

**Weeki Wachee (WW) Spring and River Basin Management Action Plan (BMAP)
Meeting Summary**

*Tuesday, July 19, 2016 at 2:00 PM
Southwest Florida Water Management District (SWFWMD), Room 112
2379 Broad Street, Brooksville, FL 32604*

Attendees

Clay Black, Hernando County Public Works
Alys Brockway, Hernando County Utilities
Andrew Brusso
Will Bryant, FDOH-Citrus County
John Burnett, Hernando County Public Works
Tiffany Busby, Wildwood Consulting
Dennis Davis, Wright-Pierce
Jon Dowler, City of Brooksville
Trevor Fagan, SWFWMD
Cathy Foerster, Wildwood Consulting
Xueqing Gao, FDOH-Tallahassee
Albert Gray, FDOH-Hernando County
Mark Green, SWFWMD

Roxanne Groover, FOWA
Terry Hansen, DEP
Janet Hearn, ATM on behalf of FDOT
Anne Holbrook, Save the Manatee Club
Barbara Shelt, SWFWMD
Greg Lang, Mittauer & Associates
Mary Lusk, UF-IFAS
Christine Lynch, Pasco County
Elke Ursin, FDOH-Tallahassee
Barry Vance, Water & Air Research
Kevin Vickers, Hernando County Utilities
John Walkinshaw, GPI

Introduction

Tiffany Busby opened the meeting at 2:10 PM by welcoming everyone. She explained that the focus of today's meeting is the development of an OSTDS (onsite sewage treatment and disposal system) remediation plan. Elke Ursin with the Florida Department of Health (FDOH) will present on the FDOH statewide inventory of septic systems, new nitrogen reduction technologies, and planning tools. Terry Hansen, the Florida Department of Environmental Protection (DEP) WW basin coordinator, will discuss new legislative requirements related to the delineation of a priority focus area (PFA). We will then have an interactive discussion on the OSTDS remediation plan components: public education, projects, and science. She thanked SWFWMD for arranging the meeting room. She reminded attendees to sign in and to provide their email information should they desire to be on the DEP contact list to receive meeting notices. She then requested that each person in the room introduce themselves.

FDOH Inventory and New Technologies

Elke Ursin presented on two projects undertaken by FDOH: a statewide water management inventory, including locations of septic systems, and nitrogen reduction study.

Florida Water Management Inventory

The goal of the Florida Water Management Inventory project is to provide a centralized geographic data map linking each built property in the state with a drinking water source (public water or private well) and wastewater treatment method (sewer or septic). The inventory began in 2009 and to date, detailed geographic information system (GIS) data has been assimilated for 46 of the 67 counties in the state. The data compilation for the remaining counties should be completed by the end of September 2016. New funding will allow completion of a data gap analysis. The inventory is available to the public at the below link:

<http://www.floridahealth.gov/environmental-health/onsite-sewage/research/FLWMI/>.

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Specific to the WW BMAP area, FDOH calculated 60,000 built parcels of which 41% are on sewer, 57% are on septic, and 2% are unknown.

Nitrogen Reduction Study

This study, completed in December 2015, is the result of a 2009 legislative mandate for FDOH to determine passive options to reduce nitrogen in wastewater. The study had two primary components: 1) analyze existing and potential technology to passively reduce nitrogen in wastewater, and 2) determine what happens to nitrogen in a drainfield. "Passive" is the use of reactive media to reduce nitrogen loading and one liquid pump to move effluent from point A to point B.

Based on an 18-month analysis at a test facility (University of Florida Institute of Food and Agricultural Science [UF-IFAS] field station in Wimauma) and seven field sites (homes) throughout Florida, the researchers concluded the following nitrogen reduction options for onsite wastewater systems:

<u>Nitrogen Reduction</u>	<u>Type of Onsite Wastewater System</u>
30%	Conventional septic system
70%	Lined (enhanced) drainfield with existing advanced technology systems (in-ground passive nitrogen system)
93%	New advanced technology systems (in-tank passive nitrogen system)

The cost for a conventional system is \$4,100.

