

Silver Springs Basin Management Action Plan Meeting

November 25, 2014

Growth Services Conference Room

2710 E. Silver Springs Blvd, Ocala, FL 34479

Opening Remarks and Meeting Goals – Shane Williams

Brief Introduction

Agency Updates – Various

Florida Department of Agriculture and Consumer Services (FDACS) – The \$250,000 we received for the cost-share program in Marion County is almost all gone at this time.

St. Johns River Water Management District (SJRWMD) – We are in the process of rolling out our cost-share program for next year. There will be a workshop on December 15th at our headquarters in Palatka, and one on December 16th at our Maitland Service Center to go over the application process. The application form and preparation guidelines will come out on December 15th. We are going to be looking at agriculture applications and a district-wide agriculture cost-share. We will be doing some stakeholder meetings on this soon and information should come out in the next few weeks.

Updates since the September Meeting – Mary Paulic

- Since the last meeting, there have been three meetings with utility or stormwater directors.
 - We discussed where they were with projects and loading estimates.
 - We also started to touch upon the topic of Onsite Sewage Treatment Disposal Systems (OSTDS), which we will get more into today.
 - We are now trying to refrain from calling them septic, and will instead be using the term OSTDS.
- The Florida Department of Environmental Protection (DEP) is initiating Total Maximum Daily Load (TMDL) development for Lake Weir in Marion County.
 - There was a public meeting held for this on November 19th.
 - We are not initiating rule-making at this time. Public workshops are scheduled for early 2015.
- We were invited to a discussion with FDACS that mostly dealt with the Rainbow Springs BMAP area.

- There were some good ideas brought up for projects with DEP funds.

Comment – I just wanted to make everyone aware that Silver Springs State Park is getting municipal hook-up and doing away with the OSTDS.

- There is a lot of work that goes on behind the scenes to get the draft BMAP document together. The focus has been meeting with people to gather information and data to put the various pieces together.

Question – How will Amendment 1 impact the BMAP programs for Silver and Rainbow Rivers?

Answer – We are not sure how that is going to play out at this time. There is still a lot that the legislators have to work out.

Comment – I am aware that DEP is developing a nutrient trading rule. It seems like the document should at least mention this.

Response – There is a water quality trading program in the lower St. Johns. DEP is looking to possibly expand that rule statewide. We will mention this in the BMAP.

Project Updates – Mary Paulic and Shane Williams

Question – Are the project spreadsheets going to be available electronically?

Answer – Yes, they will be available on the FTP site.

- If you get any changes you need to make to us today, we can make them before this document is posted to the FTP site.
- Projects are classified as either funded, planned or conceptual.
- In the urban stormwater project summary, there are 89 total projects.
 - Five projects are planned, two are conceptual, and the rest are funded.
 - There has been a bit of a change in the operation and maintenance.
 - This has to do with the Department of Transportation deciding to not use fertilizer in the right-of-ways. This number has increased because it is a direct load reduction to the surface with no attenuation.
- The education and outreach number has not changed, yet. We are still making some adjustments and this may increase a bit.
 - There are a number of components of education and outreach that can get credits.
 - Some of them are requirements if you have an MS4 permit.
 - The max credit is 6% off of the urban fertilizer category if all activities are in place.

Question – Is the 6% maximum credit the same in all TMDLs?

Answer – Yes, that is how it is done across the state.

- The wastewater loading reduction number has changed a bit.
 - There was a calculation error before with the conversion of OSTDS to sewer.

- Wastewater is now achieved about an 83% reduction in loading, OSTDS has a 3.9% reduction, and urban fertilizer is at a 7% reduction.

Question – In Lake Apopka, we put a price tag on total phosphorus (TP) removal. Why do we not do this with nitrogen?

Answer – Project cost data is included in the project data tables, when it is available.

Question – Do you have a ballpark cost per pound number for nitrogen?

Answer – It is more expensive with nitrogen removal. Total phosphorus is easier to capture because it has the ability to bind to solids. It would depend on the source category you were considering. In the case of stormwater projects it can range from hundreds to thousands of dollars per pound, depending whether you are looking at the 1-year or 20-year costs.

Comment – The numbers for TP can be quite high as well depending on the concentration. There may be a major economy of scale.

Response – The economy of scale is true for regional type projects. We do not get the advantage of economy of scale that much with stormwater, because in a karst area drainage areas tend to be smaller and it is not always feasible to construct beyond the local scale.

Question – I don't see any attempt to prioritize projects by cost per amount removed?

