Upper Wakulla River and Wakulla Springs Basin Management Action Plan (BMAP) Annual Update and Onsite Sewage Treatment and Disposal Systems (OSTDS) Remediation Plan Meeting Summary

Tuesday, February 14, 2017
2:00 PM
Woodville Community Center
8000 Old Woodville Road, Tallahassee, Florida

Attendees

Advisory Committee Members
Curtis Baynes, Property Owner
John Buss, City of Tallahassee
Katherine Davis, Florida Department of Health
Stan Derzypolski, Other Interests
Bob Deyle, Environmental Interest
Anthony Gaudio, Other Interests
John Hallas, Talquin Electric Cooperative
Theresa Heiker, Leon County
Sheree Keeler, Wakulla County

Others
Andrea Albertin, IFAS Extension/UF
Maria Balingit, Homeowner
Bart Bibler, WSA
Tiffany Busby, Wildwood Consulting
Melissa Corbett, Wakulla County
Greg DeAngelo, DEP
Stan Derzypolski
Jim Easterling
David Edwards
Ryan Forrester, Bay Street Engineering
Xueqing Gao, FDACS
Kathleen Greenwood, FDACS
Pamela Hall
Katie Hallas, FDACS
Chuck Herr, Wakulla County
Eric Hinten, DEP
Moira Homann, DEP
Jamie Hughes, CDM Smith
Cindy Hunt, LR HOA
John Labie
Sondra Lee, City of Tallahassee
Debbie Lightsey, WSA
Sean McGlynn, WSA FOWS
Richard Musgrove, W Source Group
Dee Ann Miller, DEP
Cheryl Minskey, DEP
Steve Peene, ATM/FDOT
Debby Preble
Johnny Richardson, Leon County
Eb Roeder, FDOH
Jerrick Saquibal, NWFWMD
Stephen Sider
Mark Thomasson, W Source Group
Elke Ursin, FDOH
Edgar Wade, Leon County
Bill Wilson
Nick Wooten, NWFWMD
Heather York, Wildwood Consulting

Welcome and Introductions

Tiffany Busby welcomed attendees to the meeting. She thanked Leon County for the use of the meeting space. She stated that the first part of the meeting will focus on the OSTDS Remediation

Plan and the second part of the meeting will be the annual update. She stated that Heather York would be taking notes. She requested that attendees please sign in as a record of attendance. The Department of Environmental Protection (DEP) also uses the sign-in sheets to maintain a distribution list for upcoming meetings and information. She stated that the meeting format for the OSTDS meeting will be different from annual meetings because the DEP wants to engage the committee members specifically. She stated that attendees could offer public comments at different points during the meeting. Attendees introduced themselves. She introduced Moira Homann as the Basin Coordinator and main point of contact for this basin.

Moira Homann thanked attendees for coming to the meeting. She provided an overview of the agenda.

OSTDS Remediation Plan Meeting

Sunshine Law Reminders

Moira reminded committee members of the Sunshine Law requirements.

Recap Items

Moira stated that several items have been posted to the public files website and are live links within the presentation. These items include the Department of Economic Opportunity (DEO) technical assistance grant information, the Florida Home Builders Association (FHBA) Septic Inventory, the Florida Onsite Wastewater Association (FOWA) public service announcements, the City of Tallahassee 2030 Master Sewer Survey, and Florida Section 319h grant information. The link to the public files website can be found at the bottom of the meeting agenda.

Greg DeAngelo stated that the DEP webpage is likely to be updated in the upcoming week. If anyone has difficulty finding the website or finds a broken web link, they can contact Moira.

Florida Department of Health (FDOH) Update

Elke Ursin stated that FDOH regulates septic systems. She is the section manager and works with Eb Roeder and Xueqing Gao who also are present today. She stated that there are two new methods of nitrogen reduction from OSTDS including in-ground systems and in-tank options. The FDOH is working on a rule to allow in-ground systems using a liner component. The FDOH Technical Review and Advisory Panel (TRAP) is advising FDOH on rule development. At a meeting on December 9, 2016, the TRAP allowed the rule development to move forward with changes to the variance panel.

