

**Wekiva River, Rock Springs Run, and Little Wekiva Canal
Basin Management Action Plan (BMAP)
Onsite Sewage Treatment and Disposal System (OSTDS) Committee Meeting Summary
Tuesday, August 15, 2017
9:30 AM
Public Works West Altamonte Operations Facility
(Lake Lotus Training Room)
950 Calabria Drive
Altamonte Springs, FL 32714**

Attendees

Advisory Committee Members

Julie Bortles, Orange County
Mike Cliburn, Friends of Wekiva
Roxanne Groover, FOWA
Bart Harriss, FDOH
Danielle Marshall, City of Altamonte
Kim Ornberg, Seminole County
Kate Rogers, City of Apopka
Bob Samson, Homeowners

Others

Quinten Beitel
Mary Brabham, SJRWMD
Leigh Brooks, FDACS
Keith Browning, OUC
Dominique Buhot, Greens Environmental
Service
Kevin Coyne, DEP
Susan Davis, SJRWMD
Teayann Duclos, E Sciences for FDOT
Chris Ferraro, DEP
Scott Franz, CFL Soil Solutions
Charles Friel, CAWLBS
Xueqing Gao, FDOH
Madeline Hart, FDACS
Charles Henry, FDOH
Casey Fitzgerald, SJRWMD

Moira Homann, DEP
Barbara Howell, DEP
Celeste Lyon, DEP
Nicholas Mcray, Lake County
Victoria Messina, Water Resource Technology
Steve Peene, ATM
Erin Reed, Geosyntec
Antony Rios, ECS
Sherry R., SLR Environmental Services
Deborah Shelley, DEP
Laura Savage, Wildwood Consulting
Greg Taylor, Wright-Pierce
Charles Whitaker
Mark Whittingham, Water Resource
Technologies

Welcome and Introductions

Tiffany Busby welcomed everyone to the meeting and thanked the City of Altamonte Springs for use of the meeting room. She provided background information on the BMAP and discussed efforts to date. She reminded the attendees to sign in and discussed the importance of the sign in sheets. She then introduced Moira Homann as the basin coordinator and requested each person in the room introduce them self and the entity they represent. Moira thanked attendees for coming to the meeting and provided an overview of the agenda.

Recap Items

Moira provided a recap of the following items:

- She is currently working on final edits to the annual progress report and will send a link to the report once it is posted to the Florida Department of Environmental Protection (DEP) website.
- A public teleconference was held on August 1, 2017 to discuss an OSTDS campaign. During the teleconference, Orange County announced that they applied for \$319 grant funding for OSTDS and urban fertilizer public education. Orange County is interested in partnering with others on this effort. Anyone interested in partnering with Orange County should contact Moira. Moira can arrange another meeting if there is interest.
- The draft BMAPs for several springs, including Volusia Blue, Suwannee, and Crystal River/Kings Bay will be posted for public review soon.
- The Fish and Wildlife Foundation of Florida is accepting grant proposals for fiscal year 2017-2018 Protect Florida Springs Tag Grants Program. Eligible applicants include federal, state, and local government agencies as well as public and private colleges and universities, and 501(c)(3) non-profit organizations. The deadline for submission is September 15, 2017. Additional information is available on the Fish and Wildlife Foundation of Florida website; a link to the website is provided in today's meeting presentation.

Nitrogen Source Inventory Methodology and Draft Results

Celeste Lyon, with the DEP Groundwater Management Section, presented the nitrogen source inventory and loading tool (NSILT) methodology and draft results. The NSILT was developed to identify and quantify the major sources of nitrogen contributing to groundwater in a springshed. Celeste displayed a map of the springshed and priority focus area (PFA). Tiffany stated that a PFA is defined in the Florida Springs and Aquifer Protection Act as the area of a basin where the Floridan aquifer is generally most vulnerable to pollutant inputs and where there is a known connectivity between groundwater pathways and a spring. She added that there are additional requirements and certain activities prohibited in the PFA. Chris Ferraro asked if the eastern edge of Lake Apopka is in the PFA. Celeste responded that Lake Apopka is not located in the PFA. She noted that additional maps and information on the PFA is available in a separate report, which is posted on the DEP file transfer protocol (FTP) site.