The in-tank passive nitrogen system is comprised of a septic tank, recirculation tank, pump tank and two stages, nitrification and denitrification, using media such as wood chips, sulfur, or oyster shells. Saturated media is used in stage 2 (denitrification). The life expectancy of media is unknown, but is projected to last as long as a conventional system. The estimated cost of a new in-tank system is \$13,000. To retrofit an existing conventional system to an in-tank system is estimated to cost \$15,500.

The in-ground passive nitrogen system is comprised of a septic tank, pump tank, and two stages, nitrification and denitrification, via an enhanced drainfield with a media liner. Media longevity is unknown, but is projected to last as long as a conventional system. The estimated cost of a new in-ground system is \$8,700. To retrofit an existing conventional system to an in-ground system is estimated to cost \$12,000.

The existing tools to analyze nitrogen loading to ground water include: NSILT (nitrogen source inventory and loading tool [DEP tool]); ArcNLET (a model developed by DEP and Florida State University), and data spreadsheets from the Water Environment Research Foundation. NSILT and ArcNLET do not use site-specific information for loading calculations. New tools as a result of the study are STUMOD-FL (Soil Treatment Unit Model) that incorporates Florida-specific soil and climate conditions; and a life cycle cost assessment tool. There are variations in results between the DEP NSILT tool and FDOH STUMOD-FL model.

The study concluded that passive systems have an immediate impact (substantially reduce the amount of nitrogen reaching ground water) and that a large separation (24 inches minimum) between the system and ground water table yields less nitrogen to the ground water.

FDOH action items as a result of the study:

1. Adopt a rule that allows in-ground passive nitrogen systems.

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2. Prepare design specifications for advanced nitrogen reducing systems for approval as performance-based treatment systems.
3. Develop a new nitrogen reduction section in Chapter 64E-6, Florida Administrative Code.
4. Conduct education and outreach on the study results and on how to install and maintain nitrogen reduction systems.
5. Share planning tools.
6. Identify funding for nitrogen reduction efforts.

The study is located at the following link: <http://www.floridahealth.gov/environmental-health/onsite-sewage/research/draftlegreportsm.pdf>.

Questions/comments by attendees

1. How much space does the in-tank system require compared to a conventional system? Elke: The in-tank system does not need much more space; the footprint can be the same as a conventional system, including the drainfield. Roxanne: The in-tank system can be designed to be load bearing, such as under a driveway; greenspace can be used for the drainfield.
2. Is the \$13,000 cost for a new in-tank system or retrofit? Elke: The cost for a new in-tank system is estimated to be \$13,000, while a retrofit is more difficult and costs more at an estimated \$15,500. However, there will be an economy of scale as more providers make these systems available.
3. What were the parameters for the test sites? Elke: The field sites were real people in real homes using a 300 gallons per day (gpd) system in a home that averaged 2,250 square feet.
4. Have there been clogging issues with the stage 1 filter? Elke: There was minimal clogging; however, some raking was needed at the top.
5. Do you have photos of the installation of these new systems? Elke: Photos are on the FDOH website.

Review of Legislative Requirements

Tiffany stated that requiring BMAPs for springsheds is new and the result of recent legislation. By June 2017, BMAPs are to be prepared for all Outstanding Florida Springs. The BMAPs are to include 5-, 10-, and 15-year milestones to meet the adopted total maximum daily loads (TMDLs) within 20 years of BMAP adoption. Each BMAP must incorporate science, prioritized projects, and public education. Each BMAP can be modified annually.

Terry reviewed the PFA requirements and stated that a PFA boundary has not yet been established for WW. He was asked who will determine the PFA boundaries. He and Tiffany responded that DEP will provide the WW NSILT (nitrogen source inventory and loading tool) final report to SWFWMD, Hernando County, and Pasco County for use in collaboratively determining the PFA.