Elke stated that the in-tank options do not require a rule change, but the FDOH is working to determine scaling and sizing criteria for designs that can be implemented in the field. Once this is complete, these new performance based systems will be available for permitting.

Elke stated that the FDOH also has been working with local utilities to complete the Florida Water Management Inventory. She stated that FDOH is also working to expand on a project by Jamie Hughes to include soil information and depth to groundwater.

Anthony Gaudio asked if TRAP is looking at performance verification for the in-ground systems. Elke responded that FDOH is looking at phased implementation and doing sampling on different systems. Anthony stated that the in-tank systems can be sampled at any time, but this would be costly for in-ground systems. Elke stated that the monitoring of in-ground systems is being done during a pilot project, so this type of monitoring would not need to be conducted by all homeowners.

Curtis Baynes stated that Dr. Gao distributed a handout during a recent OSTDS meeting that stated many systems were under study. Dr. Gao stated that the study is complete, data are available, and now FDOH is developing criteria and scaling for those systems. Elke stated that the idea is not to state which product must be used but to set a percent nitrogen removal for the systems to achieve. Curtis stated that he is not aware of any systems that remove 80 or 90 percent nitrogen. Anthony stated that some of the systems can meet that criteria and the committee will need to decide on the removal criteria for systems. Elke added that there is a list on the FDOH website, including approved systems and removal information.

Stan Derzypolski asked if monitoring could be conducted for the liner systems. Elke stated that the liner systems will not have as high of performance as some of the in-tank systems. The in-ground systems are not performance-based, but their removal rates will be verified during the pilot project.

Debbie Lightsey asked what the minimum nitrate reduction is in the priority focus areas (PFAs). Tiffany and Elke stated that this has not been established yet. Greg stated that there is a cost for monitoring. He stated that based on DEP studies there will be significant testing to show a range of performance we can expect. He added that the DEP recommendation would be to assume the lower end of the range to be conservative. He recommended a conservative approach to the advisory committee. Debbie asked if that means that some of the septic systems will be fixed and others will be left alone to leach nitrogen into the groundwater. Greg responded that he did not mean to imply this conclusion. Moira stated that not every system can be fixed. Pam Hall asked if a homeowner could wait to connect to sanitary sewer until a system fails. She wanted to know how quickly people would use sanitary sewer. Bob Deyle stated that nothing prevents us from concluding that every system has to be upgraded. He added that all options are on the table. He stated that connections could be required in some areas, some areas could require different levels of treatment, and there could be different options for new and existing systems.

John Buss expressed frustration at the lack of substantive work completed to date. He asked when the committee would be setting the goals and dealing with the numbers. Sheree Keeler and Anthony agreed. Anthony asked when we will set the standard for each generator to achieve the total maximum daily load (TMDL) and what the methodology will be for the process. Curtis stated that every septic tank will probably be replaced over the next 20 to 25 years. He wondered what the tanks will be replaced with and what will be most cost effective. He asked if the committee will undertake any policy issues. He asked how the committee will determine when, where, and what is needed. Bob was glad John cut to the chase and stated that it may be time for Gantt charts to help us set the process and timeline. Moira stated that she has a pie chart prepared

to present today showing the loads and estimated loads from each source in pounds per year of nitrogen.

Theresa stated that the committee was told that the implementation plan would be developed by DEP. Moira stated that during each meeting information is being collected from the committee to assist DEP in developing the plan. Greg stated that DEP will develop the plan. Sheree asked if there is anything to require cities and counties to comply with the plan, such as legislation. Greg stated that the Florida Springs Protection Act requires action through legislation. Once the implementation plan is adopted in the BMAP, then it is enforceable by Secretarial Order. He agreed it would be more difficult to require individual homeowners to comply. Greg agreed that it is time to get to the numbers and added that DEP is close to being able to do just this. John stated that he thought we would see the numbers during this meeting according to Moira, but that Greg stated it would be next meeting. He added that the Lombardo Report stated what is needed. He stated that he is aware it is uncomfortable and there will be political fallout, but everyone needs to know the magnitude of what needs to be achieved. Moira stated that the BMAP will be revised to address OSTDS by July 2018. Anthony stated that unless we know what we plan to do and what others can expect, then we don't know what to communicate. He added that we do not know the cost, funding, or options.

