the lined drainfield system with comments on some minor tweaks
 - The revisions and comments will have to go to a variance group for their comments
 - Those comments can then come back to the TRAP for final approval
 - Hopefully looking at the end of the 1st quarter or beginning of the 2nd quarter for being able to use some of these systems.
 - The TRAP commented that there may be some ways to improve the liner system
 - The rule would require the new design to be monitored for a couple years before use
 - The original design will still be able to be used though

Shane Williams: The passive systems will be able to be installed and permitted without monitoring for the in-ground systems.

Response: Some of the passive systems will require monitoring, some not, but all will require inspection.

Enhanced Nitrogen Removal OSTDS – Roxanne Groover

- When we start talking about these newer systems, we need to start saying OSTDS and not septic
 - Septics do their job very well, but were never designed to treat nitrogen
- Available technologies
 - Proprietary Aerobic Treatment Technologies (ATUs)
 - This includes media filters
 - Performance Based Treatment Systems (PBTS)
 - We see these in the Keys a lot and other areas where there are smaller lots

- Innovative Systems
 - This is for testing systems that haven't really been used in the state
 - Passive Nitrogen Study Technologies
 - These are those that were tested out in the big study
- Proprietary ATUs
 - Standard 40: Residential wastewater treatment systems
 - Standard 245: Wastewater treatment systems
 - These are those that treat for nitrogen
 - We know a lot about these systems
- Who is NSF?
 - NSF is made up of industry, regulators, and consumers
 - These groups have to come up with a consensus on these systems
- NSF testing & certification
 - Application/engineering review: 1-3 months
 - Test unit installation at test facility: 1-3 days
 - Test administration: 6 months
 - Test data analyzed by program office & engineering: 4-6 weeks
 - Issuance of the Wastewater Technology Report
 - Completion of all product literature, data plate and documentation requirements
 - Audit of manufacturing facility completed
 - Certification and listing
 - Removal of unit from test facility
 - Continued or on-going certification
- NSF testing of a system cost around \$100,000
- Test schedule
 - Overall length is 26 consecutive weeks
 - Dosing
 - Initial dosing is 1/3 wastewater and 2/3 makeup water
 - Design loading is 16 weeks
 - System is dosed 7 days a week
 - Stress loading is 7.5 weeks
 - Final design loading is 2.5 weeks
- They control what each of these systems are getting, so this is a true apples to apples comparison
 - Some of the systems really exceed the criteria.
 - There is no criteria for fecal, nitrogen or phosphorus
- NSF245 criteria was originally designed for nutrients
 - Systems must meet at least a 50% reduction for nitrogen.
 - Must also meet the requirements for NSF40
- ETV Nutrient Reduction is another verification process that is out there, but is has allowances that are not realistic for homeowners
 - Systems can be adjusted daily

Question: Are you testing the amount of nitrate that is getting through the soil to the groundwater?

Response: These are all tested in the pipe with no soil attenuation at all. We have to keep that in mind when looking at these.

- Innovative Process
 - Application by FL PE
 - Monitoring protocol designed to validate the system
 - Compelling evidence that the system will perform
 - Intent is to reclassify system
 - Used to bring new technology to the state or to change the approval status
 - Some of these may be systems that were designed for a big house on a small lot, treating to a higher level so that the drainfield can be smaller or can have different setbacks
 - We have to make sure the newer systems aren't allowing smaller drainfields or different setbacks to ensure we are putting in the best thing we can.
- Another standard we are looking at being able to use in the state is NSF 350
 - These are certified for water reuse
 - One such system we are looking at is the BioBarrier Membrane Bioreactor
- Many of the systems work just like a mini-WWTP
- Even a basic ATU gives us better treatment than conventional because it gives us better denitrification
 - Important to think outside the box and look at the entire treatment train
- Another concept we need to look into is the decentralized concept

Robert Himschoot: This works great for manufactured home communities with small lots

- It is suggested to invite manufacturers in the committee is interested in specific technologies. It may be possible to set up a day where interested vendors can bring their tech here to see

Jerry Guerra: Is there a place where we can get information on the cost associated with these systems?

Response: The presentation contains links for the manufacturers.

Shane Williams: You mentioned clustering, are these systems able to be scaled easily?

Response: Many of these systems are. I am doing a presentation for the Wekiva group soon that I can do here if you wish.

Mary Paulic: You mentioned people taking a field trip to the Lake Alfred site?

Response: It is only about 70 minutes away if the committee would be interested in coming.

Shane Williams: We may look at planning that for the February meeting. January wouldn't work because it is also the annual BMAP meeting.

- Rick Hicks did a septic tank study for Wekiva, and would be more than happy to come give a presentation on it when he done compiling the data in the spring
 - The study was on trying to determine the attenuation and leaching from existing systems, other sources of nitrogen in residential areas, and conditions that may influence nitrogen attenuation
 - Study also evaluated changes in septic tank treatment after pumpouts and alternative nitrogen reducing drainfield

Summary and Action Items – Mary Paulic

- Will have to put off discussion on public education until the January meeting
- Realizing now that we will likely need to look at the NSILT and refine it as part of the BMAP
- Need to determine if additional data collection efforts are necessary, or if the Wekiva data is going to be sufficient

Robert Himschoot: It is always good to get better data. Other studies I have seen have shown very different results. It would be good to get better data.

Dan Dooley: The soil is very similar between Wekiva and the Rainbow Springs area.

Roxanne Groover: Can the 319 project money that just came out be used to put in passive systems.

Response: If it is a project that is going to provide a benefit it could, it just can't be put in as a research project. A monitoring component can be involved though.

Tracy Straub: Marion County met with Drew Bartlett, Tom Frick, and both Water Management Districts to discuss these types of projects. Funding for this is always going to be a challenge. We don't have the money to put into projects like these as a match. We are looking for a particular location that may be suited for this type of project. We don't want to focus on an area that could likely be sewered in the future.

- It would be good to bring up and explore these options very soon. It may turn out that we don't need additional data because the soil type is the same, but it will be good to look at this.
- The next meeting is January 26, which will be the annual BMAP meeting as well
- Utilities need to provide updated information about where infrastructure is

Bruce Phillips: We have funding this year to start on design for water and sewer for another area. We are also looking for funding to do a planning study for another area that has 1,200 septic tanks.

- Utilities should also provide any information they have on potential planning studies or expansion plans so that we know what is going on.

Meeting adjourned