Interactive Discussion on Public Education, Projects, and Science

Tiffany stated that this portion of the meeting will be an exchange of thoughts and ideas on the three main components of the OSTDS remediation plan: public education, projects, and science. To facilitate the discussion, she showed slides with relevant, related information from the draft (May 2016) WW Surface Water Improvement and Management (SWIM) Plan.

A question was asked about how legacy lots will be treated that are currently undeveloped and less than one acre in size. Tiffany responded that development will be in accordance with the BMAP provisions

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regarding development on property less than one acre in size. Those provisions still need to be determined for WW. Roxanne elaborated that current law states that septic systems are not allowed on less than one acre unless in accordance with the adopted BMAP.

A question was posed regarding grandfathering in of existing septic systems. Terry responded that DEP has not yet determined how to handle existing septic systems.

Public Education – Key Audiences

1. Builders associations.
2. Developers.
3. Homeowner associations.
4. Septic tank industry.
5. Realtors.
6. Policy makers – local government to Executive Office of the Governor.
7. Utility managers.
8. Public works managers.
9. Schools.
10. Camps (emphasize connection to springs).

Dennis Davis stated that champions are needed for each audience.

Public Education – Messaging

1. Convey costs on a monthly basis rather than an overall lump sum.
2. We are all part of the problem and all part of the solution ("Everybody Poops").
3. There may be a disconnect in personal value associated with WW.
4. The watershed is large.
5. Signage regarding springs throughout the watershed (e.g., Wakulla Springs).
6. Overland tours of the springshed.
7. TV commercials, particularly on Bay News 9 (if it is on television, then it must be real)
8. Case studies (cost/benefit).
9. Need OSTDS enhancement to reduce nitrogen.

Public Education – Existing Materials

1. SWFWMD springs education webpage.
2. Tampa Bay Estuary Program's "Be Floridian" campaign (target out-of-state residents).
3. City of Tallahassee's TAPP (Think About Personal Pollution) campaign.
4. SWIM Plan.
5. Blast advertisement on Zillow.
6. UF-IFAS new outreach program to homeowners.
7. Door to door (social media is not too popular in the area due to older population).

Projects

1. Hernando County just received springs funding for Oakley Island sewer infrastructure installation and four septic conversion projects at WW North, Camp-A-Wyle, Frontier Campground, and Topics RV Community).

Science

1. Identify karst areas.

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Time Constraints to Installing New OSTDS Treatment Technology

1. Elke Ursin: Will be at least nine to 12 months before FDOH has an adopted rule that allows permitting of in-ground systems. However, some proprietary technology is allowed via permit.
2. Roxanne Groover: There are no time constraints from an installation perspective. Advanced systems are already manufactured and installed in other states.
3. Kevin Vickers: Hernando County will need to amend its ordinances and land development code (LDC) to be consistent with the new legislation as well as require mandatory connections. Right now, the county cannot force connection to existing infrastructure, even if nearby.
4. Kevin Vickers: Will DEP provide resources to local governments such as a springshed model ordinance? Will DEP assist with educating the county commissioners? Terry: I will ask DEP staff if there are materials available to assist local governments. DEP will present and break the news to your commissioners.
5. Mark Green: We need to understand existing local ordinances and LDCs to provide guidance.

Time Constraints to Installing Treatment Upgrades at Wastewater Plants (WWTP)

1. Kevin Vickers: Infrastructure and facilities vary by location and distance. It takes 3–5 years to design, bid, and construct a new WWTP. A study currently underway for the county will quantify needed upgrades, prioritization, and costs.
2. Kevin Vickers: The BMAP needs to provide triggers for replacement of failing, old, or over-capacity systems.
3. Kevin Vickers: It takes two to three years from a signed grant agreement to receipt of funding.
4. Roxanne Groover: A decentralized onsite system is an alternative to septic conversion.