Debbie asked if numbers are provided during the next meeting would that only be for performance-based systems. She stated that installation of sanitary sewer lines does not ensure hookups, so the reduction cannot be counted. Anthony stated that entities are required to notify property owners of sanitary sewer availability and then the property owner has 365 days to hookup. He added that many times the entities will not provide notification to the property owners. Theresa stated that many times the property owner is not told that there is an option to upgrade their system. Anthony would like to see county staff dedicated to informing property owners. Theresa stated that she could bring that recommendation to the Board of County Commissioners to see if they would commit to this effort. John stated that the reason people do not connect is because they can get a variance if there is no human health problem. John asked if the committee could add language in the BMAP to require connections in the PFA. Tiffany stated that this is a legal question.

John stated that on average the connection rate for a new sanitary sewer line is only 17 percent. He added that this can increase with good education and pre-installation commitments such as Theresa achieved for her new project. Bob recommended writing down the assumptions for load reductions from sanitary sewer line installation.

Stan stated that the committee has not discussed septic tank inspections. He would like the committee to consider a five year inspection requirement. He stated that Shell Point is one example of sanitary sewer availability, but lack of connections due to the cost to homeowners. Tiffany agreed that discussing finance options will be important.

Pam asked if she understood Theresa correctly that there is an option for the homeowners to receive financial assistance with connections to sanitary sewer or for the homeowner to be responsible for a sanitary sewer upgrade. She stated that upgrades are costly too. Theresa stated

that there is also an operation cost for performance based systems too. Pam suggested consideration of options and opportunities for all types of systems.

Moira stated that one item the DEP has been discussing is having a local entity create a grant program for homeowners. She suggested that this could be a project in the OSTDS remediation plan. Pam stated that the first education priority be to convey the true cost of the various options. Moira stated that education can begin now rather than waiting for an education plan to be finalized.

Education Plan Priorities

Moira displayed feedback received on the public education priorities. Tiffany thanked entities that have responded, but DEP would like to have a better response rate. She asked attendees to send feedback to Moira.

Septic Tank Conversion Prioritization Using Geographic Information System (GIS) in the Wakulla Springs Springshed

Tiffany introduced Jamie Hughes with CDM Smith to discuss a tool she developed in graduate school. Jamie developed the septic tank conversion prioritization using GIS in the Wakulla Springs Springshed. Jamie conducted research prior to development of the GIS prioritization and stated the following:

1. The state has funding available for conversions.
2. The Lombardo Report is focused on options, but did not prioritize location.
3. A prioritization has not been developed for the most critical conversion projects in the springshed.

Jamie stated that her goal with the project was to visually give direction on where septic conversion is more critical, but was not to recommend a type of conversion.

Jamie created a GIS raster analysis that prioritizes septic tank conversions by septic parcel within the BMAP PFAs. She explained that raster datasets represent geographic features by dividing the world into discrete square cells laid out in a grid. The cells can represent any number of characteristics at that location. The five layers she chose for her prioritization criteria included the following:

1. Layer 1 – groundwater pollution vulnerability.
2. Layer 2 – locational density of septic systems.
3. Layer 3 – distance to existing central wastewater system infrastructure.
4. Layer 4 – location within springshed.
5. Layer 5 – proximity to underground caves.

Jamie displayed her data sources and analysis parameters. She stated that each square was given a value between one and five. One indicated low priority and five indicated high priority. She selected a cell size of 10 feet. She displayed Layer 1 of groundwater pollution vulnerability. In each layer, the red indicates high priority and dark green indicates low priority. She then used Leon County and Wakulla County parcel inventories for septic and sewer. She calculated the

density of septic systems, assuming one septic system per parcel. She combined the county data to create Layer 2.