Answer – The state does not do this, but the agencies that are doing the projects do because they are the ones funding the projects. This happens during project development and before submission of the project to DEP for the BMAP. There is also a lot of variability between source categories so comparing one type of project to another is misleading.

Marion County Stormwater Comment – We look at the cost per pound removal for phosphorus and nitrogen, and the costs per drainage area acreage. We give out points on a number of different factors (10 or 11) that we use.

Comment – For those going after TMDL grants, you get points for your project being listed in the BMAP or addressing an identified impaired waterbody.

Proposed Wastewater Effluent Standards for Permitted Facilities – Mary Paulic

- These are the current wastewater effluent standards in the Marion County Land Development Code (LDC). They vary depending on whether you are in the primary or secondary protection zone, and the type of effluent disposal system in place.

Designed Average Daily Flow (in gallons per day)	Effluent Disposal System		
	RRLA	SRLA	PAR
Primary Protection Zone			
Greater than or equal to 500,000	3 mg/L	3 mg/L	10 mg/L
Less than 500,000 but greater than or equal to 10,000	3 mg/L	6 mg/L	10 mg/L
Less than 10,000	10 mg/L	10 mg/L	10 mg/L
Secondary Protection Zone			
Greater than or equal to 500,000	3 mg/L	3 mg/L	10 mg/L
Less than 500,000 but greater than or equal to 100,000	3 mg/L	6 mg/L	10 mg/L
Less than 100,000 but greater than or equal to 10,000	6 mg/L	6 mg/L	10 mg/L
Less than 10,000	10 mg/L	10 mg/L	10 mg/L

Question – Are these numbers total nitrogen (TN)?

Answer – Yes, they are TN.

- The LDC has additional rules for existing facilities using Rapid Infiltration Basin Systems (RIBS). They are trying to move people away from using these for wastewater disposal.
- These LDC standards apply to unincorporated Marion County only. There is also a requirement for facilities to test for nitrate and TN.

Question – What is the target date for this?

Answer – This is in effect in Marion County and has been for a while now.

- We would like to propose other standards for the BMAP area:
 - The required reporting of effluent concentrations of TN.
 - We feel like this is a better indicator of what is going on at plant. There would be a minimum of quarterly sampling.
 - We want to mirror the Marion County LDC standards for all new and expanded wastewater treatment facilities within the primary protection zone that have a permitted nutrient discharge.
 - This would include all facilities in that protection zone, not just the unincorporated area, and include industrial wastewater facilities as well if they have a nutrient effluent limit.
 - Note: The primary protection zone is located entirely within Marion County.

Comment – That protection zone uses the modeled 10 year travel time, which isn't an accurate depiction of the aquifer.

- The BMAP would require existing plants within the primary protection zone to connect to central sewer if feasible, or improve wastewater treatment to meet the effluent standards.
 - We still have to work to determine what would be considered feasible and how to apply these standards.

Comment – I would like to recommend that you use independent monitoring, and not just what operators report.

Comment – There should be some enforcement provisions in this that give the county some teeth to get plants into compliance.

- For the entire BMAP area, we are proposing that existing wastewater treatment facilities using rapid rate land application as their primary disposal system convert to a slow rate land application, connect to central sewer, or convert to public access reuse.
 - Marion County facilities already have a date in the LDC for this of January 1, 2019, but we will have to look at what date we use for everyone else. A possible option is using the end of permits.

Question – Who is going to be responsible for handing the sampling data, is it the county?

Answer – This is something that we are still looking at.

Comment – This would probably require an existing permit modification.

- We are also looking at applying a permit effluent standard of 6 mg/L average or 10 mg/L for reuse to the BMAP area outside the primary protection zone.
 - Local codes would take precedence over BMAP requirements.
 - New effluent requirements would most likely be examined at the time of permit renewal.

Comment – The primary protection zone should be the most vulnerable part of the spring-shed. It should be all of it, and not just small circle within it. I am concerned with the exemptions for reuse. There have been studies that show that this nitrogen is just as likely to make it to our aquifer as with RIBS and other methods of application.

Comment – Lake County has a facility where at least 10% of the nitrogen from the reuse water being applied to land is making it into the aquifer.

Question – How are these standards determined?

Answer – We looked at the standard that seems reasonable for facilities to be able to achieve.

Comment – Many small plants are able to reach low nitrogen numbers when they are operated correctly.

Question – Is there an ongoing simulation or nitrogen inventory that looks at whether we are going to meet the desired goals with these standards?