OSTDS Reduction Estimates

Tiffany presented a series of slides conveying the draft methodology for calculating OSTDS reductions to ground water based on the WW NSILT. Calculations were presented for an in-ground system, in-tank system, and conversion to sewer. Tiffany requested feedback on the draft methodology. Kevin Vickers asked if there is a study to support Step 5 in the septic conversion calculation. Tiffany responded that Step 5 is based on the WW NSILT, which will be provided to him.

Terry stated that DEP is focusing on load reductions, not load allocations. Kevin Vickers asked how reduction goals will be measured. Terry responded that field measurements (ground water sampling) and on-paper project calculations will be used to measure load reductions.

Additional Questions/Comments by Attendees

1. Are specifications available for the media? Is the media available? Roxanne: Specifications are currently under discussion by the Technical Review and Advisory Panel (TRAP) (a legislatively created committee to assist FDOH). The media needs to be defined first, then specifications.
2. Can there be cross-over into gray water separation as a new water source for irrigation? Roxanne: Gray water is an option, but has contaminants. Gray water could possibly be used for drip irrigation.
3. Are inspections completed to verify proper installation of septic systems? Will: FDOH completes a final inspection of all new septic systems. Last year in Hernando County, FDOH permitted 700 repairs and 250 new systems.
4. Are inspections completed to verify systems are operating as designed? Roxanne: This is a polarizing topic in Florida. Nineteen counties in Florida with first magnitude springs had the option of requiring maintenance inspections. All 19 counties opted out. Maintenance inspections

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cannot be mandated. Will: Through the sanitary nuisance program (an unfunded program), FDOH inspects obviously failing systems.

5. Adopted BMAPs that focus on surface water provide local governments credit for adopting fertilizer ordinances. Will this be done in the springs-related BMAP? Tiffany: Credits are still being determined since springs BMAPs are focused on ground water rather than surface water. DEP will seek input from FDOH.
6. Will credit be provided for increasing the separation between the drainfield and ground water table? Terry: To provide credit, DEP needs to associate load reduction with an action. Albert Gray: There is an increase in ground water separation on some repaired septic systems. For instance, if a septic system is in the ground water table, FDOH requires the system be mounded, thereby increasing distance from ground water. Tiffany: We should be able to calculate a credit based on that example.
7. Will you schedule time to talk with politicians (Hernando County)? Tiffany: Keep us posted as to when we should present to your commission. DEP upper management would like to present to your commission at an appropriate time.

Next Meeting

Terry stated that the next meeting will be in the afternoon on August 23, 2016 in Brooksville at which time we will revisit septic systems.

In the meantime, presentations from today's meeting will be placed on the DEP website at the following location:

http://publicfiles.dep.state.fl.us/DEAR/BMAP/Springs Coast/BMAPs/WW_BMAP/.

Adjournment

Tiffany requested feedback on today's meeting format and process. The meeting adjourned at 4:30 PM.

Action Items

Below are action items from the meeting.

1. Terry – Determine if DEP has guidance materials such as a springshed model ordinance to provide to Kevin Vickers.
2. Terry – Determine when DEP should present to the local commissions.
3. Cathy – Research existing local ordinances and LDCs in Pasco and Hernando counties regarding wastewater and water quality and share this information with DEP and SWFMWD.
4. Cathy – Provide final WW NSILT report to Kevin Vickers.
5. Terry – Post presentations and previous meeting notes on the DEP website.
6. Terry – Send out a save-the-date announcement for the August 23, 2016 meeting.
7. Terry – Prepare a potentiometric surface map for next meeting that shows the surface and ground water table throughout WW.
8. Terry – Follow-up with SWFMWD, Hernando County, and Pasco County on finalization of the PFA boundary.
9. Cathy – Group the public education suggestions by topic to prioritize the items.