For Layer 3, Jamie stated that she looked at the distance to existing infrastructure with the understanding that sanitary sewer lines usually follow a road. She displayed Layer 3. Jamie created Layer 4 using PFA one with a value of five and PFA two with a value of three. She displayed Layer 5 showing the prioritization of distance to groundwater caves. Jamie stated that she added the five layers together for the analysis using a Raster calculator and pointed out the table of counts per cell. She then used zonal statistics to convert the cell data to parcel data. The map she displayed used the median of each parcel. She reiterated that the analysis output does not provide recommendations for the type of septic tank conversion, but provides insight for where conversion should have higher priority. Jamie was able to zoom into a few areas with roads as reference. Bob summarized the map stating that the red parcels have the highest aquifer vulnerability, highest density, are closest to existing infrastructure, and closest to the cave system. Jamie agreed.

Theresa asked if the analysis could be run again if Leon County provided a more accurate count of tanks per parcel. Jamie stated this could be done. Bob stated that the current tool has the capability to answer questions and with a few tweaks could help us know where cluster systems would be beneficial. Anthony stated that funding for the refinements could come from Blueprint 2000. Jamie provided a link to the active map through the National Audubon Society for viewing after the meeting. Pam asked about ownership of the prioritization tools. Moira stated that she would follow up regarding ownership.

Anthony stated that he looked up the statute regarding sanitary sewer connections. He stated that a property owner must connect within 365 days. The only exception is if there is a performance-based system and it is not in an area of state critical concern. John stated that the City of Tallahassee has no interest in managing a septic tank utility or management entity.

Theresa asked if the DEP would allow this type of tool to be used in place of the nitrogen source inventory and loading tool (NSILT). Moira stated that NSILT gives us the loading and will tell us how many septic systems need to be converted or upgraded. This prioritization tool Jamie developed will help us to understand where the conversions need to occur.

Tiffany offered an opportunity for public comment. There were no public comments. Moira suggested Tuesday, May 9, 2017 as a tentative date for the next OSTDS advisory committee meeting. Stan will not be available that day. Theresa stated that she would like to have the numbers prior to the meeting. Greg agreed it would be good to send the numbers out in advance and suggested a target date of April 11, 2017. Moira will reserve a room.

Pam stated that a few meetings ago the committee was going to come up with load reductions associated with the removal of one septic tank. She asked if this information would be a part of the numbers that will be distributed. Pam stated that the Northwest Florida Water Management District (NWFWMD) has a straightforward approach. Greg agreed and added that DEP is in the process of developing a structured approach.

Adjourn OSTDS Committee

The OSTDS remediation plan meeting adjourned at 3:59 PM.

Upper Wakulla River and Wakulla Springs BMAP Annual Update

Annual Progress Report Updates

Moira provided an overview of the BMAP. She stated that the BMAP was adopted in October 2015 to implement nitrate reductions to achieve the Upper Wakulla River TMDL. The BMAP focuses on addressing nitrate loading from wastewater treatment facilities (WWTFs), OSTDS, fertilizer, and livestock. She stated that there is a target reduction and concentration with a five year timeframe for the projects. Moira stated that the reporting period is November 1, 2015 through October 31, 2016. She added that DEP has received updates from some stakeholders but she is still waiting for a few more. She reminded attendees that for this BMAP, biology must be met in addition to meeting the TMDL.

Moira stated that there are 106 projects in the BMAP. Eighty-five of these projects are completed and 21 are underway. In addition, the City of Tallahassee and Wakulla County added a total of nine new projects with their annual update.

Moira displayed a graph of nitrate-nitrite water quality trends in the Wakulla River and Wakulla Spring vent. She stated that the highest nitrate concentration is found at the spring vent, and the nitrate concentration decreases as the water moves downriver. When comparing the data from the TMDL verified period (2000–07) with more recent data (2008–16), nitrate concentrations at the vent are declining. She displayed a graph of nitrate-nitrite water quality trends in the Wakulla Spring tunnels. She stated that we do see a decreasing trend. The concentrations in tunnels B, C, and D are higher than in the main vent. She stated that these graphs and a figure of the tunnel contributing areas are in the draft annual report.