Answer – Right now we use the nitrogen source inventory. We may in a few years be able to look at groundwater models from the water management district and start to understand transformation and transport of nitrogen.

Comment – I agree that this is something we need, and is within the capabilities of people on staff. We should do what is most effective.

Response – The adoption of the BMAP is not the end of what we do, it is just the beginning.

Comment – We want to make sure that the BMAP works when it comes out for adoption.

Comment – I attended a DEP meeting for SB536 that was discussing reuse and stormwater. They discussed indirect potable reuse, or toilet to tap, which is already in use in California and worldwide. Clearwater is looking at doing direct potable reuse, even though they could to desalinization since they are on the coast. This seems like something we should be looking into. This would solve some water quality and quantity problems and would send a good message that we are serious about protecting our springs. We should do a comparison for costs of toilet to tap.

Comment – What is the appetite for taking the entire Silver Springs basin and saying that future wastewater plants and existing plants will meet advanced wastewater treatment (AWT) standards within a certain number of years? I could see us having the exact same discussions in the BMAP update in 5 years. We seem to be avoiding a goal or tool that is available. It will cost money, but the alternative is great. It would be wrong to not have a goal of AWT for all facilities by a certain date.

Response (Marion County Utilities) – Marion County is already doing this, and the city of Ocala will soon be there as well. Belleview is already at AWT, and Dunnellon is in the process of getting something set up for funding to be AWT.

Comment – The public needs to be made aware that the county is already treating to AWT, and that connecting to the county's system is a good thing.

Comment – The BMAP needs to say that package plants connect to central sewer or upgrade to AWT.

Comment – Everyone wants to have a BMAP that is in compliance, but we should probably write the standards to where some facilities are not already in compliance.

Comment (Belleview Utilities) – I am getting ready to run a lot of sewer line, but there is nothing in the law forcing people on septic to hook up to the line. Something needs to be put in place to make this happen.

Comment – This issue is not just a small town issue, Ocala is having the same problem as well.

Question – Is there a provision that says when a property is transferred, they hook up to central sewer if it is available?

Answer – No, there is not.

Comment – In terms of public opinion, the public is normally willing to pay the costs when they really know the benefits. It is important for the commission to let people know the benefits of doing the right thing. This BMAP is a good place to voice those advantages.

Comment – We also need to look at the future, because there is some discussion on dropping the nitrogen standard for drinking water from 10 to 5. Many other countries already have lower standards than we do.

Comment – We only really make progress when we give incentives. Many people are going to reject change, but we have to incentivize the change.

Question – So, Belleview is getting ready to construct a sewer line and there is nothing to make people hook up to it?

Response (Belleview Utilities) – That is correct.

Next step for an OSTDS Strategy – Mary Paulic

- Displayed are the location of OSTDS by recharge category within the BMAP area. The majority of these lie within Marion County.

Comment – Lake County is under a BMAP too, so what we do for this one would affect that one as well.

- Displayed is the distribution of OSTDS, it follows the transportation corridor for the most part.
- About 40% of loading to the Upper Floridan Aquifer is from OSTDS.
 - When you look at the 10 year travel time area, OSTDS trump the other categories as the greatest source.
- Ocala is looking at a project to connect 850 septic tanks to central sewer.
- There are also a couple of other small OSTDS projects.
 - Funding was provided for a collection system down Sharpes Ferry Road, which will allow for future septic hook ups.
- DEP as well as SJRWMD provided funding for the connection of Silver Springs Regional wastewater treatment plant to Silver Springs Shores wastewater treatment facility, which allows for future connections along Baseline Road.
- OSTDS is one of largest potential TN sources in the BMAP are. It ties agriculture overall, but makes up much more in the 10 year capture zone.
- There were a large number of OSTDS that were not associated with residential or urban land uses. The largest numbers of OSTDS were in medium and low density residential areas. Very little were found in high density residential areas.
- There is currently a study being conducted by the Department of Health to evaluate alternative OSTDS treatment systems. The results will not be available for inclusion into the BMAP.

- DEP has a study on a drain-field amendment that helps to speed up the nitrification process.
 - Chang, Ni-Bin; et al. (2011). On-Site Sewage Treatment and Disposal Systems Evaluation for Nutrient Removal. FDEP Project #WM928. Stormwater Management Academy, University of Central Florida.
 - Publication has been posted to the BMAP ftp site.
- There are also plans in Orange County to try Bold & Gold as a drain-field amendment.
- The Marion County LDC requires connection for new development within 400 feet of sewer.