The steps to estimate the nitrogen load to groundwater include:

1. Estimate the nitrogen input to the land surface from various sources (best available data) within the springshed.
2. Estimate the environment's ability to uptake and utilize the nitrogen. This process is called "attenuation."
3. Evaluate the degree of recharge within the springshed; this naturally varies based on geologic conditions and influences the quantity of water reaching the aquifer. DEP applies a weighted recharge factor to account for the variation in geologic conditions.

4. Reach out to stakeholders regarding estimates and methodology and fine tune as needed.

Based on the NSILT, the nitrogen sources to land surface include atmospheric deposition, domestic wastewater (i.e., wastewater treatment facilities [WWTFs]), OSTDS, livestock waste, farm fertilizer, urban turfgrass fertilizer, and sport field turfgrass fertilizer. The nitrogen loads from these sources are calculated using literature values, property appraiser data, census data, and other data sources. Once the nitrogen input to the land surface from each source is estimated, a biochemical attenuation factor is applied. The attenuation factor represents the percentage of nitrogen removed through biochemical processes and therefore not available for leaching to the groundwater. OSTDS includes a range of attenuation factors that resulted from a study performed in the basin. The attenuation factors range from 22 % to 96 % due to different site properties (i.e., soil type, depth to water table, and recharge rates). Approximately 55 % of the OSTDS in the springshed were assigned an attenuation factor of 57 %. The DEP standard attenuation factor used for OSTDS is 50 %. The final step in estimating nitrogen loads to groundwater is to account for the additional attenuation associated with the rate of recharge in a given year. Recharge factors are used to estimate the percentage of the non-attenuated nitrogen expected to reach the aquifer in a given year. In the high recharge area, it is estimated that 90 % of the non-attenuated nitrogen will reach the aquifer, 50 % in the medium recharge area, and 10 % in the low recharge area.

The NSILT results show that OSTDS is the largest source at 29 %, followed by urban fertilizer at 26 %, and WWTFs at 17 %. Overall, the estimated annual average nitrogen loading to groundwater in the Wekiva BMAP area is 1,015,853 pounds of nitrogen per year (lb-N/yr).

The following comments and questions were discussed:

- How were fertilizer applications near OSTDS attenuation test areas partitioned/excluded from the OSTDS groundwater loadings? Celeste replied that data spikes (with confirmed fertilizer application dates/information) were excluded from the data and not used to calibrate the OSTDS attenuation model.
- Is recreational use at the state park considered a source? The park is heavily populated at times and has been closed due to high bacteria counts. Celeste replied that recreational use at the park can impact the water quality of the spring run and pool (surface waters). The focus of this BMAP is groundwater quality, which discharges from the spring vent.
- Does the list of WWTFs include small and privately-owned WWTFs? Celeste replied that the list of WWTFs in the NSILT includes all DEP permitted WWTFs—both privately and publicly-owned facilities.
- Were parameters other than nitrogen used to calibrate the OSTDS attenuation model? Celeste responded that only nitrogen was used to calibrate the model.
- The OSTDS study took approximately 18 months to complete. The sampling portion of the study lasted approximately 12 months. Celeste recently completed the model write-up for the report. The final report will be posted once it is available. In the meantime, a summary of the study and results are available on the DEP website as part of the May 11, 2017 meeting PowerPoint presentation.

- Is 1,015,853 lb/yr the total nitrogen load to groundwater? The Wekiva River Basin Nitrate Sourcing Study (MACTEC report) estimated over 4,000,000 lb-N/yr to groundwater. It was suggested that the MACTEC study may have included the entire basin whereas the NSILT focused on the springshed. Also, the NSILT reports land input loads and groundwater loads. It is uncertain if this was split out in the MACTEC report.
- Does the WWTF source include irrigation/reuse? Celeste responded yes.
- What drainfield configuration and water table separation was selected for the attenuation model? Celeste responding that the drainfield bed was assumed to be unequal and the water table separation selected was from a St. Johns River Water Management District (SJRWMD) study.
- Why were biosolid and septage land application sites not included in the NSILT? Biosolid and septage land application sites are prohibited in the Wekiva basin—this rule went into effect in 2006.
- Were average or daily values used to calculate the WWTF loadings? Celeste respond that it depended on the available data.