Bob stated that K tunnel is the inflow from R tunnel which comes from the Apalachicola National Forest. He stated that the Q tunnel is from Lost Creek. He stated that these surface waters are low in nitrogen which is diluting the concentration to the spring vent. The reason why the graphs jump around is because of base flow or surface water contributions. He stated that higher rainfall equals more dilution.

Moira stated that samples are collected quarterly and the graphs represent raw data from the grab samples. Bob stated that continuous data is being collected at the boat dock.

Moira stated that specific questions regarding the biological community trends could be sent to Joy Jackson at DEP. She stated that the DEP and NWFWMD collect quarterly water chemistry and biological samples at two locations in the Wakulla River. Moira showed two graphs showing the stream condition index (SCI) and rapid periphyton survey (RPS). Bob asked what the SCI measures. Johnny Richardson stated that the SCI measures the biological community including macroinvertebrates. Johnny asked if the habitat scoring will be in the report. Moira responded that she would check and would let him know. Bob asked if the impairment was based on the SCI. Moira responded that was correct. Greg added that the new criteria developed with the

numeric nutrient criterial includes water chemistry and four biological indices: SCI, RPS, lakes vegetation index (LVI), and linear vegetative survey (LVS). Anthony asked if these four biological indices must be met in addition to the nitrate TMDL. Moira responded that all would need to be met. Moira added that she could check on the period of record for the RPS, LVI, and LVS. Tiffany added that the biological response is not necessarily directly correlated with nitrate concentration. Dr. Gao asked if the general Hierarchy 1 stream metrics apply here in addition to the TMDL. Greg stated that he would double check. He added that if the TMDL was adopted as Hierarchy 1 then it would be for nitrogen, phosphorus, and chlorophyll. Andrea Albertin stated that she is aware of older algal data.

Moira introduced Katie Hallas with the Florida Department of Agriculture and Consumer Services (FDACS) to provide an update. Katie is the administrator for water policy and planning at FDACS. She stated that Kathleen Greenwood is the new representative for this basin and the best point of contact for this BMAP.

Katie Hallas stated that agricultural best management practices (BMPs) are practical measures that reduce the amount of fertilizers, pesticides, and animal waste that enter the water resources. The BMP manuals were developed in collaboration with the agricultural industry, agencies, and others. The BMP manuals are adopted by rule after DEP verifies the BMPs. The BMPs must be economically and technically feasible for producers to implement. She added that the structural BMPs can be costly. In this basin, the main commodity is cows and calves. There are cost share programs through the NWFWMD for agricultural producers.

Katie stated that FDACS has nine programs adopted to date and the associated manuals are reviewed every five years. Each of the manuals is available on the FDACS website and in hard copy by request. The most recently adopted manuals are the poultry manual, vegetable and agronomic crop manual, and dairy manual. FDACS is also developing a new manual for small farms which should be adopted later this year.

Katie stated that agricultural producers can enroll in the BMP program or conduct monitoring per an approved DEP plan. To date, there are no producers conducting monitoring. Katie stated that FDACS has assigned one person to the Wakulla BMAP area and the enrollment database is updated quarterly. She displayed figures showing BMAP enrollment inside the PFAs as of September 2016 and outside of the PFAs as of September 2016. Dr. Gao asked if FDACS is focusing only on nutrients here. Katie stated that the focus is nutrients but if there is a fecal TMDL then those producers would also be required to enroll in the BMP program for that commodity or conduct monitoring. Katie added that all of the BMP manuals also address waste management.

Katie stated that according to the 2009 NWFWMD land use, a total of 5,809 agricultural acres are within the PFAs in basin and a total of 58,540 agricultural acres are outside of the PFAs. She pointed out that land uses change over time and it is difficult to have completely accurate land use. She added that not all of these acres are eligible for enrollment. Roughly 12 % of the acres are enrolled in BMPs within the PFAs and roughly 15 % are enrolled outside of the PFAs. Bob pointed out that using the acreage enrolled by FDACS may be a more accurate way of reporting

the information. Katie added that FDACS is working to refine the reporting and that FDACS also is looking at irrigation use around the state.

Anthony stated that the reporting for fallow cropland does not appear to be correct and appears to be under-reported. Katie stated that this could be due to a misinterpretation of the land use aerial.