Question – how much does it cost for drain-field amendment and is this something we should consider?

Answer – This is something we have to look into more.

Comment – Some of these technologies are not proven yet and we should base our reductions on proven technologies.

Response – There are different types of projects in the BMAP. These are research projects and we do not calculate any reductions based on this technology.

Comment – We have been using Bold & Gold for stormwater and got a 78% reduction of nitrogen. Bold & Gold is being tested as part of the Department of Health study.

Comment – Until a study has been done on actual septic tanks in field conditions, we cannot call the technologies proven.

Question – What is the average nitrogen concentration from OSTDS?

Answer – It is 9.9 lbs per year per person.

Comment – The concentration in the effluent is around 40-60 mg/L.

Question – There is some attenuation though, right?

Answer – There is often not much attenuation with how well drained our soils are. A problem with the Bold & Gold is that it treats nitrate and not organic nitrogen, which is what is coming out of the septic tank.

- Marion County did an OSTDS prioritization study in 2009.
- A complication factor is that there are multiple utility jurisdictions, and that many private utility areas need further refinement or delineation.
 - There is a need for improved accounting of locations and number of OSTDS.
- We also don't have all of the tools necessary to address source.
 - There are some areas with high and medium density residential land uses that are currently on OSTDS where there is no collections system in place.
- The proposed solution:
 - It is a project that will be included in the BMAP.

- It is continued discussion with Utility Directors on developing a strategy to better address this source as there is more work needed than what we can do on such a short timeframe.
- The strategy would conceivably include priority locations and funding.

Question – There are small community wastewater grants from DEP, would this cover septic abatement?

Answer – I am not sure, we will have to look into this. There is another grant program in place that can fund connections.

Comment – There was a small facility that tried to apply for that grant with assistance from the Florida Rural Water Association, but couldn't get it because it was so hard to quantify the achievable benefits.

- There is need for more discussion on how to overcome the obstacles and who would get the teeth.

Focus areas – Mary Paulic

Some areas of focus are:

- Those with a high concentration of OSTDS that are in a high recharge zone.
- Agricultural areas where BMPs are not in place. There are many agricultural areas that still need to implement BMPs.

Question – How recent is the displayed map that is showing BMP implementation?

Answer – June, 2014.

Comment – There have been a few more areas that have implemented BMPs since that time.

Comment – I have gotten over 6,000 acres enrolled so far this year, which demonstrates that they really are trying.

- The high recharge area is where there is high concentration of OSTDS and agriculture.
- There are 3 proposed strategies or projects:
 - Public education outreach.
 - One suggestion that came out of stormwater discussions was a more collaborative effort and maybe using a spring's forum format.
 - Small farm equine BMP implementation.
 - There is a need to look at how to implement small farm equine BMPs
 - OSTD 9-1-1.
- These are the areas of where intensive effort is needed in the BMAP.

Next Steps – Mary Paulic

We now have some new points to have discussions over. There is still a need for a public meeting to discuss the BMAP. We are waiting for more internal review before releasing more text of the BMAP for your review.

Public Comment

Comment – I was impressed by the number of stormwater projects in the spreadsheet, but do not see a lot of quantifications for them.

Response – Many of our projects do have a monitoring component that allows us to quantify reductions, or literature values for treatment efficiency can be used, but some agencies are just not able to quantify the reduction. Some types of projects like public education or maintenance cannot be quantified individually. DEP grants and other cooperative funding initiatives often require a monitoring component or estimates of removal. As new data are obtained they can be reported back to the BMAP process through annual reports.

Comment – On the university side, we are required to write annual reports with the outcomes and impacts that require quantification of benefits.

Response – Some of the future proposed projects may not be at the point of being able to quantify the benefits because the location of the project may not be known yet.

Bob Knight- the springs issues should be looked at holistically by integrating the BMAP with the MFL. Studies have shown that Agricultural BMPs are not adequate in reducing nitrate levels to levels we are trying to achieve. It is not enough to get all agricultural lands enrolled in BMPs. We need to be honest with what we can achieve. It is not a 79% reduction. We are talking about a BMAP that may not achieve the reduction needed in the near future. We need to cut the load from agriculture, septic, and urban fertilizer use. We are going to do side by side comparison of the BMAP with our plan and you should save yourself from being embarrassed. The BMAP is an illusion of accomplishing something, but is not really accomplishing anything.

Meeting Adjourned