Moira notified the attendees that the NSILT report is not ready at this time, but she will post today's presentation which includes the NSILT methodology and results.

Draft Approaches to Achieve Reductions and Restoration

Moira stated that the Wekiwa spring vent total maximum daily load (TMDL) target concentration is 0.286 milligrams per liter (mg/L). The Florida Springs and Aquifer Protection Act includes provisions that a TMDL must be achieved no more than 20 years after the adoption of the BMAP. The BMAP provides for a phased implementation schedule (5-, 10-, and 15-year targets) designed to achieve incremental reductions within the first 15 years. The remaining 5 years are reserved to allow adjustments to management strategies, if needed. The standard nitrogen reduction milestones to set targets for achieving the overall reduction to meet the TMDL are the following: 5-year (30 %), 10-year (50 %), and 15-year (20%). Moira stated the percent reduction assigned to each milestone is flexible as long as the total reduction sums to 100 %. Feedback on the percent reduction milestones may be provided.

The total required reductions are determined by first calculating the difference between the estimated total load at the spring vent (current concentration times current flow) and the TMDL load (target concentration times current flow). The reductions from projects (planned and completed) are then calculated. The remaining reduction balance (gap) is estimated by subtracting the total reduction required from the project reductions.

The following comments and questions were discussed:

- Will cost and impact on the community be assessed? Moira responded that once the reduction/gap is known then the types and costs of projects can be assessed.
- Moira stated that the date range for the concentration and flow data has not been selected. She will work with SJRWMD and DEP experts to determine a period that is representative.
- Does the gap include reductions for all sources? Moira responded yes.

- Will previously submitted projects need to be re-evaluated to determine if they are in the springshed? Projects are currently submitted for the entire BMAP area. Moira responded that the projects will need to be reevaluated and applied to either the BMAP area which benefits surface water quality, or the springshed area which benefits groundwater quality.
- Do projects get weighted based on the project location? For instance, will a project receive higher reductions if it is located in a PFA? Tiffany responded that the attenuation factor and recharge factors (biochemical and hydrogeological) weigh the project benefits to groundwater.
- Will the information presented today be presented at another public meeting that covers other sources besides OSTDS? It appeared based on the notice that today's meeting is an OSTDS advisory committee meeting. Moira responded that the meeting today is a public meeting.
- Will reevaluation of the spring's condition reset the reduction goal? Moira responded that the NSILT and the required reductions will be reevaluated after 5 years. The reduction goal could change based on this 5-year evaluation.
- Will the BMAP address new rapid infiltration basins (RIBs)? Moira responded yes; the statute prohibits in the PFA new domestic wastewater disposal facilities, including RIBs, with permitted capacities of 100,000 gallons per day (gpd) or more, except for those facilities that meet an advanced wastewater treatment (AWT) standard of no more than 3 mg/L total nitrogen (TN) on an annual permitted basis.

Moira provided an example of the gap analysis and then reviewed possible approaches to achieve the remaining reductions. Some of the approaches reviewed included OSTDS (enhancement or replacement), WWTF upgrades (inside and outside the PFA), and urban turfgrass measures that exceed the standard.

- Tiffany stated that a fertilizer ordinance receives 0.5 % credit. In order to receive the full 6 % credit, additional ordinances (e.g., irrigation, pet waste, and landscape) and other educational activities are required. It was noted that the fertilizer ordinance is a requirement of the municipal separate storm sewer system (MS4) permit.
- How do you receive educational credits beyond 6 %? What do you have to provide? Kevin Coyne responded that entities can collect and provide monitoring data to quantify reduction credits for additional measures.
- Does DEP have specifics on data required to quantify reduction credits for additional educational measures? Tiffany responded that data must demonstrate a measurable outcome. It was noted that surveys are a good tool for measuring behavior change. It was suggested that DEP have discussions to determine how people can measurably go beyond the 6 % credit.
- There was a discussion regarding county ordinances and homeowner association (HOA) requirements. The HOA requirements tend to contradict county ordinances and state laws. Kim stated that Seminole County developed a checklist to assist land owners with general lawn care. Roxanne Groover stated that there is a disconnect between HOA and