Another program that FDACS is pursuing is the Implementation Verification Program, previously referred to as the Implementation Assurance Program. Katie stated that this is a new requirement for FDACS in the water bill. The implementation assurance program started in 2005 to visit producers to see if the manuals needed to be updated and to verify. FDACS has conducted 1,936 site visits from 2007 through 2015. The implementation verification program builds on this program. Field staff now go back through the checklist of BMPs with the producer to ensure the BMPs are being implemented. If a grower is not in compliance for a period of time then the grower will be referred to DEP for compliance. Compliance information will be included in annual reports after July 1, 2018. John asked if Katie had an idea of the rate of compliance in the Wakulla Basin. Katie believes it will be high, but will need to educate field staff and producers.

Moira introduced Nick Wooten with the NWFWMD to provide a project update. Nick displayed a figure of the locations of projects within the Wakulla Springs Basin. He stated that the NWFWMD funded six projects to local governments including Leon County, the City of Tallahassee, and Wakulla County. All but one of these projects is a septic to sewer project. If all septic tanks are connected to sewer, then 2,500 septic tanks will be removed. He provided a slide with the details of each project.

Moira asked John if he would like to provide an update for any city projects. John stated that the City of Tallahassee project will pay for connections so the only cost to homeowners will be the monthly service fee. Sanitary sewer is already installed in front of their homes. Nick added that it will be important to send the right message to homeowners. John stated that these are gravity sewer. John stated that the city also is starting some education for septic to sewer projects and Wakulla Springs issues.

Moira gave Theresa an opportunity to provide an update on any county projects. Theresa stated that the county completed the low impact development ordinance with incentives primarily for commercial development.

Moira introduced Bob Deyle to provide an update to the *Vallisneria* and *Sagitarria* restoration project initiative. Bob displayed a photo of Wakulla Springs from 1967 with submerged aquatic vegetation (SAV) dominated by *Sagittaria*. He stated that by 2000 the springs were overrun by hydrilla. A seasonal herbicide treatment was applied but the treatment also killed other species. Algae grew back along with hydrilla which attracted manatees to the springs. After 2012 and 2013, the manatees ate the hydrilla to a point it did not bounce back. The loss of hydrilla may be also partially due to improvements at the City of Tallahassee sprayfield.

Bob stated that Wakulla Springs State Park staff and volunteers have conducted a three year SAV survey and have determined that bare sediment is increasing. He is working on a proposal

to revegetate the bare sediment areas with *Sagitarria*. He stated that if the revegetation is successful then the SCI scores will improve. Park staff did some revegetation in 2005 to 2010 with *Vallisneria* because it is more tolerant to the herbicide the park used at the time.

Edgar Wade asked if anyone was looking at the amount of organic carbon for the revegetation. Bob stated that he has taken simple measurements of the depth of organic matter. Edgar stated that he has read some research papers stating that *Sagitarria* is susceptible to variance in water chemistry and organic matter. He added that *Vallisneria* is heartier.

2016-1 Requirements Review/Springshed Nitrogen Sources

Moira displayed the requirements of Chapter 2016-1 Laws of Florida and reminded attendees that the BMAP must be revised to include additional information and goals by July 1, 2018. She stated that the meeting presentations will be posted to the public files website.

Urban Turfgrass Discussion

Moira stated that due to time constraints this discussion will be tabled until an upcoming meeting.

Summary and Action Items

- Stakeholders will provide updates to Moira for the annual report.
- Stakeholders will provide OSTDS education priorities to Moira.
- Moira will follow up with Jamie Hughes regarding ownership of the septic tank conversion prioritization tool using GIS.
- Moira will send the number of septic tanks needing conversion to the OSTDS advisory committee for review prior to the next meeting.
- Moira will respond to Johnny Richardson regarding the habitat scoring during the SCI.
- Moira will reserve a room for the next OSTDS advisory committee meeting.

Next Meeting Date

The next meeting of the OSTDS advisory committee was tentatively scheduled for May 9, 2017.

Adjourn

The meeting adjourned at 5:29 PM.