county requirements. For instance, a HOA started to pursue legal action on a homeowner until the HOA was educated by an University of Florida (UF) Institute of Food and Agriculture Sciences (IFAS) extension office. The HOA dropped the legal action immediately after talking to the extension office.

- Kim stated that Seminole County is conducting a study to quantify water quality benefits from educational efforts. The study includes groundwater, surface water, and stormwater runoff monitoring.
- Is there a reduction in TN after septic tank pump outs? Moira responded that Rick Hicks study showed no significant difference. Tiffany noted that septic tank pump outs do not provide water quality benefits, but can extend the life of a drainfield and benefit the homeowner and their overall costs for the system.
- Would it help to fix or take failing septic systems offline? Xueqing Gao responded that the majority of TN is coming from functioning septic systems. Even if a OSTDS is well maintained, it is not enough to reduce the TN.
- When does DEP want project information to address the gap? Moira responded that she does not a specific date in mind right now. Kevin suggested holding off on project collection until the draft springs BMAPs (i.e., Volusia Blue, Suwannee, and Crystal River/Kings Bay) with the new legislative requirements are posted.
- Roxanne stated that money should be spent on projects that work.
- Bob suggested adding dollar per pound cost estimate to the BMAP management strategies. He added that this data will make it easier to communicate the final BMAP to the general public.
- Bart Harriss commented that fertilizer is cheaper to reduce than other sources such as OSTDS, but if OSTDS are a major contributor than this source should have required reductions.

Moira concluded the meeting with a review of listed challenges and next steps.

Wrap Up

Moira noted that the Wekiva BMAP will be adopted by July 1, 2018. The draft document should be ready around April 2018. The draft Volusia Blue, Suwannee, and Crystal River/Kings Bay BMAPs should be posted to the DEP FTP site in the next few weeks. Moira suggested that the stakeholders review the plans to get an overview of the new approach and to review the new legislative requirements.

The next meeting was tentatively scheduled for the first week of November. Moira will send a save-the-date email to confirm the meeting date and time.

Adjournment

The meeting adjourned at 11:40 AM.

Action Items

The below action items were identified during the meeting:

- Moira- Address comments on the draft progress report and post the final report to the DEP website. Notify stakeholders when the report is posted.
- All- Contact Moira if you are interested in partnering with Orange County on an educational campaign.
- All- If interested, submit a grant application to the Fish and Wildlife Foundation of Florida for spings tag funding by September 15, 2017. Additional information is available on the Fish and Wildlife Foundation of Florida website.
- All- Review the draft Volusia Blue Spring BMAP (as well as Suwannee and Crystal River/ Kings Bay) to get an idea of the new spring's BMAP approach. The draft plans should be posted on the DEP FTP site within the next couple of weeks.
- Moira- Post the presentation from today's meeting.
- Moira- Post Rick Hick's OSTDS study report, once it is available.
- All-Review and provide feedback on the standard percent reductions assigned to the TMDL 5-, 10-, and 15-year milestones.
- Moira- Work with the SJRWMD and DEP experts to determine a representative date range for the concentration and flow data.
- Moira- Evaluate existing project locations to determine if they occur in the springshed area or BMAP area.
- Moira- Determine if attenuation actors will be applied to existing projects.
- Moira- Consider presenting the NSILT results to a larger audience.
- Kevin/DEP- Have discussions to determine how stakeholders can measurably go beyond the 6 % education and outreach credit.
- Kevin/Casey Fitzgerald- Research state laws on Florida Friendly landscape and how they relate to/effect HOA requirements.
- Moira- Send a save-the-date email to confirm the next meeting date and time. The meeting was tentatively scheduled for the first week of November. Try to avoid meeting rooms that have elections that week.